

**2018 ANNUAL & 2019 FIRST SEMI-ANNUAL
GROUNDWATER MONITORING AND CORRECTIVE
ACTION REPORT**

**ALABAMA POWER COMPANY
PLANT GADSDEN
ASH POND**

August 1, 2019

Prepared for

Alabama Power Company
Birmingham, Alabama

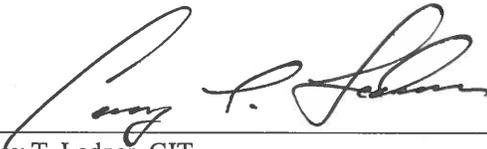
By

Southern Company Services
Earth Science and Environmental Engineering



CERTIFICATION STATEMENT

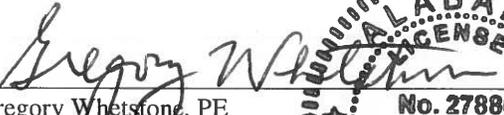
This *2018 Annual and 2019 Semi-Annual Groundwater Monitoring and Corrective Action Report, Alabama Power Company - Plant Gadsden Ash Pond* has been prepared in accordance with the United States Environmental Protection Agency's coal combustion residual rule (40 CFR 257 Subpart D) and ADEM Admin. Code r. 335-13-15 under the supervision of a licensed professional engineer in the State of Alabama. As such, I certify that the information contained herein is true and accurate to the best of my knowledge.



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Originator

7-25-2019

Date



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7/25/19

Date

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ABBREVIATIONS

SCS	Southern Company Services
APC	Alabama Power Company
BGS	below ground surface
bTOC	below top of casing
°C	degrees celsius
cm/sec	centimeter per second
COC	chain of custody
DO	dissolved oxygen
DUP	denotes duplicate sample
ft	feet
gpm	gallon(s) per minute
m	meter
mg/L	milligram per liter
MDL	method detection limit
mL/min	milliliter per minute
MSL	mean sea level
MW-	denotes “Monitoring Well”
NTU	nephelometric turbidity unit
ORP	oxidation reduction potential
RL	reporting limit
RPD	relative percent difference
TDS	total dissolved solids
TOC	top of casing
TSOP	technical standard operating procedure
QA/QC	quality assurance/quality control

1.0 INTRODUCTION

In accordance with the United States Environmental Protection Agency (EPA) coal combustion residual (CCR) rule (40 C.F.R. Part 257 Subpart D) and the State of Alabama's ADEM Admin. Code Chapter 335-13-15, this 2018 Annual & 2019 First Semi-Annual Groundwater Monitoring and Corrective Action Report has been prepared to document 2018 and 2019 groundwater monitoring at the Plant Gadsden Ash Pond and satisfies the requirements of § 257.90(e) and ADEM Admin. Code r. 335-13-15-.06(1)(f). This report also satisfies state semi-annual reporting requirements under ADEM Admin. Code r. 335-13-15-.06(5)(g). Semi-annual monitoring and reporting for Plant Gadsden Ash Pond is performed in accordance with the monitoring requirements § 257.90 through § 257.94, and ADEM Admin. Code r. 335-13-15-.06(1) through (5).

This annual report documents CCR-rule-related groundwater monitoring activities completed through June 30, 2019. Groundwater samples were collected from the groundwater monitoring system for the Ash Pond CCR Unit at Plant Gadsden. Samples have been analyzed for the Appendix III and IV monitoring parameters in accordance with the Site's PE-certified groundwater monitoring system, PE-certified statistical analysis plan, and site-specific hydrogeologic monitoring plan. This report represents a discussion of the current findings with relevant conclusions and recommendations for future monitoring activities at the Site.

2.0 SITE LOCATION AND DESCRIPTION

Alabama Power Company's (APC) Plant Gadsden Electric Generating Plant (Plant Gadsden) is located in the northeastern area of the city of Gadsden, in central Etowah County, Alabama. The physical address of the plant is 1000 Goodyear Avenue, Gadsden, AL 35903. Plant Gadsden occupies Sections 2, 3, and 11, Township 12 South, Range 6 East (USGS, 1986). The Ash Pond is located northeast of the plant and separated from the main plant by the Coosa River. **Figure 1, Site Location Map**, depicts the location of the Plant and Ash Pond with respect to the surrounding area.

2.1 Site Geology and Hydrogeology

2.1.1 Physical Setting

Plant Gadsden is located within the Coosa Valley district of the Valley and Ridge physiographic section (Sapp and Emplaincourt, 1975). The neighboring Coosa River forms a broad, gently sloping valley with elevations between 510 and 530 feet MSL. Present to the West of Coosa River are a series of ridges including Shinbone Ridge, Lookout Mountain, and Big Ridge, some of which reach elevations above 1,450 feet MSL (USGS, 1986). Local Site elevations near the Ash Pond are approximately 520 feet above mean seal level (MSL). The embankment elevations that form the perimeter of the Ash Pond reside between 520 and 525 feet MSL.

2.1.2 Geology and Hydrogeology

Plant Gadsden is in the Appalachian thrust belt, which consists of a series of northeast trending thrust sheets and folds of Cambrian to Pennsylvanian strata. In general, the valleys represent eroded or breached anticlines underlain by Cambrian and Ordovician carbonates. The ridge crests are typically composed of relatively resistant sandstone and chert units and represent erosional remnants (Mann and Baker, 1995). The Appalachian thrust belt is bordered to the west by the Black Warrior basin, to the northwest by the East Warrior Platform, and to the north-northwest by the Nashville dome. It is bordered to the southeast by the Appalachian Piedmont (Osborne and Raymond, 1992).

A thrust fault lies near Plant Gadsden. The exact geometry and configuration of the fault is unknown as the fault is concealed under alluvium. To the north of the fault, folds and faults have a more moderate expression and generally trend to the northeast. To the south of the thrust fault, geologic structures become more complex, folding is more intense, and the structures trend in a more easterly orientation (Bossong, 1989). In general, faults in this region (including the Gadsden Fault) were active during the late Paleozoic

Alleghanian orogeny but are not considered to be presently active. **Figure 2, Site Geologic Map**, illustrates the surface geology at the site and neighboring areas.

Site geology can be described with hydrogeological conceptual site model (CSM) that describes the stratigraphy at the Site and occurrence of groundwater. At the Site, 2 distinct formations have been identified underlying the Ash Pond and are described from shallowest to deepest as follows:

1. Surficial soils are described as Quaternary-age alluvial low terrace deposits and high terrace deposits consisting of varying amounts of sand, silt, clay, and gravel associated with river deposition (Raymond et al., 1988). The thickness of these deposits range from 20 to 30 feet at the Site. Site groundwater monitoring wells are installed within higher-permeability zones near the base of the alluvial deposits and near the interface with underlying rock.
2. The Conasauga Formation (Middle and Upper Cambrian) which consists of varying amounts of limestone, dolomite, and shale. Chert and siltstone horizons can be present locally. Limited core logs from the Site indicate the Conasauga to be a medium to dark gray mudstone or shale with noticeable calcite veining. In general, the Conasauga Formation is characterized as a shoaling-upward succession in which deep water shale grades vertically into a diverse assemblage of carbonate ramp facies. In Etowah County, the Conasauga Formation has been targeted as a potential source for shale gas and is preserved within the Gadsden antiform (Pashin, 2008).

2.1.3 Uppermost Aquifer

There are three primary aquifer systems in the plant vicinity: the Pottsville aquifer system, the Tusculumbia-Fort Payne aquifer system, and the Knox-Shady aquifer system (Bossong, 1989). Groundwater also occurs in the Quaternary alluvial deposits in usable quantities.

The uppermost aquifer beneath the Site corresponds to coarse and more permeable fraction of alluvial overburden soils and weathered/fractured rock near the soil-rock interface. The uppermost aquifer is typically located at depths between 15 and 50 feet below ground surface (BGS). Soils are generally poorly graded sands with layers of clay and well-graded gravels that overlay a mudstone or shale bedrock. Groundwater recharge to the uppermost aquifer is largely accomplished via infiltration of precipitation and subsequent percolation down to the water table. Monitoring wells are typically screened across reddish-brown (iron-coated) coarse sediments and or weathered Conasauga mudstone/shale.

3.0 GROUNDWATER MONITORING SYSTEM

Pursuant to § 257.91 and ADEM Admin. Code r. 335-13-15-.06(2), Plant Gadsden has installed a groundwater monitoring system to monitor groundwater within the uppermost aquifer. The PE-certified groundwater monitoring system for the Ash Pond is designed to monitor groundwater passing the waste boundary of the CCR unit within the uppermost aquifer. Wells were located to serve as upgradient or downgradient monitoring points based on groundwater flow direction as determined by the potentiometric surface elevation contour maps.

Monitoring wells were screened in the uppermost aquifer beneath the Site, which is identified as the more permeable fraction of alluvial overburden soils and weathered/fractured rock near the soil-rock interface. The groundwater monitoring system is designed to monitor water quality around the perimeter of the Plant Gadsden Ash Pond with upgradient locations designated on the west side of the Coosa River opposite of the Ash Pond. All groundwater monitoring wells were designed and constructed using “Design and Installation of Groundwater Monitoring Wells in Aquifers”, ASTM Subcommittee D18.21, as a guideline.

The groundwater monitoring network is comprised of 18 monitoring wells and 1 piezometers. Locations GSD-AP-PZ-1, GSD-AP-PZ-5, and GSD-AP-PZ-6 were originally designated as piezometers but later were adopted into the permanent groundwater monitoring network as sampled monitoring wells. Monitoring well locations and piezometers are presented on **Figure 3, Monitoring Well Location Map. Table 1, Groundwater Monitoring Network Details**, summarizes the monitoring well and piezometer construction details and design purpose for the Plant Gadsden Ash Pond. Monitoring well locations MW-14, MW-16, and MW-17 serve as upgradient locations for the Ash Pond. Monitoring well locations MW-1 through MW-12, PZ-1, PZ-5, and PZ-6 are utilized as downgradient locations. GSD-AP-PZ-2 is a water-level only piezometer used to better constrain groundwater flow direction at the Site.

Table 1. Groundwater Monitoring Network Details

Well ID	Purpose	Installation Date	Northing	Easting	Total Depth	Top of Casing Elevation	Ground Elevation	Top of Screen Elevation	Bottom of Screen Elevation
GSD-AP-MW-1	Downgradient	8/8/2017	1279914.4	615079.93	27.79	526.37	523.48	508.58	498.58
GSD-AP-MW-2	Downgradient	8/10/2017	1280352.8	614599.21	28.17	526.16	523.04	507.99	497.99
GSD-AP-MW-3	Downgradient	8/11/2017	1280742.72	614102.00	27.45	526.80	523.68	509.35	499.35
GSD-AP-MW-4	Downgradient	7/15/2013	1281001.39	613884.36	26.27	520.60	517.27	504.33	494.33
GSD-AP-MW-5	Downgradient	8/15/2017	1281367.84	613584.86	26.88	516.27	513.26	499.39	489.39
GSD-AP-MW-6	Downgradient	8/3/2017	1281745.78	612969.64	26.25	515.23	512.09	498.98	488.98
GSD-AP-MW-7	Downgradient	7/16/2013	1281131.20	612627.76	30.30	519.86	517.05	499.56	489.56
GSD-AP-MW-8	Downgradient	8/2/2017	1280261.79	612527.24	32.68	519.22	516.02	496.54	486.54
GSD-AP-MW-9	Downgradient	7/16/2013	1279916.88	613123.38	35.19	520.36	517.41	495.17	485.17
GSD-AP-MW-10	Downgradient	8/3/2017	1279709.35	613729.63	48.42	530.91	527.70	492.49	482.49
GSD-AP-MW-11	Downgradient	7/17/2013	1279209.03	614235.25	34.00	517.01	514.18	493.01	483.01
GSD-AP-MW-12	Downgradient	7/17/2013	1279381.38	614989.08	31.75	521.82	518.73	500.07	490.07
GSD-AP-MW-14	Upgradient	3/27/2018	1277336.39	615233.22	32.84	548.34	545.49	526.49	516.49
GSD-AP-PZ-1	Downgradient	8/14/2017	1281425.07	614048.04	27.47	521.64	518.80	504.17	494.17
GSD-AP-PZ-2	Piezometer	8/16/2017	1281957.82	612944.02	38.00	516.49	513.46	488.49	478.49
GSD-AP-PZ-5	Downgradient	3/28/2018	1280939.08	614998.03	30.77	524.26	521.36	503.36	493.36
GSD-AP-PZ-6	Downgradient	3/28/2018	1280911.35	614555.89	22.35	519.60	516.69	507.69	497.69
GSD-AP-MW-16	Upgradient	9/20/2018	1277286.36	615079.67	36.23	555.83	553.08	530.08	520.08
GSD-AP-MW-17	Upgradient	9/24/2018	1277101.94	615157.25	62.78	550.11	546.88	507.38	497.38

Notes:

1. Northing and easting are in feet relative to the State Plane Alabama West North America Datum of 1983.
2. Elevations are in feet relative to the North American Vertical Datum of 1988.

4.0 GROUNDWATER MONITORING HISTORY

As required by §257.90(e), and ADEM Admin. Code r. 335-13-15-.06(1)(f), the following describes monitoring-related activities performed during the preceding year through June 30, 2019. Since this is the first Annual Groundwater Monitoring and Corrective Action Report, it also describes related activities performed prior to 2018.

4.1 Available Monitoring Data

In accordance with §257.94(b) and ADEM Admin. Code r. 335-13-15-.06(5)(b), eight (8) independent samples were collected from each background and downgradient well and analyzed for the constituents listed in Appendix III and IV prior to April 17, 2019. Background sampling was performed over the period December 2017 to February 2019. Analytical data from the groundwater monitoring events is included as **Appendix A, Groundwater Analytical Data**, in accordance with the requirements of §257.90(e)(3) and ADEM Admin. Code r. 335-13-15-.06(1)(f).

Table 2, Historical Well Sampling Summary, presents a summary of groundwater sampling events completed at the Site for the preceding year, as well as background samples collected prior to 2018. Table 2 also identifies the purpose of the sampling event (i.e., background, detection, etc.). Additionally, “catch-up” sampling events were conducted in July 2018, September 2018, November 2018, December 2018, and January 2019 for wells added or adopted into the groundwater after background sampling initiated in December of 2017. These events are not summarized in Table 2 but are captured in Appendix A.

Table 2. Historical Well Sampling Summary									
	Background								Detection
Event	B.1	B.2	B.3	B.4	B.5	B.6	B.7	B.8	D.1
Date	12/2017	2/2018	4/2018	6/2018	8/2018	10/2018	12/2018	2/2019	2/2019

4.2 Groundwater Elevations

Prior to recording water levels each well was opened and allowed to equilibrate to atmospheric pressure. Within a 24-hour period, depths to groundwater were measured to the nearest 0.01 foot with an electronic water level indicator. Depths are referenced from the top of the inner PVC well casing. Groundwater elevations are calculated by subtracting the depth to groundwater from surveyed top of casing (TOC) elevations.

Groundwater elevations fluctuate in response to rainfall. Seasonal variations of 3 to 10 feet are typical at the Site with fluctuations typically greater further away from the Coosa River which is consistent with groundwater recharge areas. **Table 3, Historical Groundwater Elevations Summary**, provides a summary of water level data for the Site.

Table 3. Historical Groundwater Elevations Summary				
Well ID	Average GW Elevation (ft MSL)	Highest GW Elevation (ft MSL)	Lowest GW Elevation (ft MSL)	GW Elevation Variation (ft)
GSD-AP-MW-1	513.92	519.26	511.57	7.69
GSD-AP-MW-2	513.76	518.15	511.73	6.42
GSD-AP-MW-3	513.67	517.38	511.90	5.48
GSD-AP-MW-4	513.65	517.13	511.89	5.24
GSD-AP-MW-5	510.69	513.01	508.88	4.13
GSD-AP-MW-6	509.76	511.64	508.21	3.43
GSD-AP-MW-7	508.22	513.85	506.97	6.88
GSD-AP-MW-8	507.84	511.45	506.60	4.85
GSD-AP-MW-9	507.85	511.42	506.60	4.82
GSD-AP-MW-10	509.47	511.87	508.97	2.90
GSD-AP-MW-11	508.15	511.67	507.53	4.14
GSD-AP-MW-12	511.35	515.43	509.64	5.79
GSD-AP-MW-14	500.27	501.78	499.17	2.61
GSD-AP-PZ-1	512.82	519.05	509.86	9.19
GSD-AP-PZ-2	508.07	511.33	507.39	3.94
GSD-AP-PZ-5	512.62	519.28	509.93	9.35
GSD-AP-PZ-6	512.59	518.72	509.93	8.79
GSD-AP-MW-16	530.68	531.98	529.67	2.31
GSD-AP-MW-17	532.09	534.03	530.77	3.26

During the period since groundwater monitoring wells were installed in 2017 and completing the initial detection groundwater monitoring event in February 2019 groundwater elevations and flow conditions appear to have changed in response to Site closure activities. As part of closure, the Ash Pond was dewatered, and a final cover system installed in 2018. The dewatering and final cover placement have altered local hydrogeologic conditions and eliminated the Ash Pond area as a recharge source to the aquifer.

As a result, groundwater flow conditions previously interpreted as radial away from the Ash Pond have begun reverting to natural pre-ash-pond conditions (north to south flow). For this reason, wells previously identified as being downgradient (GSD-AP-MW-1, GSD-AP-MW-2, GSD-AP-MW-3, GSD-AP-MW-4, GSD-AP-MW-5, GSD-AP-PZ-1, GSD-AP-PZ-5, GSD-AP-PZ-6) are now hydraulically upgradient of the Site and will serve as background wells sometime in the future. Groundwater elevation data will continue to be evaluated in this respect. **Figures 4 through 6, Potentiometric Surface Contour Map(s)**, depict groundwater elevations and interpreted flow conditions in July 2018, December 2018, and February 2019, respectively, and represent potentiometric surface contour maps during capping and closure as well as post-closure. The transition from December 2018 to February 2019 likely represents a return to normal groundwater flow conditions.

4.3 Monitoring Well Activities and Maintenance

Monitoring well installation and maintenance activities include the installation of 1 piezometer between June 6 and June 7, 2019 and 10 borings between June 6 and June 13, 2019. This work was conducted for purposes of solidifying the hydrogeologic conceptual site model. The newly installed piezometer will be evaluated for addition into the Site groundwater monitoring network. As of June 30, 2019, these locations have not been surveyed and boring logs have not been finalized.

5.0 GROUNDWATER SAMPLING AND ANALYSIS

5.1 Sampling Event Summary

Groundwater sampling for the initial detection monitoring event was performed in February 2019. Samples were analyzed for the constituents listed in Appendix III. Analytical data from the groundwater monitoring events is included as **Appendix A, Groundwater Analytical Data**, in accordance with the requirements of §257.90(e)(3). The following sections describe details from the first detection monitoring event.

5.2 Groundwater Sample Collection

Groundwater samples were collected in accordance with §257.93(a) and ADEM Admin. Code r. 335-13-15-.06(4)(a). Each of the monitoring wells at Plant Gadsden Ash Pond is equipped with a dedicated bladder pump. Monitoring wells were purged and sampled using low-flow sampling procedures whereby samples are collected when field water quality parameters (pH, turbidity, conductivity, and dissolved oxygen) were measured to determine stabilization. Groundwater samples were collected when the following stabilization criteria were met:

- 0.1 standard units for pH
- 5% for specific conductance
- 0.2 Mg/L or 10% for DO > 0.5 mg/l (whichever is greater)
- Turbidity measurements less than 5 NTU
- Temperature and ORP – record only, no stabilization criteria

During purging and sampling, an In-Situ SmarTroll instrument was used to monitor and record field parameters. Once stabilization was achieved, samples were collected directly into appropriately preserved laboratory-supplied sample containers and placed in iced coolers and submitted to the laboratory following standard chain-of-custody protocol.

5.3 Sample Preservation and Handling

Groundwater samples were collected within the designated size and type of containers required for specific parameters. Sample containers were pre-preserved by the laboratory where necessary. Where temperature control was required, samples were placed in an ice-packed cooler and cooled to approximately 4°C. All samples were handled under chain-of-custody (COC) procedures beginning in the field through delivery to the laboratory.

5.4 Laboratory Analysis

Groundwater samples collected for background data included both Appendix III and Appendix IV parameters listed in **Table 4, EPA Appendix III & IV Sampling Parameters**. Groundwater samples collected during the February 2019 detection monitoring event were analyzed for Appendix III monitoring parameters only. Analytical methods used for groundwater sample analysis are listed on the analytical laboratory reports included in **Appendix A**.

Laboratory analyses were performed by the Alabama Power Company Environmental Laboratory (APCEL) in Calera, Alabama or Test America, Inc. (TAL), of Pensacola, Florida and St. Louis, Missouri. Both APCEL and TAL are accredited by National Environmental Laboratory Accreditation Program (NELAP) and maintain a NELAP certification for all parameters analyzed. Groundwater data COC records for the monitoring events are presented in **Appendix A**.

5.5 Quality Assurance/Quality Control

During each sampling event, quality assurance/quality control (QA/QC) samples were collected at a rate of one sample per every 10 detection samples. Equipment blanks and duplicate samples were also collected during each sampling event. QA/QC sample data was evaluated during data validation and is included in Appendix A.

Groundwater quality data for the most recent sampling event were validated following guidance from the EPA Region IV Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (November 2001); the EPA Region IV Data Validation Standard Operating Procedures (US EPA Region IV, September 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 digestion 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 the procedures in EPA National Functional Guidelines for Inorganic Data Review (USEPA, 2014), as guidance.

Table 4	
EPA Appendix III & IV Sampling Parameters	
Appendix III	
Boron	pH
Calcium	Sulfate
Chloride	Total Dissolved Solids (TDS)
Fluoride	
Appendix IV List	
Antimony	Lead
Arsenic	Lithium
Barium	Mercury
Beryllium	Molybdenum
Cadmium	Selenium
Chromium	Thallium
Cobalt	Radium 226 & 228 (combined)
Fluoride	

6.0 GROUNDWATER FLOW DIRECTION AND VELOCITY

During the most recent sampling event, static groundwater levels obtained prior to purging and sampling ranged from 0.88 to 23.85 feet below the top of the casing. A synoptic round of groundwater levels for the most recent sampling event is included in **Table 5, Water Level Summary – February 25, 2019**.

The most recent potentiometric surface map presented in **Figure 7, Potentiometric Surface Contour Map (February 25, 2019)**. Potentiometric surfaces presented on **Figure 7** depict groundwater elevation contour lines across the Site and demonstrate that the generalized groundwater flow direction is from north to south across the Site.

Table 5. Water Level Summary - February 25, 2019			
Well ID	TOC Elev (ft MSL)	Depth to GW 2/25/19 (ft bTOC)	GW Elevation 2/25/19 (ft MSL)
GSD-AP-MW-1	526.37	7.11	519.26
GSD-AP-MW-2	526.16	8.01	518.15
GSD-AP-MW-3	526.80	9.42	517.38
GSD-AP-MW-4	520.60	3.47	517.13
GSD-AP-MW-5	516.27	3.26	513.01
GSD-AP-MW-6	515.23	3.59	511.64
GSD-AP-MW-7	519.86	6.01	513.85
GSD-AP-MW-8	519.22	7.77	511.45
GSD-AP-MW-9	520.36	8.94	511.42
GSD-AP-MW-10	530.93	19.06	511.87
GSD-AP-MW-11	517.01	5.34	511.67
GSD-AP-MW-12	521.82	6.39	515.43
GSD-AP-MW-14	521.71	19.93	501.78
GSD-AP-PZ-1	516.49	2.66	513.83
GSD-AP-PZ-2	524.26	5.16	519.10
GSD-AP-PZ-5	519.60	4.98	514.62
GSD-AP-PZ-6	526.37	0.88	525.49
GSD-AP-MW-16	555.83	23.85	531.98
GSD-AP-MW-17	550.11	16.08	534.03

Groundwater flow velocity at the Site was calculated based on hydraulic gradients, hydraulic conductivity values derived from slug tests, and an estimated effective porosity of the screened horizon. To date, four (4) slug tests have been analyzed. Based on these analyses, the horizontal hydraulic conductivities for the uppermost aquifer ranges from 2.28 ft/day and 67.75 ft/day with 67.75 ft/day observed in a more permeable gravel zone. The geometric mean hydraulic conductivity for the Site is 12.33 ft/day. The hydraulic gradient was calculated between piezometric contour lines depicted on **Figure 7**. The hydraulic conductivity value used in the calculations is 4.35×10^{-3} cm/sec or 12.3 ft/day and representative of the geometric mean. An estimated effective porosity of 20% is used in the flow rate calculations.

Horizontal flow velocity was calculated using the commonly-used derivative of Darcy’s Law as follows:

$$v = \text{linear velocity} = \frac{Ki}{\eta_e}$$

where :

K = hydraulic conductivity

$$i = \text{hydraulic gradient} = \frac{(h_1 - h_2)}{L}$$

η_e = effective porosity

h_1 and h_2 = groundwater elevation at location 1 and 2

L = distance between location 1 and 2

Using this equation, groundwater flow velocity was calculated for the Site and is tabulated on **Table 6, Groundwater Flow Velocity**. As presented on **Table 6** groundwater flow velocity across the Site is approximately 0.37 ft/day.

Table 6. Groundwater Flow Velocity								
Date	K (ft/d)	η_e	h1 (PZ-6)	h2 (MW-10)	Δh	L	i	v
2/25/2019	12.3	0.2	518.72	511.87	6.85	1,202	0.006	0.37 ft/day

7.0 STATISTICAL ANALYSIS

Statistical analysis of Appendix III groundwater monitoring data was performed pursuant to § 257.93 and ADEM Admin. Code r. 335-13-15-.06(4) following the PE-certified statistical method for the Ash Pond.

7.1 Statistical Method

The selected statistical method for the Ash Pond was developed in accordance with 40 CFR § 257.93(f) using methodology presented in *Statistical Analysis of Groundwater Data at RCRA Facilities, Unified Guidance*, March 2009, USEPA 530/R-09-007 (Unified Guidance). The Sanitas statistical software was used to perform the statistical analyses. Sanitas is a decision-support software package, that incorporates the statistical tests required of Subtitle C and D facilities by USEPA regulations and guidance as recommended in the USEPA Unified Guidance (2009) document.

Statistical tests used to evaluate the groundwater monitoring data consist of intrawell prediction limits, combined with a 1-of-3 verification resample plan, are used for pH and fluoride to determine whether there has been a statistically significant increase (SSI) over background groundwater quality. Interwell prediction limits, combined with a 1-of-2 verification resample plan, are used to evaluate boron, calcium, chloride, sulfate, and TDS.

Intrawell prediction limits use screened historical data within a given well to establish limits for parameters at that well. The most recent sample from the same well is compared to its respective background to identify SSIs over background. Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to identify SSIs.

Time series plots were used to screen proposed background data for suspected outliers, or extreme values that would result in limits that are not conservative from a regulatory perspective. Suspected outliers for Appendix III constituents are formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits. No suspected outliers were observed for any of the detected data in any of the data sets.

No obvious seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

The Sen's Slope/Mann Kendall trend test was used to evaluate all background data at each well to identify statistically significant increasing or decreasing trends. The results of this trend analyses showed no statistically significant increasing trends in downgradient wells. A statistically significant decreasing trend was noted for TDS in well GSD-AP-MW-3. Statistically significant decreasing trends were noted for chloride and sulfate in upgradient well GSD-AP-MW-17 and statistically significant increasing trends were noted for sulfate and TDS in upgradient well GSD-AP-MW-16. When trends exist in upgradient wells, it is an indication that groundwater is changing naturally for those parameters unrelated to the facility.

Prediction limits are constructed as recommended in the USEPA Unified guidance, and based on the following:

- Annual false positive rate of 5%
- 1-of-3 verification resample plan – intrawell prediction limits (pH and fluoride)
- 1-of-2 verification resample plan – interwell prediction limits (boron, calcium, chloride, sulfate and TDS)
- Semi-annual sampling
- Constituents = 7 (Appendix III)
- Downgradient wells = 15

Parametric prediction limits are used when the screened historical data follow a normal or transformed-normal distribution. When data could not be normalized or when the majority of data were non-detects, a non-parametric test was utilized. The confidence level associated with both tests is greater than 99%. The confidence levels associated with parametric prediction limits are based on an overall false positive rate of 5%. When data cannot be normalized or the majority of data are nondetects, a nonparametric test is utilized where the highest background value is used to establish the upper prediction limit (and lowest value in the case of pH). The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (USEPA Unified Guidance, 2009), data are analyzed using either parametric or non-parametric prediction limits.

The following guidance is also applicable to the statistical analysis method:

- Statistical analyses are not performed on analytes containing 100% non-detects (EPA Unified Guidance, 2009, Chapter 6).

- When data contain <15% non-detects in the background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the practical quantitation limit (PQL), or reporting limit (RL0, reported by the laboratory.
- When data contain between 15-50% non-detects the Kaplan-Meier non-detect adjustment is applied to the background data.
- Non-parametric prediction limits are used on data containing greater than 50% non-detects.

A summary table of the statistical limits accompanies the prediction limits in **Appendix B, Statistical Data Evaluation**.

Analytical data from the February 25, 2019 monitoring event at the Plant Gadsden Ash Pond was statistically analyzed on April 17, 2019 in accordance with the Site's certified statistical analysis method. Verification resampling to confirm initial SSIs was not performed; therefore, initial SSIs are considered verified. The statistical results of the monitoring event are included in **Appendix B**.

Statistical analysis of Appendix III data identified the following SSIs over background at the listed wells:

- GSD-AP-MW-1: boron, calcium, chloride, sulfate, TDS
- GSD-AP-MW-2: boron, calcium, TDS
- GSD-AP-MW-3: boron, calcium, chloride, sulfate, TDS
- GSD-AP-MW-4: boron, chloride
- GSD-AP-MW-5: boron, calcium, chloride
- GSD-AP-MW-6: chloride
- GSD-AP-MW-7: chloride
- GSD-AP-MW-8: calcium, chloride
- GSD-AP-MW-9: calcium, chloride
- GSD-AP-MW-10: boron, calcium, chloride
- GSD-AP-MW-11: boron, calcium, chloride, TDS
- GSD-AP-MW-12: calcium, chloride, sulfate, TDS

Pursuant to § 257.94(e) and ADEM Admin. Code r. 335-13-15-.06(5)(e), within 90 days from determining an SSI (i.e. until July 16, 2019), APC may (1) prepare a demonstration that a source other than the Ash Pond was the cause, or (2) implement assessment monitoring per § 257.95 and ADEM Admin. Code r. 335-13-15-.06(6). APC implemented assessment monitoring on July 16, 2019.

7.2 Appendix IV Background Data

In accordance with § 257.94(b), and ADEM Admin. Code r. 335-13-15-.06(5)(b), eight (8) independent background samples were collected from the certified well network and analyzed for the constituents listed in Appendix IV. Pursuant to § 257.95 and ADEM Admin. Code r. 335-13-15-.06(6), Appendix IV groundwater quality data is statistically analyzed and compared to groundwater protection standards if assessment monitoring is implemented. Assessment monitoring was implemented on July 16, 2019. Statistical analysis of the Appendix IV background data and subsequent assessment monitoring results will be completed pursuant to § 257.95 and ADEM Admin. Code r. 335-13-15-.06(6).

8.0 MONITORING PROGRAM STATUS

Plant Gadsden Ash Pond is in detection monitoring. SSIs of Appendix III parameters have been identified. Pursuant to § 257.94(e)(1) and ADEM Admin. Code r. 335-13-15-.06(5)(e)(1), APC has 90 days from the date of determination (which was April 17, 2019) to either (1) prepare a demonstration that a source other than the Ash Pond was the cause, or (2) implement assessment monitoring per §257.95 and ADEM Admin. Code r. 335-13-15-.06(6).

On July 16, 2019 APC implemented assessment monitoring at the Site per § 257.95 and ADEM Admin. Code r. 335-13-15-.06(6).

9.0 CONCLUSIONS AND FUTURE ACTIONS

In accordance with § 257.94(b) and ADEM Admin. Code r. 335-13-15-.06(5)(b), eight (8) independent samples were collected from each background and downgradient well and analyzed for the constituents listed in Appendix III and IV prior to April 17, 2019. Background sampling was performed over the period of December 2017 to February 2019. Groundwater sampling for the first detection monitoring event was performed the week of February 25, 2019. Constituents listed in Appendix III were statistically analyzed and SSIs identified. During the second semi-annual period of 2019 APC will perform the following:

- Pursuant to § 257.94(e)(1) and ADEM Admin. Code r. 335-13-15-.06(5)(e)1., implement Assessment Monitoring at the Site by July 16, 2019;
- Perform the second semi-annual sampling event (first assessment sampling) in August or September 2019; and
- Establish Groundwater Protection Standards (GWPS) and compare Assessment monitoring results to those standards by January 12, 2020 for Appendix IV parameters.

10.0 REFERENCES

- Alabama Department of Environmental Management (ADEM), 2018, Solid Waste Program, Division 13, ADEM Admin. Code Chapter 335-13-15.
- ASTM Standard D5092, 2004(2010)e1, Standard Practice for Design and Installation of Groundwater Monitoring Wells, ASTM International, West Conshohocken, PA, DOI 10.1520/D5092-04R10E01, www.astm.org.
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- USEPA. 2015. Federal Register. Volume 80. No. 74. Friday April 17, 2015. Part II. Environmental Protection Agency. *40 CFR Parts 257 and 261. Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule.* [EPA-HQ-RCRA-2009-0640; FRL-9919-44-OSWER]. RIN-2050-AE81. April.
- United States Geological Survey (USGS), 1986, Gadsden West and Gadsden East Alabama Quadrangles, 7.5 Minutes Series Topographic Map.
- Sapp, C.D., and Emplainscourt, J., 1975, Physiographic regions of Alabama, Special Map 168, Geological Survey of Alabama.

Southern Company Services (SCS), 2018, Plant Gadsden Ash Pond Groundwater Monitoring Plan.

Figures



Legend

- Ash Pond Boundary
- Property Boundary (Approximate)



SCALE 1:8000

DATE 6/13/2019

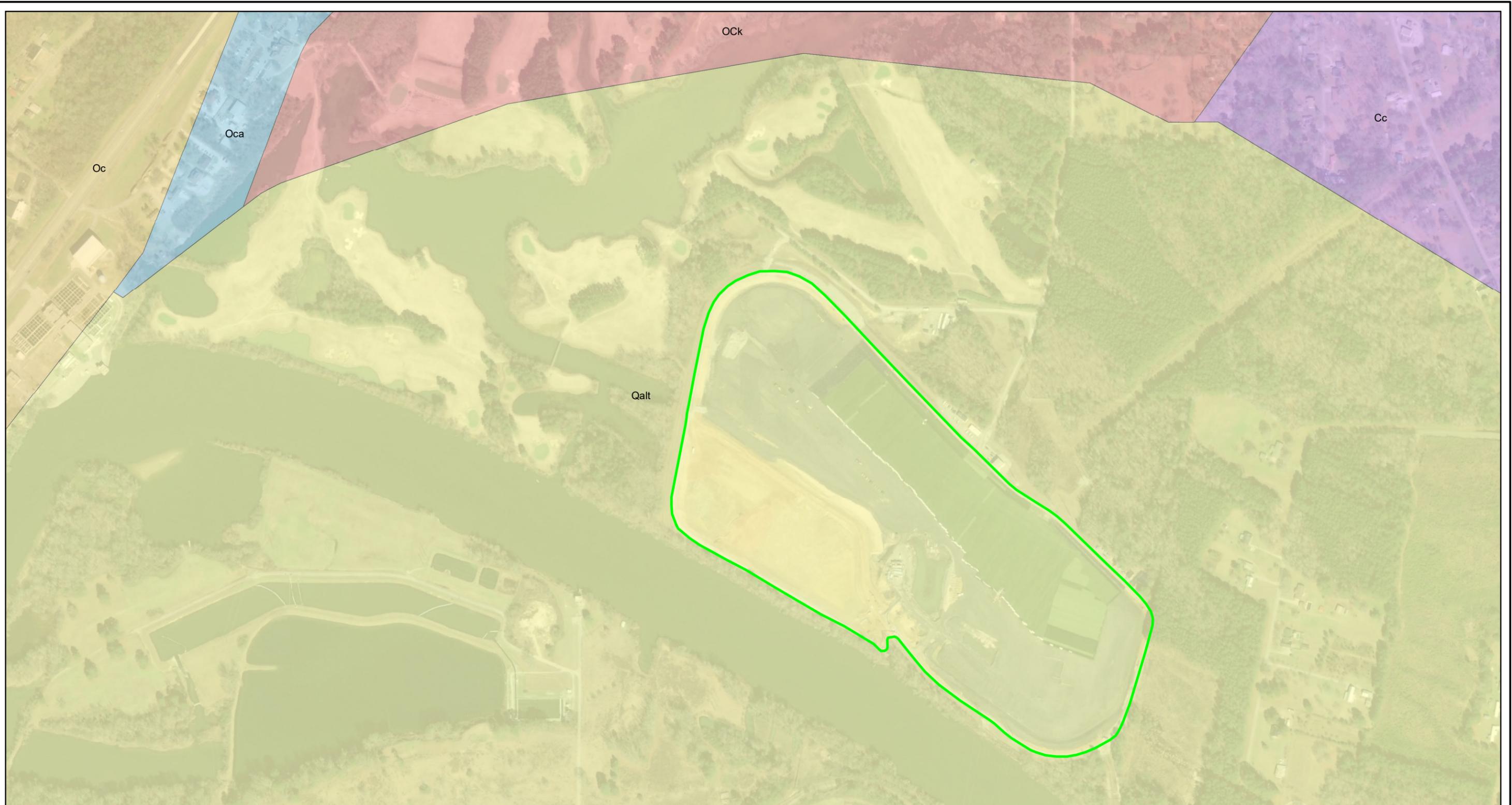
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CHECKED BY GBD

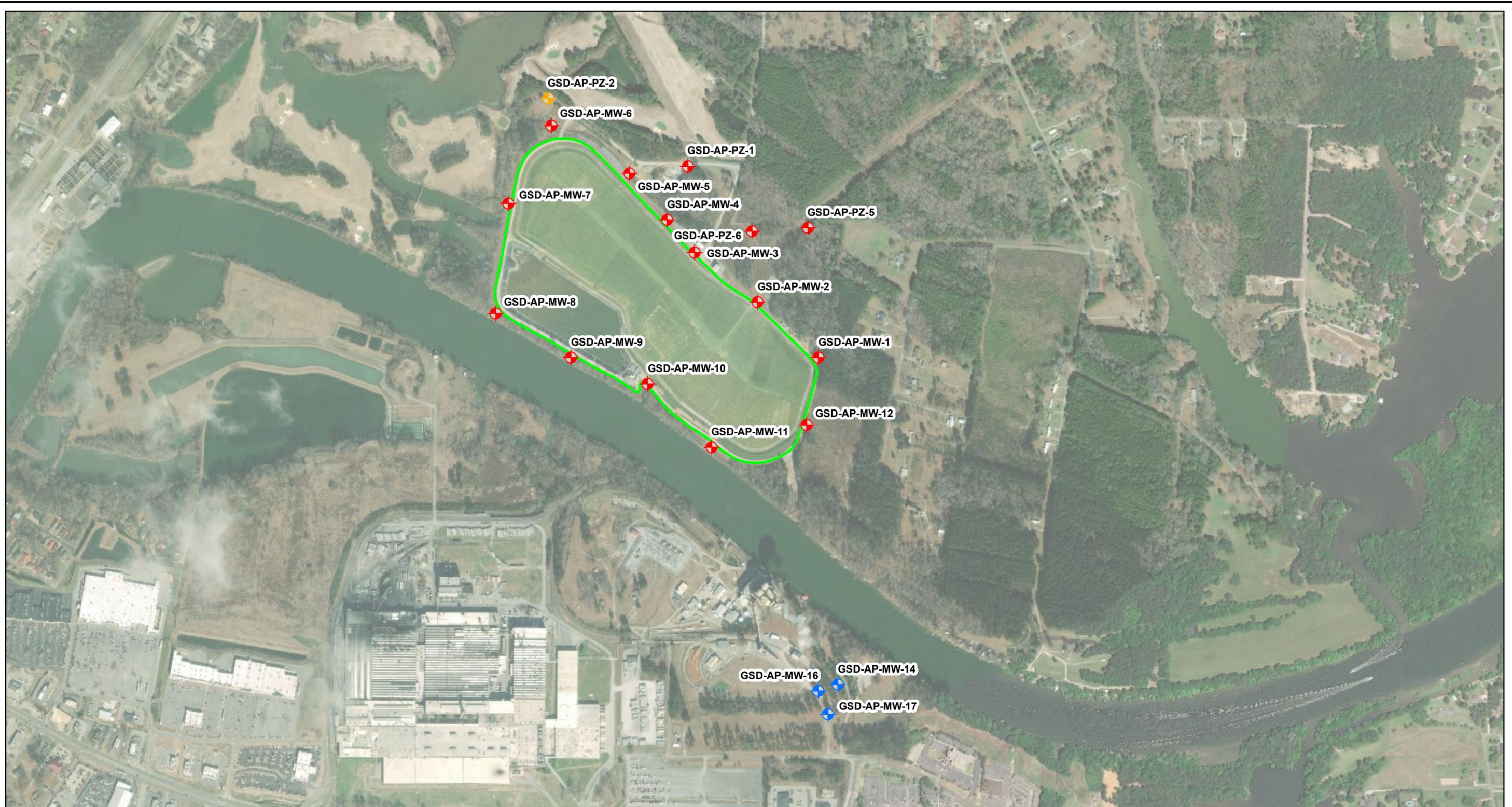
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**SITE LOCATION MAP
 PLANT GADSDEN ASH POND**

FIGURE NO
FIGURE 1





Legend		SCALE 1:6000 DATE 6/13/2019 DRAWN BY KWR CHECKED BY GBD	DRAWING TITLE	
Ash Pond Boundary Geologic Units Alluvial, coastal, and low terrace deposits (Qalt) Attalla Chert Conglomerate Member of the Chickamauga Limestone (Oca)	Chickamauga Limestone (Oc) Conasauga Formation (Cc) Knox Group undifferentiated (Ock)		SITE GEOLOGIC MAP PLANT GADSDEN ASH POND	
			FIGURE 2	



Legend

- ◆ Downgradient Monitoring Well
- ◆ Upgradient Monitoring Well
- ◆ Piezometer
- Ash Pond Boundary



SCALE 1:9000

DATE 7/25/2019

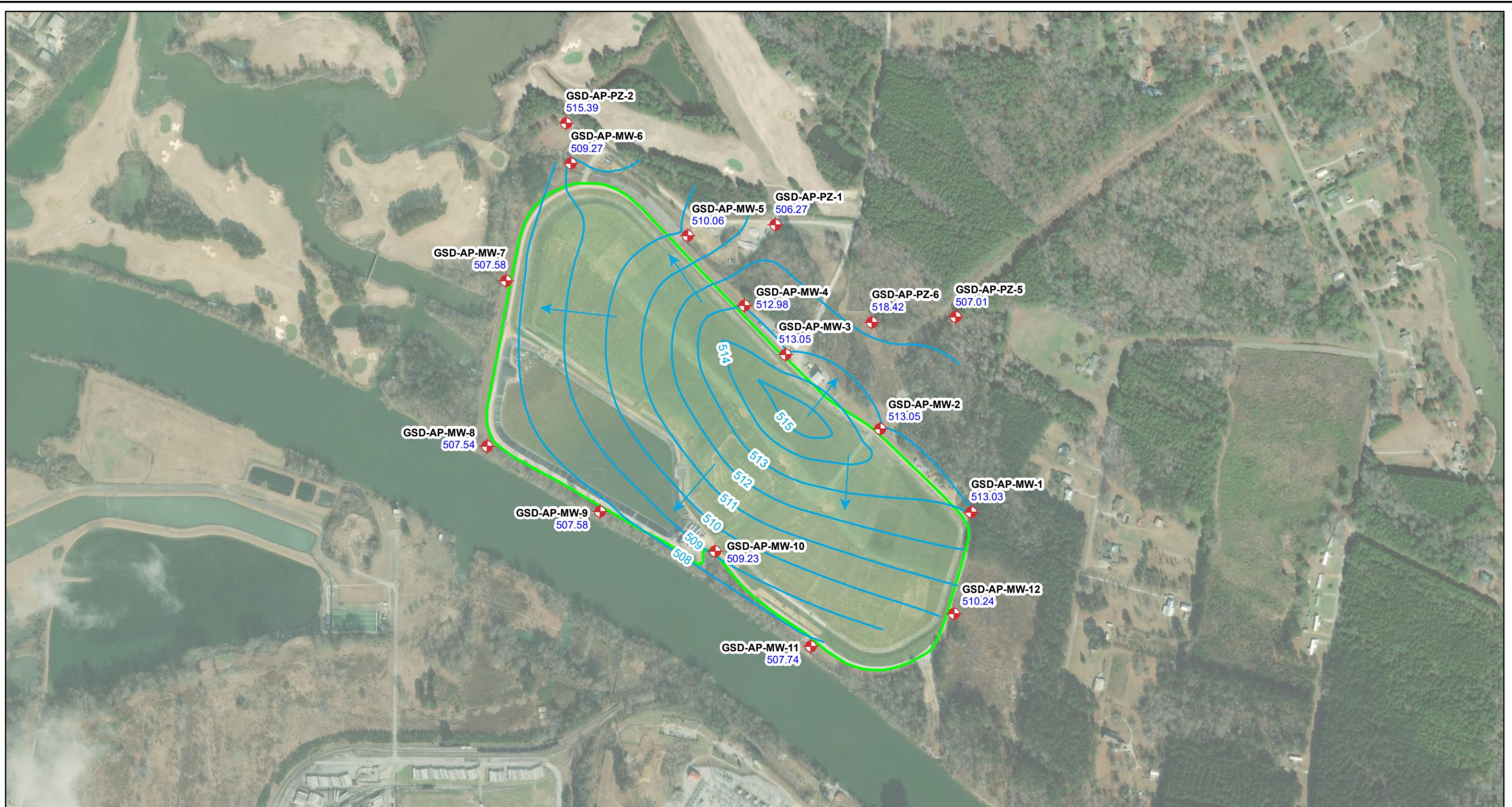
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CHECKED BY GBD

DRAWING TITLE
**MONITORING WELL LOCATION MAP
 PLANT GADSDEN ASH POND**

FIGURE NO
FIGURE 3





Legend

-  Monitoring Well
-  Potentiometric Surface Contour (ft NAVD88)
-  Approximate Groundwater Flow Direction
-  Ash Pond Boundary

GN-AP-MW-1 Well ID
513.03 Groundwater Elevation



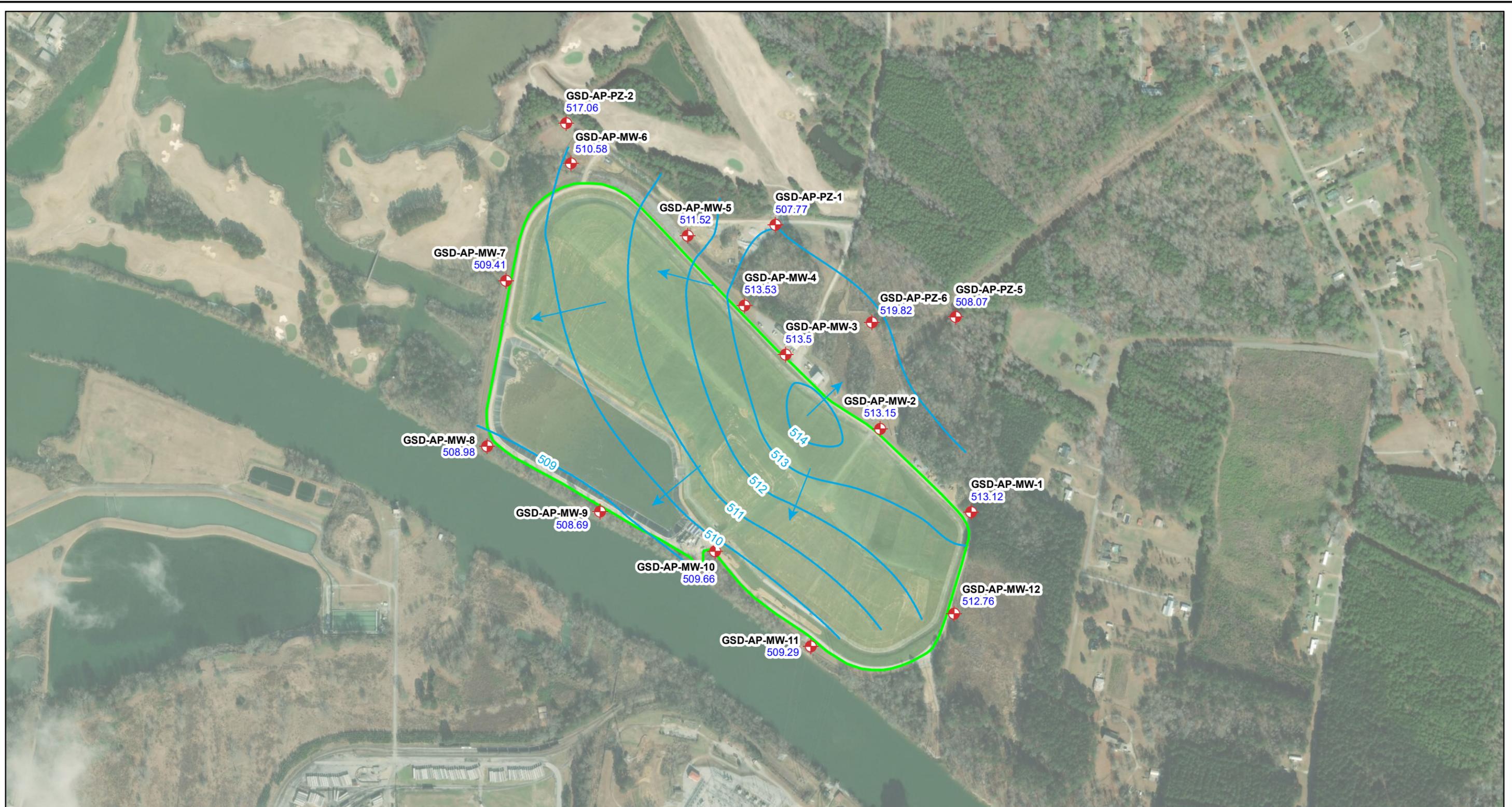
NOTE: NAVD88 indicates North American Vertical Datum of 1988.

SCALE	1:6000
DATE	7/25/2019
DRAWN BY	KWR
CHECKED BY	GBD

DRAWING TITLE
POTENTIOMETRIC SURFACE CONTOUR MAP
 JULY 19, 2018
 PLANT GADSDEN ASH POND

FIGURE NO
FIGURE 4





Legend

-  Monitoring Well
 -  Potentiometric Surface Contour (ft NAVD88)
 -  Approximate Groundwater Flow Direction
 -  Ash Pond Boundary
- | | |
|-------------------|-----------------------|
| GN-AP-MW-1 | Well ID |
| 513.12 | Groundwater Elevation |



NOTE: NAVD88 indicates North American Vertical Datum of 1988.

SCALE 1:6000

DATE 7/25/2019

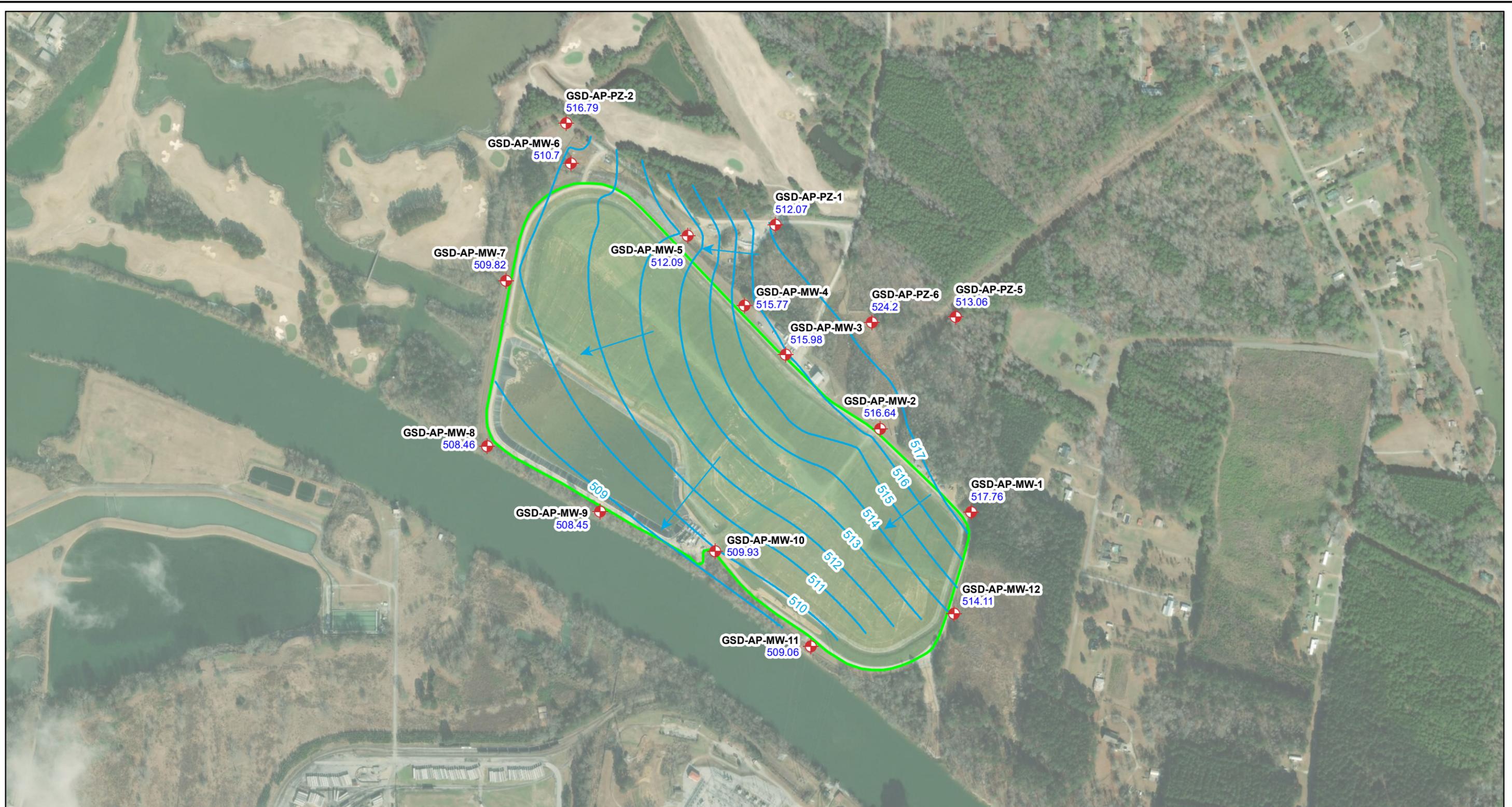
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CHECKED BY GBD

DRAWING TITLE
POTENTIOMETRIC SURFACE CONTOUR MAP
 DECEMBER 3, 2018
 PLANT GADSDEN ASH POND

FIGURE NO
FIGURE 5





Legend

-  Monitoring Well
 -  Potentiometric Surface Contour (ft NAVD88)
 -  Approximate Groundwater Flow Direction
 -  Ash Pond Boundary
- | | |
|-------------------|-----------------------|
| GN-AP-MW-1 | Well ID |
| 517.76 | Groundwater Elevation |



NOTE: NAVD88 indicates North American Vertical Datum of 1988.

SCALE 1:6000

DATE 7/25/2019

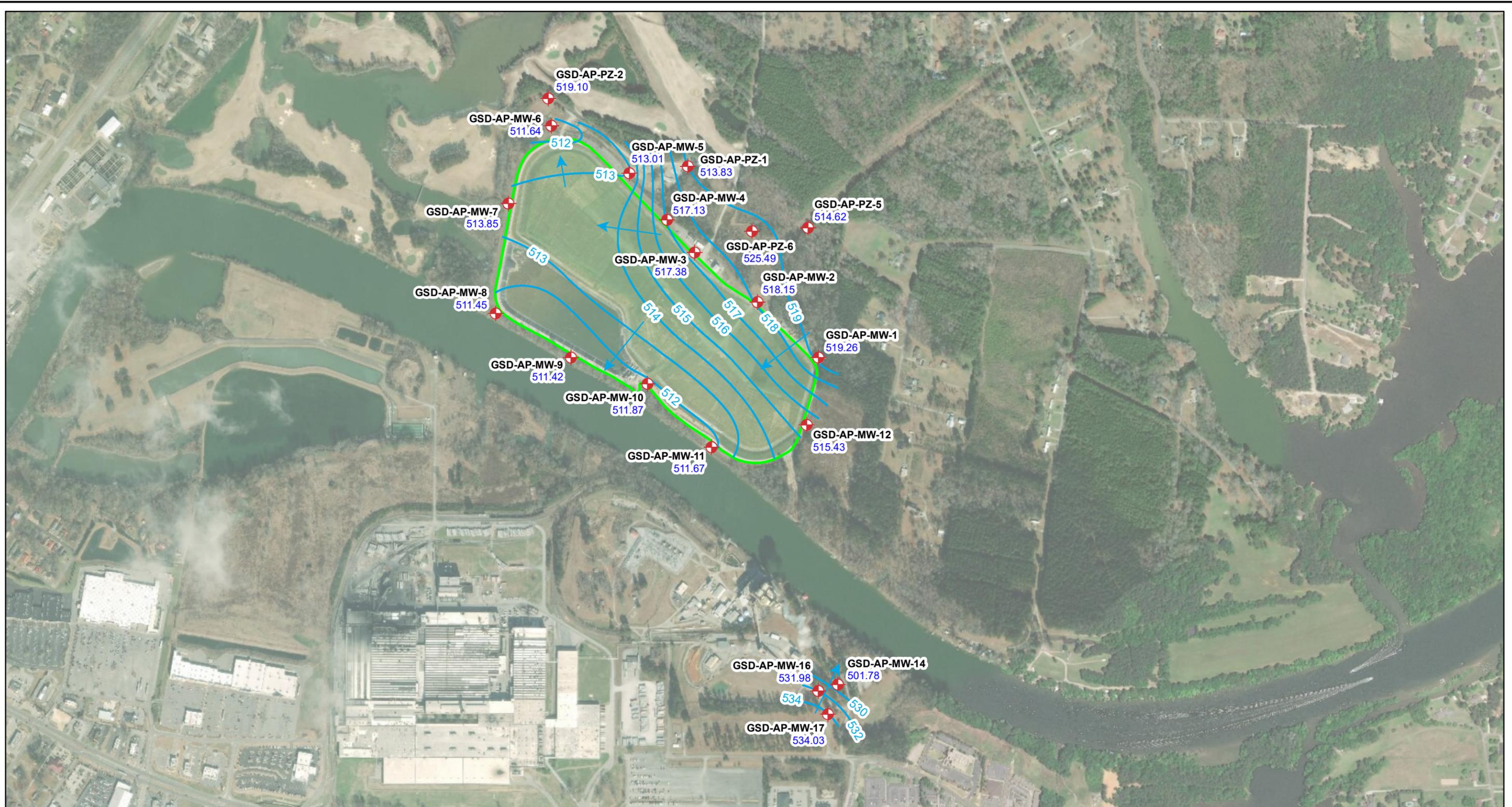
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CHECKED BY GBD

DRAWING TITLE
POTENTIOMETRIC SURFACE CONTOUR MAP
FEBRUARY 4, 2019
PLANT GADSDEN ASH POND

FIGURE NO
FIGURE 6





Legend

-  Monitoring Well
 -  Potentiometric Surface Contour (ft NAVD88)
 -  Approximate Groundwater Flow Direction
 -  Ash Pond Boundary
- | | |
|-------------------|-----------------------|
| GN-AP-MW-1 | Well ID |
| 519.26 | Groundwater Elevation |



NOTE: NAVD88 indicates North American Vertical Datum of 1988.

SCALE	1:9000
DATE	7/26/2019
DRAWN BY	KWR
CHECKED BY	GBD

DRAWING TITLE	
POTENTIOMETRIC SURFACE CONTOUR MAP FEBRUARY 25, 2019 PLANT GADSDEN ASH POND	
FIGURE NO	FIGURE 7
	

Appendix A

Gadsden Ash Pond - Field pH Measurements

Facility	Well	Date	pH (pH)
Plant Gadsden Ash Pond	GSD-AP-MW-14	06-27-2018	3.95
Plant Gadsden Ash Pond	GSD-AP-MW-14	07-18-2018	4.02
Plant Gadsden Ash Pond	GSD-AP-MW-14	08-06-2018	4.07
Plant Gadsden Ash Pond	GSD-AP-MW-14	09-05-2018	4.07
Plant Gadsden Ash Pond	GSD-AP-MW-14	09-24-2018	4.07
Plant Gadsden Ash Pond	GSD-AP-MW-14	10-24-2018	4.1
Plant Gadsden Ash Pond	GSD-AP-MW-14	12-05-2018	4.1
Plant Gadsden Ash Pond	GSD-AP-MW-14	02-05-2019	4.02
Plant Gadsden Ash Pond	GSD-AP-MW-14	02-28-2019	3.94
Plant Gadsden Ash Pond	GSD-AP-MW-16	10-24-2018	5.27
Plant Gadsden Ash Pond	GSD-AP-MW-16	11-14-2018	4.99
Plant Gadsden Ash Pond	GSD-AP-MW-16	11-28-2018	4.74
Plant Gadsden Ash Pond	GSD-AP-MW-16	12-05-2018	4.76
Plant Gadsden Ash Pond	GSD-AP-MW-16	12-18-2018	4.57
Plant Gadsden Ash Pond	GSD-AP-MW-16	01-24-2019	4.45
Plant Gadsden Ash Pond	GSD-AP-MW-16	02-05-2019	4.3
Plant Gadsden Ash Pond	GSD-AP-MW-16	02-28-2019	4.35
Plant Gadsden Ash Pond	GSD-AP-MW-17	10-24-2018	7.92
Plant Gadsden Ash Pond	GSD-AP-MW-17	11-14-2018	8.23
Plant Gadsden Ash Pond	GSD-AP-MW-17	11-28-2018	8.95
Plant Gadsden Ash Pond	GSD-AP-MW-17	12-05-2018	8.77
Plant Gadsden Ash Pond	GSD-AP-MW-17	12-18-2018	8.99
Plant Gadsden Ash Pond	GSD-AP-MW-17	01-24-2019	9.42
Plant Gadsden Ash Pond	GSD-AP-MW-17	02-05-2019	9.23
Plant Gadsden Ash Pond	GSD-AP-MW-17	02-28-2019	9.48
Plant Gadsden Ash Pond	GSD-AP-PZ-5	06-27-2018	5.81
Plant Gadsden Ash Pond	GSD-AP-PZ-5	07-18-2018	5.74
Plant Gadsden Ash Pond	GSD-AP-PZ-5	08-08-2018	5.7
Plant Gadsden Ash Pond	GSD-AP-PZ-5	09-05-2018	5.61
Plant Gadsden Ash Pond	GSD-AP-PZ-5	09-24-2018	5.59
Plant Gadsden Ash Pond	GSD-AP-PZ-5	10-23-2018	5.6
Plant Gadsden Ash Pond	GSD-AP-PZ-5	12-03-2018	5.73
Plant Gadsden Ash Pond	GSD-AP-PZ-5	02-07-2019	5.44
Plant Gadsden Ash Pond	GSD-AP-PZ-5	02-25-2019	5.46
Plant Gadsden Ash Pond	GSD-AP-PZ-6	06-27-2018	5.44
Plant Gadsden Ash Pond	GSD-AP-PZ-6	07-18-2018	5.58
Plant Gadsden Ash Pond	GSD-AP-PZ-6	08-08-2018	5.55
Plant Gadsden Ash Pond	GSD-AP-PZ-6	09-05-2018	5.56
Plant Gadsden Ash Pond	GSD-AP-PZ-6	09-24-2018	5.57
Plant Gadsden Ash Pond	GSD-AP-PZ-6	10-23-2018	5.55
Plant Gadsden Ash Pond	GSD-AP-PZ-6	12-03-2018	5.6
Plant Gadsden Ash Pond	GSD-AP-PZ-6	02-07-2019	5.51
Plant Gadsden Ash Pond	GSD-AP-PZ-6	02-25-2019	5.54
Plant Gadsden Ash Pond	GSD-AP-MW-1	12-06-2017	6.5
Plant Gadsden Ash Pond	GSD-AP-MW-1	02-06-2018	6.48
Plant Gadsden Ash Pond	GSD-AP-MW-1	04-23-2018	6.36
Plant Gadsden Ash Pond	GSD-AP-MW-1	06-26-2018	6.32
Plant Gadsden Ash Pond	GSD-AP-MW-1	08-07-2018	6.32

Gadsden Ash Pond - Field pH Measurements

Plant Gadsden Ash Pond	GSD-AP-MW-1	10-22-2018	6.2
Plant Gadsden Ash Pond	GSD-AP-MW-1	12-04-2018	6.31
Plant Gadsden Ash Pond	GSD-AP-MW-1	02-05-2019	6.1
Plant Gadsden Ash Pond	GSD-AP-MW-1	02-26-2019	6.11
Plant Gadsden Ash Pond	GSD-AP-MW-2	12-06-2017	6.61
Plant Gadsden Ash Pond	GSD-AP-MW-2	02-06-2018	6.66
Plant Gadsden Ash Pond	GSD-AP-MW-2	04-23-2018	6.54
Plant Gadsden Ash Pond	GSD-AP-MW-2	06-27-2018	6.63
Plant Gadsden Ash Pond	GSD-AP-MW-2	08-07-2018	6.57
Plant Gadsden Ash Pond	GSD-AP-MW-2	10-22-2018	6.55
Plant Gadsden Ash Pond	GSD-AP-MW-2	12-04-2018	6.52
Plant Gadsden Ash Pond	GSD-AP-MW-2	02-05-2019	6.47
Plant Gadsden Ash Pond	GSD-AP-MW-2	02-26-2019	6.54
Plant Gadsden Ash Pond	GSD-AP-MW-3	12-06-2017	6.54
Plant Gadsden Ash Pond	GSD-AP-MW-3	02-06-2018	6.39
Plant Gadsden Ash Pond	GSD-AP-MW-3	04-24-2018	6.02
Plant Gadsden Ash Pond	GSD-AP-MW-3	06-27-2018	6.07
Plant Gadsden Ash Pond	GSD-AP-MW-3	08-07-2018	6.28
Plant Gadsden Ash Pond	GSD-AP-MW-3	10-22-2018	6.3
Plant Gadsden Ash Pond	GSD-AP-MW-3	12-03-2018	6.38
Plant Gadsden Ash Pond	GSD-AP-MW-3	02-05-2019	5.83
Plant Gadsden Ash Pond	GSD-AP-MW-3	02-25-2019	5.93
Plant Gadsden Ash Pond	GSD-AP-MW-4	12-07-2017	6.73
Plant Gadsden Ash Pond	GSD-AP-MW-4	02-06-2018	6.76
Plant Gadsden Ash Pond	GSD-AP-MW-4	04-24-2018	6.66
Plant Gadsden Ash Pond	GSD-AP-MW-4	06-26-2018	6.61
Plant Gadsden Ash Pond	GSD-AP-MW-4	08-06-2018	6.68
Plant Gadsden Ash Pond	GSD-AP-MW-4	10-22-2018	6.63
Plant Gadsden Ash Pond	GSD-AP-MW-4	12-03-2018	6.67
Plant Gadsden Ash Pond	GSD-AP-MW-4	02-05-2019	6.63
Plant Gadsden Ash Pond	GSD-AP-MW-4	02-26-2019	6.64
Plant Gadsden Ash Pond	GSD-AP-MW-5	12-07-2017	6.32
Plant Gadsden Ash Pond	GSD-AP-MW-5	02-06-2018	6.27
Plant Gadsden Ash Pond	GSD-AP-MW-5	04-25-2018	6.14
Plant Gadsden Ash Pond	GSD-AP-MW-5	06-27-2018	6.15
Plant Gadsden Ash Pond	GSD-AP-MW-5	08-07-2018	6.18
Plant Gadsden Ash Pond	GSD-AP-MW-5	10-23-2018	6.15
Plant Gadsden Ash Pond	GSD-AP-MW-5	12-05-2018	6.15
Plant Gadsden Ash Pond	GSD-AP-MW-5	02-05-2019	6.08
Plant Gadsden Ash Pond	GSD-AP-MW-5	02-27-2019	6.11
Plant Gadsden Ash Pond	GSD-AP-MW-6	12-07-2017	6.38
Plant Gadsden Ash Pond	GSD-AP-MW-6	02-08-2018	6.29
Plant Gadsden Ash Pond	GSD-AP-MW-6	04-25-2018	6.15
Plant Gadsden Ash Pond	GSD-AP-MW-6	06-26-2018	6.09
Plant Gadsden Ash Pond	GSD-AP-MW-6	08-07-2018	6.16
Plant Gadsden Ash Pond	GSD-AP-MW-6	10-23-2018	6.1
Plant Gadsden Ash Pond	GSD-AP-MW-6	12-03-2018	6.09
Plant Gadsden Ash Pond	GSD-AP-MW-6	02-05-2019	6.04
Plant Gadsden Ash Pond	GSD-AP-MW-6	02-26-2019	6.17

Gadsden Ash Pond - Field pH Measurements

Plant Gadsden Ash Pond	GSD-AP-MW-7	12-07-2017	6.62
Plant Gadsden Ash Pond	GSD-AP-MW-7	02-08-2018	6.39
Plant Gadsden Ash Pond	GSD-AP-MW-7	04-25-2018	6.17
Plant Gadsden Ash Pond	GSD-AP-MW-7	06-26-2018	6.38
Plant Gadsden Ash Pond	GSD-AP-MW-7	08-08-2018	6.56
Plant Gadsden Ash Pond	GSD-AP-MW-7	10-23-2018	6.54
Plant Gadsden Ash Pond	GSD-AP-MW-7	12-04-2018	6.33
Plant Gadsden Ash Pond	GSD-AP-MW-7	02-06-2019	6.13
Plant Gadsden Ash Pond	GSD-AP-MW-7	02-27-2019	6.12
Plant Gadsden Ash Pond	GSD-AP-MW-8	12-07-2017	6.81
Plant Gadsden Ash Pond	GSD-AP-MW-8	02-08-2018	6.73
Plant Gadsden Ash Pond	GSD-AP-MW-8	04-25-2018	6.61
Plant Gadsden Ash Pond	GSD-AP-MW-8	06-26-2018	6.59
Plant Gadsden Ash Pond	GSD-AP-MW-8	08-08-2018	6.6
Plant Gadsden Ash Pond	GSD-AP-MW-8	10-23-2018	6.64
Plant Gadsden Ash Pond	GSD-AP-MW-8	12-04-2018	6.68
Plant Gadsden Ash Pond	GSD-AP-MW-8	02-06-2019	6.62
Plant Gadsden Ash Pond	GSD-AP-MW-8	02-27-2019	6.56
Plant Gadsden Ash Pond	GSD-AP-MW-9	12-07-2017	6.93
Plant Gadsden Ash Pond	GSD-AP-MW-9	02-08-2018	6.96
Plant Gadsden Ash Pond	GSD-AP-MW-9	04-25-2018	6.89
Plant Gadsden Ash Pond	GSD-AP-MW-9	06-26-2018	6.85
Plant Gadsden Ash Pond	GSD-AP-MW-9	08-08-2018	6.94
Plant Gadsden Ash Pond	GSD-AP-MW-9	10-23-2018	6.93
Plant Gadsden Ash Pond	GSD-AP-MW-9	12-05-2018	6.94
Plant Gadsden Ash Pond	GSD-AP-MW-9	02-06-2019	6.73
Plant Gadsden Ash Pond	GSD-AP-MW-9	02-27-2019	6.85
Plant Gadsden Ash Pond	GSD-AP-MW-10	12-06-2017	6.83
Plant Gadsden Ash Pond	GSD-AP-MW-10	02-07-2018	6.82
Plant Gadsden Ash Pond	GSD-AP-MW-10	04-24-2018	6.74
Plant Gadsden Ash Pond	GSD-AP-MW-10	06-27-2018	6.67
Plant Gadsden Ash Pond	GSD-AP-MW-10	08-07-2018	6.72
Plant Gadsden Ash Pond	GSD-AP-MW-10	10-22-2018	6.73
Plant Gadsden Ash Pond	GSD-AP-MW-10	12-04-2018	6.77
Plant Gadsden Ash Pond	GSD-AP-MW-10	02-06-2019	6.67
Plant Gadsden Ash Pond	GSD-AP-MW-10	02-26-2019	6.77
Plant Gadsden Ash Pond	GSD-AP-MW-11	12-06-2017	6.81
Plant Gadsden Ash Pond	GSD-AP-MW-11	02-07-2018	6.74
Plant Gadsden Ash Pond	GSD-AP-MW-11	04-24-2018	6.62
Plant Gadsden Ash Pond	GSD-AP-MW-11	06-27-2018	6.69
Plant Gadsden Ash Pond	GSD-AP-MW-11	08-08-2018	6.67
Plant Gadsden Ash Pond	GSD-AP-MW-11	10-23-2018	6.73
Plant Gadsden Ash Pond	GSD-AP-MW-11	12-04-2018	6.67
Plant Gadsden Ash Pond	GSD-AP-MW-11	02-06-2019	6.58
Plant Gadsden Ash Pond	GSD-AP-MW-11	02-27-2019	6.56
Plant Gadsden Ash Pond	GSD-AP-MW-12	12-06-2017	5.6
Plant Gadsden Ash Pond	GSD-AP-MW-12	02-08-2018	5.44
Plant Gadsden Ash Pond	GSD-AP-MW-12	04-24-2018	5.41
Plant Gadsden Ash Pond	GSD-AP-MW-12	06-27-2018	5.45

Gadsden Ash Pond - Field pH Measurements

Plant Gadsden Ash Pond	GSD-AP-MW-12	08-08-2018	5.46
Plant Gadsden Ash Pond	GSD-AP-MW-12	10-23-2018	5.47
Plant Gadsden Ash Pond	GSD-AP-MW-12	12-05-2018	5.45
Plant Gadsden Ash Pond	GSD-AP-MW-12	02-06-2019	5.31
Plant Gadsden Ash Pond	GSD-AP-MW-12	02-27-2019	5.4
Plant Gadsden Ash Pond	GSD-AP-PZ-1	06-27-2018	6.79
Plant Gadsden Ash Pond	GSD-AP-PZ-1	07-18-2018	6.8
Plant Gadsden Ash Pond	GSD-AP-PZ-1	08-07-2018	6.73
Plant Gadsden Ash Pond	GSD-AP-PZ-1	09-05-2018	6.75
Plant Gadsden Ash Pond	GSD-AP-PZ-1	09-24-2018	6.83
Plant Gadsden Ash Pond	GSD-AP-PZ-1	10-22-2018	6.76
Plant Gadsden Ash Pond	GSD-AP-PZ-1	12-03-2018	6.6
Plant Gadsden Ash Pond	GSD-AP-PZ-1	02-05-2019	6.66
Plant Gadsden Ash Pond	GSD-AP-PZ-1	02-25-2019	6.6

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1128
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
42 Inverness Center Parkway
Birmingham, AL 35242
Attention : Dustin Brooks & Greg Dyer
Released By : Sarah Copeland
sgcopela@southernco.com
(205) 664-6121

The following data has been reviewed and approved by:

Quality Control: Sarah
Copeland

Digitally signed by Sarah Copeland
DN: cn=Sarah Copeland, o, ou,
email=sgcopela@southernco.com,
c=US
Date: 2018.03.08 10:54:43 -06'00'

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.03.09 09:30:55 -06'00'

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Case Narrative



Anions

Gadsden Ash Pond

WMWGADAP_1128

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All samples were outsourced to Test America, Pensacola for analysis. Listed below is the job narrative provided by Test America.

Job Narrative 400-147182-1 General Chemistry

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AX27809 MW-11 (400-147182-2), AX27810 MW-12 (400-147182-3), AX27817 MW-1 (400-147182-10), AX27818 MW-2 (400-147182-11), AX27819 MW-3 (400-147182-12) and AX27823 MW-2 DUP (400-147182-16). Elevated reporting limits (RLs) are provided.



Metals ICP

Gadsden Ash Pond

WMWGADAP_1128

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AX27808	20171218BK	WMWGADAP_1128
AX27809	20171218BK	WMWGADAP_1128
AX27810	20171218BK	WMWGADAP_1128
AX27811	20171218BK	WMWGADAP_1128
AX27812	20171218BK	WMWGADAP_1128
AX27813	20171218BK	WMWGADAP_1128
AX27814	20171218BK	WMWGADAP_1128
AX27815	20171218BK	WMWGADAP_1128
AX27816	20171218BK	WMWGADAP_1128
AX27817	20171218BK & 20171219AK	WMWGADAP_1128
AX27818	20171218BK & 20171219AK	WMWGADAP_1128
AX27819	20171218BK & 20171219AK	WMWGADAP_1128
AX27820	20171218BK	WMWGADAP_1128
AX27821	20171218BK	WMWGADAP_1128
AX27822	20171218BK	WMWGADAP_1128
AX27823	20171218BK & 20171219AK	WMWGADAP_1128
AX27824	20171218BK	WMWGADAP_1128
AX27825	20171218BK	WMWGADAP_1128

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.



- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met, with the following exception:

<u>Analyte</u>	<u>Sample ID</u>
Calcium	AX27817

The concentrations of the matrix spike/matrix spike duplicate added before digestion is less than 30 percent of the sample concentration, causing inaccurate spike recovery information. The laboratory control sample indicates that the digestion and analysis were in control.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for any potential matrix effects. The following samples were diluted due to analyzed sample concentration over the high standard of the calibration curve.

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Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Case Narrative



<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AX27817	Calcium	x10.15
AX27817MS	Calcium	x10.15
AX27817MSD	Calcium	x10.15
AX27818	Calcium	x10.15
AX27819	Calcium	x10.15
AX27823	Calcium	x10.15

8. The raw data results include results corrected for dilution.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1128

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AX27808	608092	WMWGADAP_1128
AX27809	608092	WMWGADAP_1128
AX27810	608092	WMWGADAP_1128
AX27811	608092	WMWGADAP_1128
AX27812	608092	WMWGADAP_1128
AX27813	608092	WMWGADAP_1128
AX27814	608092	WMWGADAP_1128
AX27815	608092	WMWGADAP_1128
AX27816	608092	WMWGADAP_1128
AX27817	608092	WMWGADAP_1128
AX27818	608093	WMWGADAP_1128
AX27819	608093	WMWGADAP_1128
AX27820	608093	WMWGADAP_1128
AX27821	608093	WMWGADAP_1128
AX27822	608093	WMWGADAP_1128
AX27823	608093	WMWGADAP_1128
AX27824	608093	WMWGADAP_1128
AX27825	608093	WMWGADAP_1128

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.



- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a dilution of 1 to 5 to compensate for any matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1128

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AX27808	608483	WMWGADAP_1128
AX27809	608483	WMWGADAP_1128
AX27810	608483	WMWGADAP_1128
AX27811	608483	WMWGADAP_1128
AX27812	608483	WMWGADAP_1128
AX27813	608483	WMWGADAP_1128
AX27814	608483	WMWGADAP_1128
AX27815	608483	WMWGADAP_1128
AX27816	608483	WMWGADAP_1128
AX27817	608483	WMWGADAP_1128
AX27818	608484	WMWGADAP_1128
AX27819	608484	WMWGADAP_1128
AX27820	608484	WMWGADAP_1128
AX27821	608484	WMWGADAP_1128
AX27822	608484	WMWGADAP_1128
AX27823	608484	WMWGADAP_1128
AX27824	608484	WMWGADAP_1128
AX27825	608484	WMWGADAP_1128

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.



- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1128

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AX27808	608713	WMWGADAP_1128
AX27809	608713	WMWGADAP_1128
AX27810	608713	WMWGADAP_1128
AX27811	608713	WMWGADAP_1128
AX27812	608713	WMWGADAP_1128
AX27813	608713	WMWGADAP_1128
AX27814	608713	WMWGADAP_1128
AX27815	608713	WMWGADAP_1128
AX27816	608991	WMWGADAP_1128
AX27817	608991	WMWGADAP_1128
AX27818	608991	WMWGADAP_1128
AX27819	608991	WMWGADAP_1128
AX27820	608991	WMWGADAP_1128
AX27821	608991	WMWGADAP_1128
AX27822	608991	WMWGADAP_1128
AX27823	608991	WMWGADAP_1128
AX27824	608991	WMWGADAP_1128
AX27825	608991	WMWGADAP_1128

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

Alabama Power General Test Laboratory
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Calera, AL 35040
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FAX (205) 257-1654

Case Narrative

 Alabama Power



General Quality Control Procedures:

- A blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- All samples were between 2.5mg and 200mg residue, with the exception of AX27811, AX27812, AX27824 and AX27825 which were below the 2.5mg residue requirement.

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AX27808

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	J 0.00247	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.308	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.135	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	42.0	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/20/2017	SM 2540C		1		25	215	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	6.9	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	J 0.090	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	11	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AX27808

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit				Limit	Rec	Limit	Prec		
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AX27808

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Prec	
AX27815	Solids, Dissolved	mg/L	-3.00	25			138	54.0	40 to 60	0.730	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AX27809

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	J 0.00279	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.349	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.120	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	70.0	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/20/2017	SM 2540C		1		25	312	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	6.3	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	J 0.060	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		5	7.00	25	83	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AX27809

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115		86.5	70 to 130		6.40	20
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115		90.3	70 to 130		6.14	20
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046		93.2	70 to 130		0.241	20
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115		86.1	70 to 130		5.49	20
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75		140	70 to 130		0.722	20
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115		93.7	70 to 130		4.68	20
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115		85.9	70 to 130		6.44	20
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115		89.0	70 to 130		5.22	20
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115		87.1	70 to 130		5.95	20
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23		109	70 to 130		2.16	20
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115		105	70 to 130		4.70	20
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115		86.7	70 to 130		4.96	20
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115		95.9	70 to 130		6.26	20
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15		104	70 to 130		1.41	20
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115		83.9	70 to 130		5.49	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AX27809

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AX27815	Solids, Dissolved	mg/L	-3.00	25			138	54.0	40 to 60			0.730	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AX27810

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0501	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	J 0.0605	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	49.0	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	J 0.000596	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	J 0.00221	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/20/2017	SM 2540C		1		25	371	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	6.2	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		10	14.0	50	200	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AX27810

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20	
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20	
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20	
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20	
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20	
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20	
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20	
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20	
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20	
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20	
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20	
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20	
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20	
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20	
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AX27810

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AX27815	Solids, Dissolved	mg/L	-3.00	25			138	54.0	40 to 60		0.730	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AX27811

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/20/2017	SM 2540C		1		25	U Not Detected	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	U <0.60	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

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Issued By: State of Florida, Department of Health

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AX27811

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20	
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20	
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20	
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20	
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20	
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20	
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20	
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20	
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20	
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20	
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20	
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20	
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20	
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20	
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AX27811

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AX27815	Solids, Dissolved	mg/L	-3.00	25			138	54.0	40 to 60		0.730	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AX27812

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/20/2017	SM 2540C		1		25	U Not Detected	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	U <0.60	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AX27812

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Limit	
			MB	Limit					Rec	Limit			
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2018

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AX27812

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AX27815	Solids, Dissolved	mg/L	-3.00	25			138	54.0	40 to 60		0.730	5

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 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AX27813

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.279	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.566	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	48.2	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	J 0.00331	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/20/2017	SM 2540C		1		25	215	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	8.7	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	J 0.060	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	19	mg/L

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AX27813

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit
			MB	Limit						Rec	Limit		
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AX27813

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AX27815	Solids, Dissolved	mg/L	-3.00	25			138	54.0	40 to 60		0.730	5

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-5 Dup

Laboratory ID Number: AX27814

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.282	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.559	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	48.8	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	J 0.00342	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/20/2017	SM 2540C		1		25	219	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	8.4	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	J 0.060	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	20	mg/L

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-5 Dup

Laboratory ID Number: AX27814

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-5 Dup

Laboratory ID Number: AX27814

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AX27815	Solids, Dissolved	mg/L	-3.00	25			138	54.0	40 to 60		0.730	5

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AX27815

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0809	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	J 0.0630	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	29.8	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	J 0.00592	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/20/2017	SM 2540C		1		25	136	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	10	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	J 0.060	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	10	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AX27815

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AX27815

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AX27815	Solids, Dissolved	mg/L	-3.00	25			138	54.0	40 to 60		0.730	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AX27816

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0830	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.102	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	23.4	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		25	137	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	7.9	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	J 0.090	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	14	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AX27816

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20	
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20	
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20	
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20	
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20	
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20	
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20	
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20	
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20	
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20	
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20	
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20	
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20	
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20	
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AX27816

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Prec	Prec	Limit
								Duplicate	LCS			Rec	Limit	Prec	Limit
AX27820	Solids, Dissolved	mg/L	1.00		25			181	51.0		40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AX27817

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	J 0.00179	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0807	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	1.28	mg/L
* Calcium, Total	HRG	12/19/2018	EPA 200.7		10.15	1	5	271	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	J 0.00818	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		100	1300	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	6.2	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	0.10	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		20	28.0	100	650	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010
 Recovery for Calcium is out of range. The spike amount used was less than 30% of the sample amount. SGC 1/23/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AX27817

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit
				Limit	Spike					Rec	Limit		
AX27817	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.167	0.178	0.0990	0.085 to 0.115	86.5	70 to 130	6.40	20
AX27817	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.105	0.110	0.102	0.085 to 0.115	105	70 to 130	4.70	20
AX27817	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0867	0.0911	0.0954	0.085 to 0.115	86.7	70 to 130	4.96	20
AX27817	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0955	0.100	0.105	0.085 to 0.115	93.7	70 to 130	4.68	20
AX27817	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0859	0.0916	0.0983	0.085 to 0.115	85.9	70 to 130	6.44	20
AX27817	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0890	0.0938	0.0912	0.085 to 0.115	89.0	70 to 130	5.22	20
AX27817	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.0959	0.102	0.101	0.085 to 0.115	95.9	70 to 130	6.26	20
AX27817	Boron, Total	mg/L	0.0125	0.044	1.00	2.33	2.29	0.975	0.85 to 1.15	104	70 to 130	1.41	20
AX27817	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0839	0.0887	0.0896	0.085 to 0.115	83.9	70 to 130	5.49	20
AX27817	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0871	0.0925	0.0979	0.085 to 0.115	87.1	70 to 130	5.95	20
AX27817	Lithium, Total	mg/L	-0.000197	0.022	0.20	0.219	0.214	0.187	0.17 to 0.23	109	70 to 130	2.16	20
AX27817	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0861	0.0910	0.0966	0.085 to 0.115	86.1	70 to 130	5.49	20
AX27817	Calcium, Total	mg/L	-0.0164	0.22	5	278	276	4.89	4.25 to 5.75	140	70 to 130	0.722	20
AX27817	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.0985	0.105	0.102	0.085 to 0.115	90.3	70 to 130	6.14	20
AX27817	Mercury, Total by CVAA	mg/L	-0.00000121	0.0005	0.004	0.00373	0.00374	0.00384	0.0034 to 0.0046	93.2	70 to 130	0.241	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010
 Recovery for Calcium is out of range. The spike amount used was less than 30% of the sample amount. SGC 1/23/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AX27817

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	
AX27820	Solids, Dissolved	mg/L	1.00	25			181	51.0	40 to 60		0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010
 Recovery for Calcium is out of range. The spike amount used was less than 30% of the sample amount. SGC 1/23/18

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AX27818

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	0.809	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0842	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.758	mg/L
* Calcium, Total	HRG	12/19/2018	EPA 200.7		10.15	1	5	128	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0246	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	0.0920	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0254	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		50	574	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	4.1	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	0.30	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		10	14.0	50	210	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AX27818

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			Limit	MB					Limit	Rec	Limit	Prec		
AX27825	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0913	0.0918	0.0979	0.085 to 0.115		91.3	70 to 130	0.558	20
AX27825	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0912	0.0915	0.0966	0.085 to 0.115		91.2	70 to 130	0.247	20
AX27825	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0880	0.0880	0.0896	0.085 to 0.115		88.0	70 to 130	0.0673	20
AX27825	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0953	0.0947	0.105	0.085 to 0.115		95.3	70 to 130	0.681	20
AX27825	Calcium, Total	mg/L	-0.0206	0.22	5.00	4.91	4.63	4.96	4.25 to 5.75		98.2	70 to 130	5.90	20
AX27825	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.106	0.108	0.102	0.085 to 0.115		106	70 to 130	1.17	20
AX27825	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.100	0.100	0.102	0.085 to 0.115		100	70 to 130	0.135	20
AX27825	Lithium, Total	mg/L	-0.000126	0.022	0.20	0.186	0.176	0.188	0.17 to 0.23		92.8	70 to 130	5.30	20
AX27825	Boron, Total	mg/L	0.00323	0.044	1.00	0.964	0.974	0.974	0.85 to 1.15		96.4	70 to 130	1.06	20
AX27825	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0946	0.0936	0.0912	0.085 to 0.115		94.6	70 to 130	1.12	20
AX27825	Mercury, Total by CVAA	mg/L	-0.000000876	0.0005	0.004	0.00388	0.00387	0.00382	0.0034 to 0.0046		97.1	70 to 130	0.379	20
AX27825	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.0990	0.0986	0.0990	0.085 to 0.115		99.0	70 to 130	0.385	20
AX27825	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.104	0.104	0.101	0.085 to 0.115		104	70 to 130	0.0102	20
AX27825	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0924	0.0950	0.0983	0.085 to 0.115		92.4	70 to 130	2.75	20
AX27825	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0892	0.0896	0.0954	0.085 to 0.115		89.2	70 to 130	0.454	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AX27818

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample Duplicate	LCS	LCS	Limit	Rec	Rec	Prec	Prec	Limit
AX27820	Solids, Dissolved	mg/L	1.00	25				181	51.0	40 to 60				0.549	5	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AX27819

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	J 0.00101	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.126	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.959	mg/L
* Calcium, Total	HRG	12/19/2018	EPA 200.7		10.15	1	5	125	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0302	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		50	628	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	7.6	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	0.13	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		10	14.0	50	250	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AX27819

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			Limit	MB					Limit	Rec	Limit	Prec			
AX27825	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0880	0.0880	0.0896	0.085 to 0.115		88.0	70 to 130		0.0673	20
AX27825	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0913	0.0918	0.0979	0.085 to 0.115		91.3	70 to 130		0.558	20
AX27825	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0912	0.0915	0.0966	0.085 to 0.115		91.2	70 to 130		0.247	20
AX27825	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0953	0.0947	0.105	0.085 to 0.115		95.3	70 to 130		0.681	20
AX27825	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.100	0.100	0.102	0.085 to 0.115		100	70 to 130		0.135	20
AX27825	Lithium, Total	mg/L	-0.000126	0.022	0.20	0.186	0.176	0.188	0.17 to 0.23		92.8	70 to 130		5.30	20
AX27825	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.0990	0.0986	0.0990	0.085 to 0.115		99.0	70 to 130		0.385	20
AX27825	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.104	0.104	0.101	0.085 to 0.115		104	70 to 130		0.0102	20
AX27825	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0924	0.0950	0.0983	0.085 to 0.115		92.4	70 to 130		2.75	20
AX27825	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0892	0.0896	0.0954	0.085 to 0.115		89.2	70 to 130		0.454	20
AX27825	Boron, Total	mg/L	0.00323	0.044	1.00	0.964	0.974	0.974	0.85 to 1.15		96.4	70 to 130		1.06	20
AX27825	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0946	0.0936	0.0912	0.085 to 0.115		94.6	70 to 130		1.12	20
AX27825	Mercury, Total by CVAA	mg/L	-0.000000876	0.0005	0.004	0.00388	0.00387	0.00382	0.0034 to 0.0046		97.1	70 to 130		0.379	20
AX27825	Calcium, Total	mg/L	-0.0206	0.22	5.00	4.91	4.63	4.96	4.25 to 5.75		98.2	70 to 130		5.90	20
AX27825	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.106	0.108	0.102	0.085 to 0.115		106	70 to 130		1.17	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AX27819

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Prec	Prec	Limit
								Duplicate	LCS			Rec	Limit	Prec	Limit
AX27820	Solids, Dissolved	mg/L	1.00		25			181	51.0		40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AX27820

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	J 0.00112	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.187	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	J 0.0614	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	38.7	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		25	183	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	7.0	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	0.12	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	9.0	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AX27820

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit
			MB	Limit						Rec	Limit	
AX27825	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0953	0.0947	0.105	0.085 to 0.115	95.3	70 to 130	0.681 20
AX27825	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0912	0.0915	0.0966	0.085 to 0.115	91.2	70 to 130	0.247 20
AX27825	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0913	0.0918	0.0979	0.085 to 0.115	91.3	70 to 130	0.558 20
AX27825	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0880	0.0880	0.0896	0.085 to 0.115	88.0	70 to 130	0.0673 20
AX27825	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.100	0.100	0.102	0.085 to 0.115	100	70 to 130	0.135 20
AX27825	Lithium, Total	mg/L	-0.000126	0.022	0.20	0.186	0.176	0.188	0.17 to 0.23	92.8	70 to 130	5.30 20
AX27825	Boron, Total	mg/L	0.00323	0.044	1.00	0.964	0.974	0.974	0.85 to 1.15	96.4	70 to 130	1.06 20
AX27825	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0946	0.0936	0.0912	0.085 to 0.115	94.6	70 to 130	1.12 20
AX27825	Mercury, Total by CVAA	mg/L	-0.000000876	0.0005	0.004	0.00388	0.00387	0.00382	0.0034 to 0.0046	97.1	70 to 130	0.379 20
AX27825	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.0990	0.0986	0.0990	0.085 to 0.115	99.0	70 to 130	0.385 20
AX27825	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.104	0.104	0.101	0.085 to 0.115	104	70 to 130	0.0102 20
AX27825	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0924	0.0950	0.0983	0.085 to 0.115	92.4	70 to 130	2.75 20
AX27825	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0892	0.0896	0.0954	0.085 to 0.115	89.2	70 to 130	0.454 20
AX27825	Calcium, Total	mg/L	-0.0206	0.22	5.00	4.91	4.63	4.96	4.25 to 5.75	98.2	70 to 130	5.90 20
AX27825	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.106	0.108	0.102	0.085 to 0.115	106	70 to 130	1.17 20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AX27820

Sample	Analysis	Units	MB	MB Limit	Spike	LFM	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AX27820	Solids, Dissolved	mg/L	1.00	25			181	51.0	40 to 60			0.549	5

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AX27821

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	J 0.00313	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.244	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	J 0.0828	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	66.1	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	J 0.00212	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		25	253	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	5.2	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	0.14	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	6.5	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AX27821

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AX27825	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0913	0.0918	0.0979	0.085 to 0.115	91.3	70 to 130	0.558	20
AX27825	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0912	0.0915	0.0966	0.085 to 0.115	91.2	70 to 130	0.247	20
AX27825	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0953	0.0947	0.105	0.085 to 0.115	95.3	70 to 130	0.681	20
AX27825	Calcium, Total	mg/L	-0.0206	0.22	5.00	4.91	4.63	4.96	4.25 to 5.75	98.2	70 to 130	5.90	20
AX27825	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.106	0.108	0.102	0.085 to 0.115	106	70 to 130	1.17	20
AX27825	Boron, Total	mg/L	0.00323	0.044	1.00	0.964	0.974	0.974	0.85 to 1.15	96.4	70 to 130	1.06	20
AX27825	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0946	0.0936	0.0912	0.085 to 0.115	94.6	70 to 130	1.12	20
AX27825	Mercury, Total by CVAA	mg/L	-0.000000876	0.0005	0.004	0.00388	0.00387	0.00382	0.0034 to 0.0046	97.1	70 to 130	0.379	20
AX27825	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.100	0.100	0.102	0.085 to 0.115	100	70 to 130	0.135	20
AX27825	Lithium, Total	mg/L	-0.000126	0.022	0.20	0.186	0.176	0.188	0.17 to 0.23	92.8	70 to 130	5.30	20
AX27825	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0880	0.0880	0.0896	0.085 to 0.115	88.0	70 to 130	0.0673	20
AX27825	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.0990	0.0986	0.0990	0.085 to 0.115	99.0	70 to 130	0.385	20
AX27825	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.104	0.104	0.101	0.085 to 0.115	104	70 to 130	0.0102	20
AX27825	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0924	0.0950	0.0983	0.085 to 0.115	92.4	70 to 130	2.75	20
AX27825	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0892	0.0896	0.0954	0.085 to 0.115	89.2	70 to 130	0.454	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AX27821

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AX27820	Solids, Dissolved	mg/L	1.00	25			181	51.0	40 to 60		0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AX27822

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	0.0132	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.239	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.515	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	30.1	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0252	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		25	189	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	8.5	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	0.25	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AX27822

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AX27825	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0913	0.0918	0.0979	0.085 to 0.115	91.3	70 to 130	0.558	20
AX27825	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0912	0.0915	0.0966	0.085 to 0.115	91.2	70 to 130	0.247	20
AX27825	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0953	0.0947	0.105	0.085 to 0.115	95.3	70 to 130	0.681	20
AX27825	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0880	0.0880	0.0896	0.085 to 0.115	88.0	70 to 130	0.0673	20
AX27825	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.100	0.100	0.102	0.085 to 0.115	100	70 to 130	0.135	20
AX27825	Lithium, Total	mg/L	-0.000126	0.022	0.20	0.186	0.176	0.188	0.17 to 0.23	92.8	70 to 130	5.30	20
AX27825	Boron, Total	mg/L	0.00323	0.044	1.00	0.964	0.974	0.974	0.85 to 1.15	96.4	70 to 130	1.06	20
AX27825	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0946	0.0936	0.0912	0.085 to 0.115	94.6	70 to 130	1.12	20
AX27825	Mercury, Total by CVAA	mg/L	-0.000000876	0.0005	0.004	0.00388	0.00387	0.00382	0.0034 to 0.0046	97.1	70 to 130	0.379	20
AX27825	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.0990	0.0986	0.0990	0.085 to 0.115	99.0	70 to 130	0.385	20
AX27825	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.104	0.104	0.101	0.085 to 0.115	104	70 to 130	0.0102	20
AX27825	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0924	0.0950	0.0983	0.085 to 0.115	92.4	70 to 130	2.75	20
AX27825	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0892	0.0896	0.0954	0.085 to 0.115	89.2	70 to 130	0.454	20
AX27825	Calcium, Total	mg/L	-0.0206	0.22	5.00	4.91	4.63	4.96	4.25 to 5.75	98.2	70 to 130	5.90	20
AX27825	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.106	0.108	0.102	0.085 to 0.115	106	70 to 130	1.17	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AX27822

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Prec	Prec	Limit
								Duplicate	LCS			Rec	Limit	Prec	Limit
AX27820	Solids, Dissolved	mg/L	1.00		25			181	51.0		40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-2 Dup

Laboratory ID Number: AX27823

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	0.875	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0927	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	0.749	mg/L
* Calcium, Total	HRG	12/19/2018	EPA 200.7		10.15	1	5	130	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0267	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	0.0901	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	0.0274	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		50	548	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	4.1	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	0.28	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		10	14.0	50	210	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-2 Dup

Laboratory ID Number: AX27823

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			Limit	MB					Limit	Rec	Limit	Prec		
AX27825	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0913	0.0918	0.0979	0.085 to 0.115		91.3	70 to 130	0.558	20
AX27825	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0912	0.0915	0.0966	0.085 to 0.115		91.2	70 to 130	0.247	20
AX27825	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0880	0.0880	0.0896	0.085 to 0.115		88.0	70 to 130	0.0673	20
AX27825	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0953	0.0947	0.105	0.085 to 0.115		95.3	70 to 130	0.681	20
AX27825	Boron, Total	mg/L	0.00323	0.044	1.00	0.964	0.974	0.974	0.85 to 1.15		96.4	70 to 130	1.06	20
AX27825	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0946	0.0936	0.0912	0.085 to 0.115		94.6	70 to 130	1.12	20
AX27825	Mercury, Total by CVAA	mg/L	-0.000000876	0.0005	0.004	0.00388	0.00387	0.00382	0.0034 to 0.0046		97.1	70 to 130	0.379	20
AX27825	Calcium, Total	mg/L	-0.0206	0.22	5.00	4.91	4.63	4.96	4.25 to 5.75		98.2	70 to 130	5.90	20
AX27825	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.106	0.108	0.102	0.085 to 0.115		106	70 to 130	1.17	20
AX27825	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.100	0.100	0.102	0.085 to 0.115		100	70 to 130	0.135	20
AX27825	Lithium, Total	mg/L	-0.000126	0.022	0.20	0.186	0.176	0.188	0.17 to 0.23		92.8	70 to 130	5.30	20
AX27825	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.0990	0.0986	0.0990	0.085 to 0.115		99.0	70 to 130	0.385	20
AX27825	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.104	0.104	0.101	0.085 to 0.115		104	70 to 130	0.0102	20
AX27825	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0924	0.0950	0.0983	0.085 to 0.115		92.4	70 to 130	2.75	20
AX27825	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0892	0.0896	0.0954	0.085 to 0.115		89.2	70 to 130	0.454	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond - MW-2 Dup

Laboratory ID Number: AX27823

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AX27820	Solids, Dissolved	mg/L	1.00	25			181	51.0	40 to 60			0.549	5

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Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AX27824

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		25	U Not Detected	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	U <0.60	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AX27824

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			Limit	MB					Limit	Rec	Limit	Prec		
AX27825	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0912	0.0915	0.0966	0.085 to 0.115		91.2	70 to 130	0.247	20
AX27825	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0880	0.0880	0.0896	0.085 to 0.115		88.0	70 to 130	0.0673	20
AX27825	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0953	0.0947	0.105	0.085 to 0.115		95.3	70 to 130	0.681	20
AX27825	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0913	0.0918	0.0979	0.085 to 0.115		91.3	70 to 130	0.558	20
AX27825	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.100	0.100	0.102	0.085 to 0.115		100	70 to 130	0.135	20
AX27825	Lithium, Total	mg/L	-0.000126	0.022	0.20	0.186	0.176	0.188	0.17 to 0.23		92.8	70 to 130	5.30	20
AX27825	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.0990	0.0986	0.0990	0.085 to 0.115		99.0	70 to 130	0.385	20
AX27825	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.104	0.104	0.101	0.085 to 0.115		104	70 to 130	0.0102	20
AX27825	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0924	0.0950	0.0983	0.085 to 0.115		92.4	70 to 130	2.75	20
AX27825	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0892	0.0896	0.0954	0.085 to 0.115		89.2	70 to 130	0.454	20
AX27825	Boron, Total	mg/L	0.00323	0.044	1.00	0.964	0.974	0.974	0.85 to 1.15		96.4	70 to 130	1.06	20
AX27825	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0946	0.0936	0.0912	0.085 to 0.115		94.6	70 to 130	1.12	20
AX27825	Mercury, Total by CVAA	mg/L	-0.000000876	0.0005	0.004	0.00388	0.00387	0.00382	0.0034 to 0.0046		97.1	70 to 130	0.379	20
AX27825	Calcium, Total	mg/L	-0.0206	0.22	5.00	4.91	4.63	4.96	4.25 to 5.75		98.2	70 to 130	5.90	20
AX27825	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.106	0.108	0.102	0.085 to 0.115		106	70 to 130	1.17	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 06-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AX27824

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec	Limit
								Duplicate	LCS			Limit	Limit			
AX27820	Solids, Dissolved	mg/L	1.00		25			181	51.0		40 to 60			0.549		5

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Expiration: June 30, 2018

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AX27825

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	12/18/2017	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/18/2017	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	12/18/2017	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	JHK	12/12/2017	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	JHK	12/12/2017	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/22/2017	SM 2540C		1		25	U Not Detected	mg/L
* Chloride, Total, by Test America	SGC	1/2/2018	SM 4500 Cl_E		1	0.60	2.00	U <0.60	mg/L
* Fluoride, Total, by Test America	SGC	1/2/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	1/2/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AX27825

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AX27825	Antimony, Total	mg/L	0.0000662	0.00132	0.10	0.0912	0.0915	0.0966	0.085 to 0.115	91.2	70 to 130	0.247	20
AX27825	Selenium, Total	mg/L	0.0000273	0.0044	0.10	0.0880	0.0880	0.0896	0.085 to 0.115	88.0	70 to 130	0.0673	20
AX27825	Arsenic, Total	mg/L	0.0000105	0.0022	0.10	0.0953	0.0947	0.105	0.085 to 0.115	95.3	70 to 130	0.681	20
AX27825	Lead, Total	mg/L	0.0000110	0.0022	0.10	0.0913	0.0918	0.0979	0.085 to 0.115	91.3	70 to 130	0.558	20
AX27825	Cobalt, Total	mg/L	0.00000486	0.0044	0.10	0.100	0.100	0.102	0.085 to 0.115	100	70 to 130	0.135	20
AX27825	Lithium, Total	mg/L	-0.000126	0.022	0.20	0.186	0.176	0.188	0.17 to 0.23	92.8	70 to 130	5.30	20
AX27825	Calcium, Total	mg/L	-0.0206	0.22	5.00	4.91	4.63	4.96	4.25 to 5.75	98.2	70 to 130	5.90	20
AX27825	Molybdenum, Total	mg/L	0.0000327	0.0044	0.10	0.106	0.108	0.102	0.085 to 0.115	106	70 to 130	1.17	20
AX27825	Barium, Total	mg/L	-0.00000946	0.0044	0.10	0.0990	0.0986	0.0990	0.085 to 0.115	99.0	70 to 130	0.385	20
AX27825	Beryllium, Total	mg/L	0.0000205	0.00132	0.10	0.104	0.104	0.101	0.085 to 0.115	104	70 to 130	0.0102	20
AX27825	Cadmium, Total	mg/L	0.00000248	0.00066	0.10	0.0924	0.0950	0.0983	0.085 to 0.115	92.4	70 to 130	2.75	20
AX27825	Thallium, Total	mg/L	0.0000161	0.00044	0.10	0.0892	0.0896	0.0954	0.085 to 0.115	89.2	70 to 130	0.454	20
AX27825	Boron, Total	mg/L	0.00323	0.044	1.00	0.964	0.974	0.974	0.85 to 1.15	96.4	70 to 130	1.06	20
AX27825	Chromium, Total	mg/L	0.0000800	0.0044	0.10	0.0946	0.0936	0.0912	0.085 to 0.115	94.6	70 to 130	1.12	20
AX27825	Mercury, Total by CVAA	mg/L	-0.000000876	0.0005	0.004	0.00388	0.00387	0.00382	0.0034 to 0.0046	97.1	70 to 130	0.379	20

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 07-Dec-17
 Customer ID:
 Delivery Date: 11-Dec-17

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AX27825

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AX27820	Solids, Dissolved	mg/L	1.00	25			181	51.0	40 to 60		0.549	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information

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: 400-147182-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond (1)

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

12/18/2017 4:44:43 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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results through

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

Job ID: 400-147182-1

Laboratory: TestAmerica Pensacola

Narrative

**Job Narrative
400-147182-1**

General Chemistry

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AX27809 MW-11 (400-147182-2), AX27810 MW-12 (400-147182-3), AX27817 MW-1 (400-147182-10), AX27818 MW-2 (400-147182-11), AX27819 MW-3 (400-147182-12) and AX27823 MW-2 DUP (400-147182-16). Elevated reporting limits (RLs) are provided.

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Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-147182-1	AX27808 MW-10	Water	12/06/17 12:30	12/12/17 09:18
400-147182-2	AX27809 MW-11	Water	12/06/17 14:30	12/12/17 09:18
400-147182-3	AX27810 MW-12	Water	12/06/17 15:51	12/12/17 09:18
400-147182-4	AX27811 FB-1	Water	12/06/17 16:25	12/12/17 09:18
400-147182-5	AX27812 EB-2	Water	12/07/17 08:45	12/12/17 09:18
400-147182-6	AX27813 MW-5	Water	12/07/17 11:32	12/12/17 09:18
400-147182-7	AX27814 MW-5 DUP	Water	12/07/17 11:32	12/12/17 09:18
400-147182-8	AX27815 MW-6	Water	12/07/17 14:03	12/12/17 09:18
400-147182-9	AX27816 MW-7	Water	12/07/17 15:27	12/12/17 09:18
400-147182-10	AX27817 MW-1	Water	12/06/17 11:24	12/12/17 09:18
400-147182-11	AX27818 MW-2	Water	12/06/17 13:03	12/12/17 09:18
400-147182-12	AX27819 MW-3	Water	12/06/17 14:06	12/12/17 09:18
400-147182-13	AX27820 MW-9	Water	12/07/17 11:51	12/12/17 09:18
400-147182-14	AX27821 MW-8	Water	12/07/17 12:57	12/12/17 09:18
400-147182-15	AX27822 MW-4	Water	12/07/17 14:33	12/12/17 09:18
400-147182-16	AX27823 MW-2 DUP	Water	12/06/17 13:03	12/12/17 09:18
400-147182-17	AX27824 EB-1	Water	12/06/17 14:42	12/12/17 09:18
400-147182-18	AX27825 FB-2	Water	12/07/17 12:24	12/12/17 09:18

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27808 MW-10

Lab Sample ID: 400-147182-1

Date Collected: 12/06/17 12:30

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.9		2.0	0.60	mg/L			12/17/17 08:25	1
Fluoride	0.090	J	0.10	0.032	mg/L			12/15/17 10:19	1
Sulfate	11		5.0	1.4	mg/L			12/18/17 07:20	1

Client Sample ID: AX27809 MW-11

Lab Sample ID: 400-147182-2

Date Collected: 12/06/17 14:30

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.3		2.0	0.60	mg/L			12/17/17 08:25	1
Fluoride	0.060	J	0.10	0.032	mg/L			12/15/17 10:23	1
Sulfate	83		25	7.0	mg/L			12/18/17 07:42	5

Client Sample ID: AX27810 MW-12

Lab Sample ID: 400-147182-3

Date Collected: 12/06/17 15:51

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.2		2.0	0.60	mg/L			12/17/17 08:25	1
Fluoride	<0.032		0.10	0.032	mg/L			12/15/17 10:25	1
Sulfate	200		50	14	mg/L			12/18/17 07:42	10

Client Sample ID: AX27811 FB-1

Lab Sample ID: 400-147182-4

Date Collected: 12/06/17 16:25

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			12/17/17 08:26	1
Fluoride	<0.032		0.10	0.032	mg/L			12/15/17 10:28	1
Sulfate	<1.4		5.0	1.4	mg/L			12/18/17 07:20	1

Client Sample ID: AX27812 EB-2

Lab Sample ID: 400-147182-5

Date Collected: 12/07/17 08:45

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			12/17/17 08:47	1
Fluoride	<0.032		0.10	0.032	mg/L			12/15/17 10:38	1
Sulfate	<1.4		5.0	1.4	mg/L			12/18/17 07:36	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27813 MW-5

Lab Sample ID: 400-147182-6

Date Collected: 12/07/17 11:32

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.7		2.0	0.60	mg/L			12/17/17 08:47	1
Fluoride	0.060	J	0.10	0.032	mg/L			12/15/17 10:45	1
Sulfate	19		5.0	1.4	mg/L			12/18/17 07:36	1

Client Sample ID: AX27814 MW-5 DUP

Lab Sample ID: 400-147182-7

Date Collected: 12/07/17 11:32

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.4		2.0	0.60	mg/L			12/17/17 08:47	1
Fluoride	0.060	J	0.10	0.032	mg/L			12/15/17 10:47	1
Sulfate	20		5.0	1.4	mg/L			12/18/17 07:36	1

Client Sample ID: AX27815 MW-6

Lab Sample ID: 400-147182-8

Date Collected: 12/07/17 14:03

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10		2.0	0.60	mg/L			12/17/17 08:26	1
Fluoride	0.060	J	0.10	0.032	mg/L			12/15/17 10:51	1
Sulfate	10		5.0	1.4	mg/L			12/18/17 07:36	1

Client Sample ID: AX27816 MW-7

Lab Sample ID: 400-147182-9

Date Collected: 12/07/17 15:27

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.9		2.0	0.60	mg/L			12/17/17 08:24	1
Fluoride	0.090	J	0.10	0.032	mg/L			12/15/17 10:02	1
Sulfate	14		5.0	1.4	mg/L			12/18/17 07:20	1

Client Sample ID: AX27817 MW-1

Lab Sample ID: 400-147182-10

Date Collected: 12/06/17 11:24

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.2		2.0	0.60	mg/L			12/17/17 08:47	1
Fluoride	0.10		0.10	0.032	mg/L			12/15/17 10:55	1
Sulfate	650		100	28	mg/L			12/18/17 07:42	20

Client Sample ID: AX27818 MW-2

Lab Sample ID: 400-147182-11

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		2.0	0.60	mg/L			12/17/17 08:47	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27818 MW-2

Lab Sample ID: 400-147182-11

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.30		0.10	0.032	mg/L			12/15/17 10:59	1
Sulfate	210		50	14	mg/L			12/18/17 07:42	10

Client Sample ID: AX27819 MW-3

Lab Sample ID: 400-147182-12

Date Collected: 12/06/17 14:06

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.6		2.0	0.60	mg/L			12/17/17 08:47	1
Fluoride	0.13		0.10	0.032	mg/L			12/15/17 11:02	1
Sulfate	250		50	14	mg/L			12/18/17 07:45	10

Client Sample ID: AX27820 MW-9

Lab Sample ID: 400-147182-13

Date Collected: 12/07/17 11:51

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.0		2.0	0.60	mg/L			12/17/17 08:48	1
Fluoride	0.12		0.10	0.032	mg/L			12/15/17 11:05	1
Sulfate	9.0		5.0	1.4	mg/L			12/18/17 07:36	1

Client Sample ID: AX27821 MW-8

Lab Sample ID: 400-147182-14

Date Collected: 12/07/17 12:57

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.2		2.0	0.60	mg/L			12/17/17 08:48	1
Fluoride	0.14		0.10	0.032	mg/L			12/18/17 10:57	1
Sulfate	6.5		5.0	1.4	mg/L			12/18/17 07:36	1

Client Sample ID: AX27822 MW-4

Lab Sample ID: 400-147182-15

Date Collected: 12/07/17 14:33

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.5		2.0	0.60	mg/L			12/17/17 09:29	1
Fluoride	0.25		0.10	0.032	mg/L			12/18/17 10:55	1
Sulfate	<1.4		5.0	1.4	mg/L			12/18/17 07:38	1

Client Sample ID: AX27823 MW-2 DUP

Lab Sample ID: 400-147182-16

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		2.0	0.60	mg/L			12/17/17 08:47	1
Fluoride	0.28		0.10	0.032	mg/L			12/18/17 10:49	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27823 MW-2 DUP

Lab Sample ID: 400-147182-16

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	210		50	14	mg/L			12/18/17 07:45	10

Client Sample ID: AX27824 EB-1

Lab Sample ID: 400-147182-17

Date Collected: 12/06/17 14:42

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			12/17/17 08:47	1
Fluoride	<0.032		0.10	0.032	mg/L			12/18/17 10:53	1
Sulfate	<1.4		5.0	1.4	mg/L			12/18/17 07:36	1

Client Sample ID: AX27825 FB-2

Lab Sample ID: 400-147182-18

Date Collected: 12/07/17 12:24

Matrix: Water

Date Received: 12/12/17 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			12/17/17 09:48	1
Fluoride	<0.032		0.10	0.032	mg/L			12/18/17 10:42	1
Sulfate	<1.4		5.0	1.4	mg/L			12/18/17 07:36	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27808 MW-10

Lab Sample ID: 400-147182-1

Date Collected: 12/06/17 12:30

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:19	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:20	RRC	TAL PEN

Client Sample ID: AX27809 MW-11

Lab Sample ID: 400-147182-2

Date Collected: 12/06/17 14:30

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:23	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	380095	12/18/17 07:42	RRC	TAL PEN

Client Sample ID: AX27810 MW-12

Lab Sample ID: 400-147182-3

Date Collected: 12/06/17 15:51

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:25	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:25	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	380095	12/18/17 07:42	RRC	TAL PEN

Client Sample ID: AX27811 FB-1

Lab Sample ID: 400-147182-4

Date Collected: 12/06/17 16:25

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:28	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:20	RRC	TAL PEN

Client Sample ID: AX27812 EB-2

Lab Sample ID: 400-147182-5

Date Collected: 12/07/17 08:45

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:38	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:36	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27813 MW-5

Lab Sample ID: 400-147182-6

Date Collected: 12/07/17 11:32

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:45	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:36	RRC	TAL PEN

Client Sample ID: AX27814 MW-5 DUP

Lab Sample ID: 400-147182-7

Date Collected: 12/07/17 11:32

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:47	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:36	RRC	TAL PEN

Client Sample ID: AX27815 MW-6

Lab Sample ID: 400-147182-8

Date Collected: 12/07/17 14:03

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:51	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:36	RRC	TAL PEN

Client Sample ID: AX27816 MW-7

Lab Sample ID: 400-147182-9

Date Collected: 12/07/17 15:27

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:24	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:02	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:20	RRC	TAL PEN

Client Sample ID: AX27817 MW-1

Lab Sample ID: 400-147182-10

Date Collected: 12/06/17 11:24

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	380095	12/18/17 07:42	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27818 MW-2

Lab Sample ID: 400-147182-11

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 10:59	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	380095	12/18/17 07:42	RRC	TAL PEN

Client Sample ID: AX27819 MW-3

Lab Sample ID: 400-147182-12

Date Collected: 12/06/17 14:06

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 11:02	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	380095	12/18/17 07:45	RRC	TAL PEN

Client Sample ID: AX27820 MW-9

Lab Sample ID: 400-147182-13

Date Collected: 12/07/17 11:51

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:48	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	379872	12/15/17 11:05	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:36	RRC	TAL PEN

Client Sample ID: AX27821 MW-8

Lab Sample ID: 400-147182-14

Date Collected: 12/07/17 12:57

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:48	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	380108	12/18/17 10:57	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:36	RRC	TAL PEN

Client Sample ID: AX27822 MW-4

Lab Sample ID: 400-147182-15

Date Collected: 12/07/17 14:33

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380094	12/17/17 09:29	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	380108	12/18/17 10:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:38	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27823 MW-2 DUP

Lab Sample ID: 400-147182-16

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	380108	12/18/17 10:49	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	380095	12/18/17 07:45	RRC	TAL PEN

Client Sample ID: AX27824 EB-1

Lab Sample ID: 400-147182-17

Date Collected: 12/06/17 14:42

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380092	12/17/17 08:47	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	380108	12/18/17 10:53	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:36	RRC	TAL PEN

Client Sample ID: AX27825 FB-2

Lab Sample ID: 400-147182-18

Date Collected: 12/07/17 12:24

Matrix: Water

Date Received: 12/12/17 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	380094	12/17/17 09:48	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	380108	12/18/17 10:42	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	380095	12/18/17 07:36	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

General Chemistry

Analysis Batch: 379872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-147182-1	AX27808 MW-10	Total/NA	Water	SM 4500 F C	
400-147182-2	AX27809 MW-11	Total/NA	Water	SM 4500 F C	
400-147182-3	AX27810 MW-12	Total/NA	Water	SM 4500 F C	
400-147182-4	AX27811 FB-1	Total/NA	Water	SM 4500 F C	
400-147182-5	AX27812 EB-2	Total/NA	Water	SM 4500 F C	
400-147182-6	AX27813 MW-5	Total/NA	Water	SM 4500 F C	
400-147182-7	AX27814 MW-5 DUP	Total/NA	Water	SM 4500 F C	
400-147182-8	AX27815 MW-6	Total/NA	Water	SM 4500 F C	
400-147182-9	AX27816 MW-7	Total/NA	Water	SM 4500 F C	
400-147182-10	AX27817 MW-1	Total/NA	Water	SM 4500 F C	
400-147182-11	AX27818 MW-2	Total/NA	Water	SM 4500 F C	
400-147182-12	AX27819 MW-3	Total/NA	Water	SM 4500 F C	
400-147182-13	AX27820 MW-9	Total/NA	Water	SM 4500 F C	
MB 400-379872/2	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-379872/3	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-147182-9 MS	AX27816 MW-7	Total/NA	Water	SM 4500 F C	
400-147182-9 MSD	AX27816 MW-7	Total/NA	Water	SM 4500 F C	
400-147182-5 DU	AX27812 EB-2	Total/NA	Water	SM 4500 F C	

Analysis Batch: 380092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-147182-1	AX27808 MW-10	Total/NA	Water	SM 4500 CI- E	
400-147182-2	AX27809 MW-11	Total/NA	Water	SM 4500 CI- E	
400-147182-3	AX27810 MW-12	Total/NA	Water	SM 4500 CI- E	
400-147182-4	AX27811 FB-1	Total/NA	Water	SM 4500 CI- E	
400-147182-5	AX27812 EB-2	Total/NA	Water	SM 4500 CI- E	
400-147182-6	AX27813 MW-5	Total/NA	Water	SM 4500 CI- E	
400-147182-7	AX27814 MW-5 DUP	Total/NA	Water	SM 4500 CI- E	
400-147182-8	AX27815 MW-6	Total/NA	Water	SM 4500 CI- E	
400-147182-9	AX27816 MW-7	Total/NA	Water	SM 4500 CI- E	
400-147182-10	AX27817 MW-1	Total/NA	Water	SM 4500 CI- E	
400-147182-11	AX27818 MW-2	Total/NA	Water	SM 4500 CI- E	
400-147182-12	AX27819 MW-3	Total/NA	Water	SM 4500 CI- E	
400-147182-13	AX27820 MW-9	Total/NA	Water	SM 4500 CI- E	
400-147182-14	AX27821 MW-8	Total/NA	Water	SM 4500 CI- E	
400-147182-16	AX27823 MW-2 DUP	Total/NA	Water	SM 4500 CI- E	
400-147182-17	AX27824 EB-1	Total/NA	Water	SM 4500 CI- E	
MB 400-380092/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-380092/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
MRL 400-380092/3	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
400-147182-9 MS	AX27816 MW-7	Total/NA	Water	SM 4500 CI- E	
400-147182-9 MSD	AX27816 MW-7	Total/NA	Water	SM 4500 CI- E	
400-147182-10 MS	AX27817 MW-1	Total/NA	Water	SM 4500 CI- E	
400-147182-10 MSD	AX27817 MW-1	Total/NA	Water	SM 4500 CI- E	

Analysis Batch: 380094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-147182-15	AX27822 MW-4	Total/NA	Water	SM 4500 CI- E	
400-147182-18	AX27825 FB-2	Total/NA	Water	SM 4500 CI- E	
MB 400-380094/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-380094/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
SDG: Gadsden Ash Pond (1)

General Chemistry (Continued)

Analysis Batch: 380094 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 400-380094/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-147182-15 MS	AX27822 MW-4	Total/NA	Water	SM 4500 Cl- E	
400-147182-15 MSD	AX27822 MW-4	Total/NA	Water	SM 4500 Cl- E	
400-147182-18 MS	AX27825 FB-2	Total/NA	Water	SM 4500 Cl- E	
400-147182-18 MSD	AX27825 FB-2	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 380095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-147182-1	AX27808 MW-10	Total/NA	Water	SM 4500 SO4 E	
400-147182-2	AX27809 MW-11	Total/NA	Water	SM 4500 SO4 E	
400-147182-3	AX27810 MW-12	Total/NA	Water	SM 4500 SO4 E	
400-147182-4	AX27811 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-147182-5	AX27812 EB-2	Total/NA	Water	SM 4500 SO4 E	
400-147182-6	AX27813 MW-5	Total/NA	Water	SM 4500 SO4 E	
400-147182-7	AX27814 MW-5 DUP	Total/NA	Water	SM 4500 SO4 E	
400-147182-8	AX27815 MW-6	Total/NA	Water	SM 4500 SO4 E	
400-147182-9	AX27816 MW-7	Total/NA	Water	SM 4500 SO4 E	
400-147182-10	AX27817 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-147182-11	AX27818 MW-2	Total/NA	Water	SM 4500 SO4 E	
400-147182-12	AX27819 MW-3	Total/NA	Water	SM 4500 SO4 E	
400-147182-13	AX27820 MW-9	Total/NA	Water	SM 4500 SO4 E	
400-147182-14	AX27821 MW-8	Total/NA	Water	SM 4500 SO4 E	
400-147182-15	AX27822 MW-4	Total/NA	Water	SM 4500 SO4 E	
400-147182-16	AX27823 MW-2 DUP	Total/NA	Water	SM 4500 SO4 E	
400-147182-17	AX27824 EB-1	Total/NA	Water	SM 4500 SO4 E	
400-147182-18	AX27825 FB-2	Total/NA	Water	SM 4500 SO4 E	
MB 400-380095/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-380095/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-380095/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-147182-9 MS	AX27816 MW-7	Total/NA	Water	SM 4500 SO4 E	
400-147182-9 MSD	AX27816 MW-7	Total/NA	Water	SM 4500 SO4 E	
400-147182-18 MS	AX27825 FB-2	Total/NA	Water	SM 4500 SO4 E	
400-147182-18 MSD	AX27825 FB-2	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 380108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-147182-14	AX27821 MW-8	Total/NA	Water	SM 4500 F C	
400-147182-15	AX27822 MW-4	Total/NA	Water	SM 4500 F C	
400-147182-16	AX27823 MW-2 DUP	Total/NA	Water	SM 4500 F C	
400-147182-17	AX27824 EB-1	Total/NA	Water	SM 4500 F C	
400-147182-18	AX27825 FB-2	Total/NA	Water	SM 4500 F C	
MB 400-380108/2	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-380108/3	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-147182-18 MS	AX27825 FB-2	Total/NA	Water	SM 4500 F C	
400-147182-18 MSD	AX27825 FB-2	Total/NA	Water	SM 4500 F C	
400-147380-A-3 DU	Duplicate	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-380092/6
Matrix: Water
Analysis Batch: 380092

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			12/17/17 08:00	1

Lab Sample ID: LCS 400-380092/7
Matrix: Water
Analysis Batch: 380092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	29.9		mg/L		100	90 - 110

Lab Sample ID: MRL 400-380092/3
Matrix: Water
Analysis Batch: 380092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.04		mg/L		102	50 - 150

Lab Sample ID: 400-147182-9 MS
Matrix: Water
Analysis Batch: 380092

Client Sample ID: AX27816 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.9		10.0	18.6		mg/L		107	73 - 120

Lab Sample ID: 400-147182-9 MSD
Matrix: Water
Analysis Batch: 380092

Client Sample ID: AX27816 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	7.9		10.0	18.5		mg/L		106	73 - 120	1	8

Lab Sample ID: 400-147182-10 MS
Matrix: Water
Analysis Batch: 380092

Client Sample ID: AX27817 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.2		10.0	17.2		mg/L		110	73 - 120

Lab Sample ID: 400-147182-10 MSD
Matrix: Water
Analysis Batch: 380092

Client Sample ID: AX27817 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	6.2		10.0	17.5		mg/L		114	73 - 120	2	8

Lab Sample ID: MB 400-380094/6
Matrix: Water
Analysis Batch: 380094

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			12/17/17 09:13	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Lab Sample ID: LCS 400-380094/7
Matrix: Water
Analysis Batch: 380094

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	30.3		mg/L		101	90 - 110

Lab Sample ID: MRL 400-380094/3
Matrix: Water
Analysis Batch: 380094

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.99	J	mg/L		100	50 - 150

Lab Sample ID: 400-147182-15 MS
Matrix: Water
Analysis Batch: 380094

Client Sample ID: AX27822 MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	8.5		10.0	19.3		mg/L		108	73 - 120

Lab Sample ID: 400-147182-15 MSD
Matrix: Water
Analysis Batch: 380094

Client Sample ID: AX27822 MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	8.5		10.0	19.4		mg/L		109	73 - 120	1	8

Lab Sample ID: 400-147182-18 MS
Matrix: Water
Analysis Batch: 380094

Client Sample ID: AX27825 FB-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	FB Result	FB Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	<0.60		10.0	11.3		mg/L		113	73 - 120

Lab Sample ID: 400-147182-18 MSD
Matrix: Water
Analysis Batch: 380094

Client Sample ID: AX27825 FB-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	FB Result	FB Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	<0.60		10.0	11.3		mg/L		113	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-379872/2
Matrix: Water
Analysis Batch: 379872

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			12/15/17 09:36	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: LCS 400-379872/3
Matrix: Water
Analysis Batch: 379872

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.14		mg/L		104	90 - 110

Lab Sample ID: 400-147182-9 MS
Matrix: Water
Analysis Batch: 379872

Client Sample ID: AX27816 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.090	J	1.00	1.14		mg/L		105	75 - 125

Lab Sample ID: 400-147182-9 MSD
Matrix: Water
Analysis Batch: 379872

Client Sample ID: AX27816 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.090	J	1.00	1.19		mg/L		110	75 - 125	4	4

Lab Sample ID: 400-147182-5 DU
Matrix: Water
Analysis Batch: 379872

Client Sample ID: AX27812 EB-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	<0.032			<0.032		mg/L		NC	4

Lab Sample ID: MB 400-380108/2
Matrix: Water
Analysis Batch: 380108

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			12/18/17 10:32	1

Lab Sample ID: LCS 400-380108/3
Matrix: Water
Analysis Batch: 380108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.84		mg/L		96	90 - 110

Lab Sample ID: 400-147182-18 MS
Matrix: Water
Analysis Batch: 380108

Client Sample ID: AX27825 FB-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	FB Result	FB Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	<0.032		1.00	1.00		mg/L		100	75 - 125

Lab Sample ID: 400-147182-18 MSD
Matrix: Water
Analysis Batch: 380108

Client Sample ID: AX27825 FB-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	FB Result	FB Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.032		1.00	1.00		mg/L		100	75 - 125	0	4

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

Lab Sample ID: 400-147380-A-3 DU
Matrix: Water
Analysis Batch: 380108

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.12		0.120		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-380095/6
Matrix: Water
Analysis Batch: 380095

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			12/18/17 06:54	1

Lab Sample ID: LCS 400-380095/7
Matrix: Water
Analysis Batch: 380095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.6		mg/L		97	90 - 110

Lab Sample ID: MRL 400-380095/3
Matrix: Water
Analysis Batch: 380095

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.46	J	mg/L		89	50 - 150

Lab Sample ID: 400-147182-9 MS
Matrix: Water
Analysis Batch: 380095

Client Sample ID: AX27816 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	14		10.0	24.0		mg/L		97	77 - 128

Lab Sample ID: 400-147182-9 MSD
Matrix: Water
Analysis Batch: 380095

Client Sample ID: AX27816 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	14		10.0	24.0		mg/L		97	77 - 128	0	5

Lab Sample ID: 400-147182-18 MS
Matrix: Water
Analysis Batch: 380095

Client Sample ID: AX27825 FB-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	FB Result	FB Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<1.4		10.0	10.3		mg/L		103	77 - 128

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

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

Lab Sample ID: 400-147182-18 MSD
 Matrix: Water
 Analysis Batch: 380095

Client Sample ID: AX27825 FB-2
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	FB Result	FB Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<1.4		10.0	10.2		mg/L		102	77 - 128	1	5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record



Client Information
 Client Contact: Sarah Copeland
 Company: Alabama Power General Test Laboratory
 Address: 744 County Rd 87 GSC #8
 City: Calera
 State, Zip: AL, 35040
 Phone: 205-664-6121 (Tel)
 Email: sgcopela@southernco.com
 Project Name: CCR
 Site: Gadsden Ash Pond (1)

Lab PM: Whitnire, Cheyenne R
 E-Mail: cheyenne.whitnire@testamericainc.com
 Carrier Tracking No(s):
 Lab No: 400-147182
 Job #: 400-147182
 COC No: 400-56525-24537.1
 Page: Page 1 of 2

Analysis Requested

Due Date Requested:
 TAT Requested (days):
 PO #:
 WO #:
 Project #:
 SSONW#:

Sample Identification: 400-147182 COC

QR Code: [Image]

Preservation Codes:
 M - Hexane
 N - None
 O - AsNaO2
 P - Na2O4S
 Q - NaHSO4
 R - Na2SO3
 S - H2SO4
 T - TSP Dodecahydrate
 U - Acetone
 V - MCAA
 W - pH 4.5
 Z - other (specify)

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Soils, Other, etc.)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM 4500 F.C.	SM 4500 Cl.E	SM 4500 SO4.E	Total Number of Containers	Special Instructions/Note:
AX27808	12/6/17	1230	G	Water		X	X	X	X		1	MMW-10
AX27809	12/6/17	1430	G	Water		X	X	X	X		1	MMW-11
AX27810	12/6/17	1551	G	Water		X	X	X	X		1	MMW-12
AX27811	12/6/17	1625	G	Water		X	X	X	X		1	FB-1 (Field Blank)
AX27812	12/7/17	0845	G	Water		X	X	X	X		1	EB-2 (Equipment Blank)
AX27813	12/7/17	1132	G	Water		X	X	X	X		1	MMW-5
AX27814	12/7/17	1132	G	Water		X	X	X	X		1	MMW-5 Dup (Sample Duplicate)
AX27815	12/7/17	1403	G	Water		X	X	X	X		1	MMW-6
AX27816	12/7/17	1527	G	Water		Y	X	X	X		1	MMW-7

Non-Hazard Flammable Skin Irritant
 Deliverable Requested: I, II, III, IV, Other (specify)
 Poison B Unknown Radiological

Empty Kit Relinquished by:
 Relinquished by: Sarah Copeland
 Date/Time: 12/11/2017; 1230

Relinquished by:
 Date/Time:
 Relinquished by:
 Date/Time:

Custody Seals Intact:
 Δ Yes Δ No

Special Instructions/QC Requirements:
 Return To Client Disposal By Lab Archive For _____ Months

Method of Shipment:
 Date/Time: 12/11/17 918
 Company
 Date/Time:
 Company
 Date/Time:
 Company

Cooler Temperature(s) °C and Other Remarks: 4.5 2 10



TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record



Client Information
 Sampler: Anthony Goggins
 Lab PM: Whitmore, Cheyenne R
 Client Contact: Sarah Copeland
 Phone: [blank]
 E-Mail: cheyenne.whitmore@testamericainc.com
 Company: Alabama Power General Test Laboratory
 Address: 744 County Rd 87 GSC #8
 City: Callera
 State: AL, Zip: 35040
 Phone: 205-664-6121 (Tel)
 Email: sgcopela@southernco.com
 Project Name: CCR
 Project #: 40007143
 Site: Gadsden Ash Pond (1)

Analysis Requested
 Due Date Requested: [blank]
 TAT Requested (days): Routine
 PO #: [blank]
 WO #: [blank]
 Project #: 40007143
 SSOW#: [blank]

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Organic, Bio-Tissue, Acid)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM 4500 F.C.	SM 4500 C.E.	SM 4500 S.O4.F.	Total Number of Containers	Special Instructions/Note:
AX27817	12/6/17	1124	G	Water		X	X	X	X	X	1	MW-1
AX27818	12/6/17	1303	G	Water		X	X	X	X	X	1	MW-2
AX27819	12/6/17	1406	G	Water		X	X	X	X	X	1	MW-3
AX27820	12/7/17	1151	G	Water		X	X	X	X	X	1	MW-9
AX27821	12/7/17	1257	G	Water		X	X	X	X	X	1	MW-8
AX27822	12/7/17	1433	G	Water		X	X	X	X	X	1	MW-4
AX27823	12/6/17	1303	G	Water		X	X	X	X	X	1	MW-2 Dup (Sample Duplicate)
AX27824	12/6/17	1442	G	Water		X	X	X	X	X	1	EB-1 (Equipment Blank)
AX27825	12/7/17	1224	G	Water		Y	X	X	X	X	1	FB-2 (Field Blank)

Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested: I, II, III, IV, Other (specify) [blank]
 Empty Kit Relinquished by: [blank]
 Relinquished by: Sarah Copeland
 Date/Time: 12/11/2017; 1230
 Date/Time: [blank]
 Date/Time: [blank]
 Date/Time: [blank]
 Custody Seals Intact: Yes No
 Cooler Temperature(s) °C and Other Remarks: 41.3°C



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-147182-1
SDG Number: Gadsden Ash Pond (1)

Login Number: 147182

List Number: 1

Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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	4.3°C IR7
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	



Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-1
 SDG: Gadsden Ash Pond (1)

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	06-30-18
Arizona	State Program	9	AZ0710	01-11-18
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
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	12-31-17
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-17
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (DW)	NELAP	6	LA170005	12-31-17
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	12-31-17
Oklahoma	State Program	6	9810	08-31-18
Pennsylvania	NELAP	3	68-00467	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17
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
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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: 400-147182-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond (1)

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

1/19/2018 3:47:16 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
SDG: Gadsden Ash Pond (1)

Job ID: 400-147182-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-147182-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-342856. Sample aliquots reduced due to limited sample volumes. AX27826 MW-10 (400-147182-19), AX27827 MW-11 (400-147182-20), AX27828 MW-12 (400-147182-21), AX27829 FB-1 (400-147182-22), AX27830 EB-2 (400-147182-23), AX27831 MW-5 (400-147182-24), AX27832 MW-5 DUP (400-147182-25), AX27833 MW-6 (400-147182-26), AX27833 MW-6 (400-147182-26[DUJ]), AX27834 MW-7 (400-147182-27), AX27835 MW-1 (400-147182-28), AX27836 MW-2 (400-147182-29), AX27837 MW-3 (400-147182-30), AX27838 MW-9 (400-147182-31), AX27839 MW-8 (400-147182-32), AX27840 MW-4 (400-147182-33), AX27841 MW-2 DUP (400-147182-34), AX27842 EB-1 (400-147182-35) and AX27843 FB-2 (400-147182-36)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-342856. Samples turn yellow in color after the addition of citric acid. The pH did not change due to the addition of Citric acid it is still between 1-2. AX27826 MW-10 (400-147182-19), AX27827 MW-11 (400-147182-20), AX27836 MW-2 (400-147182-29), AX27840 MW-4 (400-147182-33) and AX27841 MW-2 DUP (400-147182-34)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-342856. Samples turn peach in color after the addition of citric acid. The pH did not change due to the addition of Citric acid it is still between 1-2. AX27835 MW-1 (400-147182-28) and AX27839 MW-8 (400-147182-32)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-342849. Sample aliquots reduced due to limited sample volumes. AX27826 MW-10 (400-147182-19), AX27827 MW-11 (400-147182-20), AX27828 MW-12 (400-147182-21), AX27829 FB-1 (400-147182-22), AX27830 EB-2 (400-147182-23), AX27831 MW-5 (400-147182-24), AX27832 MW-5 DUP (400-147182-25), AX27833 MW-6 (400-147182-26), AX27833 MW-6 (400-147182-26[DUJ]), AX27834 MW-7 (400-147182-27), AX27835 MW-1 (400-147182-28), AX27836 MW-2 (400-147182-29), AX27837 MW-3 (400-147182-30), AX27838 MW-9 (400-147182-31), AX27839 MW-8 (400-147182-32), AX27840 MW-4 (400-147182-33), AX27841 MW-2 DUP (400-147182-34), AX27842 EB-1 (400-147182-35) and AX27843 FB-2 (400-147182-36)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-342849. Samples turn yellow in color after the addition of citric acid. The pH did not change due to the addition of Citric acid it is still between 1-2. AX27826 MW-10 (400-147182-19), AX27827 MW-11 (400-147182-20), AX27836 MW-2 (400-147182-29), AX27840 MW-4 (400-147182-33) and AX27841 MW-2 DUP (400-147182-34)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-342849. Samples turn peach in color after the addition of citric acid. The pH did not change due to the addition of Citric acid it is still between 1-2. AX27835 MW-1 (400-147182-28) and AX27839 MW-8 (400-147182-32)

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
SDG: Gadsden Ash Pond (1)

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

Protocol References:

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
SDG: Gadsden Ash Pond (1)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-147182-19	AX27826 MW-10	Water	12/06/17 12:30	12/13/17 16:30
400-147182-20	AX27827 MW-11	Water	12/06/17 14:30	12/13/17 16:30
400-147182-21	AX27828 MW-12	Water	12/06/17 15:51	12/13/17 16:30
400-147182-22	AX27829 FB-1	Water	12/06/17 16:25	12/13/17 16:30
400-147182-23	AX27830 EB-2	Water	12/07/17 08:45	12/13/17 16:30
400-147182-24	AX27831 MW-5	Water	12/07/17 11:32	12/13/17 16:30
400-147182-25	AX27832 MW-5 DUP	Water	12/07/17 11:32	12/13/17 16:30
400-147182-26	AX27833 MW-6	Water	12/07/17 14:03	12/13/17 16:30
400-147182-27	AX27834 MW-7	Water	12/07/17 15:27	12/13/17 16:30
400-147182-28	AX27835 MW-1	Water	12/06/17 11:24	12/13/17 16:30
400-147182-29	AX27836 MW-2	Water	12/06/17 13:03	12/13/17 16:30
400-147182-30	AX27837 MW-3	Water	12/06/17 14:06	12/13/17 16:30
400-147182-31	AX27838 MW-9	Water	12/07/17 11:51	12/13/17 16:30
400-147182-32	AX27839 MW-8	Water	12/07/17 12:57	12/13/17 16:30
400-147182-33	AX27840 MW-4	Water	12/07/17 14:33	12/13/17 16:30
400-147182-34	AX27841 MW-2 DUP	Water	12/06/17 13:03	12/13/17 16:30
400-147182-35	AX27842 EB-1	Water	12/06/17 14:42	12/13/17 16:30
400-147182-36	AX27843 FB-2	Water	12/07/17 12:24	12/13/17 16:30

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27826 MW-10

Lab Sample ID: 400-147182-19

Date Collected: 12/06/17 12:30

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.281	U	0.216	0.217	1.00	0.307	pCi/L	12/19/17 10:17	01/11/18 16:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					12/19/17 10:17	01/11/18 16:20	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.304	U	0.313	0.314	1.00	0.508	pCi/L	12/19/17 10:45	01/10/18 17:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					12/19/17 10:45	01/10/18 17:28	1
Y Carrier	83.7		40 - 110					12/19/17 10:45	01/10/18 17:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.585		0.380	0.382	5.00	0.508	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27827 MW-11

Lab Sample ID: 400-147182-20

Date Collected: 12/06/17 14:30

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.575		0.244	0.249	1.00	0.231	pCi/L	12/19/17 10:17	01/11/18 16:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					12/19/17 10:17	01/11/18 16:20	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.316	U	0.317	0.318	1.00	0.515	pCi/L	12/19/17 10:45	01/10/18 17:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					12/19/17 10:45	01/10/18 17:28	1
Y Carrier	86.4		40 - 110					12/19/17 10:45	01/10/18 17:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.891		0.400	0.404	5.00	0.515	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27828 MW-12

Lab Sample ID: 400-147182-21

Date Collected: 12/06/17 15:51

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0993	U	0.164	0.165	1.00	0.288	pCi/L	12/19/17 10:17	01/11/18 16:20	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		40 - 110					12/19/17 10:17	01/11/18 16:20	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.336	U	0.330	0.331	1.00	0.533	pCi/L	12/19/17 10:45	01/10/18 17:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		40 - 110					12/19/17 10:45	01/10/18 17:28	1
Y Carrier	80.0		40 - 110					12/19/17 10:45	01/10/18 17:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.435	U	0.369	0.370	5.00	0.533	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27829 FB-1

Lab Sample ID: 400-147182-22

Date Collected: 12/06/17 16:25

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00423	U	0.117	0.117	1.00	0.254	pCi/L	12/19/17 10:17	01/11/18 16:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110					12/19/17 10:17	01/11/18 16:21	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.109	U	0.280	0.280	1.00	0.485	pCi/L	12/19/17 10:45	01/10/18 17:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110					12/19/17 10:45	01/10/18 17:28	1
Y Carrier	88.6		40 - 110					12/19/17 10:45	01/10/18 17:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.113	U	0.303	0.303	5.00	0.485	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27830 EB-2

Lab Sample ID: 400-147182-23

Date Collected: 12/07/17 08:45

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0536	U	0.0925	0.0926	1.00	0.253	pCi/L	12/19/17 10:17	01/11/18 16:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					12/19/17 10:17	01/11/18 16:21	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.159	U	0.251	0.251	1.00	0.425	pCi/L	12/19/17 10:45	01/10/18 17:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					12/19/17 10:45	01/10/18 17:28	1
Y Carrier	86.4		40 - 110					12/19/17 10:45	01/10/18 17:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.106	U	0.268	0.268	5.00	0.425	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27831 MW-5

Lab Sample ID: 400-147182-24

Date Collected: 12/07/17 11:32

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.288		0.207	0.208	1.00	0.282	pCi/L	12/19/17 10:17	01/11/18 16:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					12/19/17 10:17	01/11/18 16:21	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.597		0.334	0.338	1.00	0.498	pCi/L	12/19/17 10:45	01/10/18 17:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					12/19/17 10:45	01/10/18 17:28	1
Y Carrier	87.1		40 - 110					12/19/17 10:45	01/10/18 17:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.885		0.393	0.397	5.00	0.498	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27832 MW-5 DUP

Lab Sample ID: 400-147182-25

Date Collected: 12/07/17 11:32

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.234	U	0.190	0.191	1.00	0.277	pCi/L	12/19/17 10:17	01/11/18 16:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					12/19/17 10:17	01/11/18 16:21	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.719		0.348	0.355	1.00	0.504	pCi/L	12/19/17 10:45	01/10/18 17:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					12/19/17 10:45	01/10/18 17:29	1
Y Carrier	85.2		40 - 110					12/19/17 10:45	01/10/18 17:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.952		0.396	0.403	5.00	0.504	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27833 MW-6

Lab Sample ID: 400-147182-26

Date Collected: 12/07/17 14:03

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.136	U	0.156	0.156	1.00	0.249	pCi/L	12/19/17 10:17	01/11/18 16:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					12/19/17 10:17	01/11/18 16:21	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.258	U	0.263	0.264	1.00	0.427	pCi/L	12/19/17 10:45	01/10/18 17:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					12/19/17 10:45	01/10/18 17:29	1
Y Carrier	90.1		40 - 110					12/19/17 10:45	01/10/18 17:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.394	U	0.306	0.307	5.00	0.427	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27834 MW-7

Lab Sample ID: 400-147182-27

Date Collected: 12/07/17 15:27

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.272		0.197	0.199	1.00	0.263	pCi/L	12/19/17 10:17	01/11/18 16:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					12/19/17 10:17	01/11/18 16:23	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.623		0.342	0.347	1.00	0.505	pCi/L	12/19/17 10:45	01/10/18 17:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					12/19/17 10:45	01/10/18 17:29	1
Y Carrier	84.1		40 - 110					12/19/17 10:45	01/10/18 17:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.895		0.395	0.400	5.00	0.505	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27835 MW-1

Lab Sample ID: 400-147182-28

Date Collected: 12/06/17 11:24

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.419		0.228	0.231	1.00	0.256	pCi/L	12/19/17 10:17	01/11/18 16:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					12/19/17 10:17	01/11/18 16:23	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.275	U	0.325	0.326	1.00	0.537	pCi/L	12/19/17 10:45	01/10/18 17:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.0		40 - 110					12/19/17 10:45	01/10/18 17:29	1
Y Carrier	84.1		40 - 110					12/19/17 10:45	01/10/18 17:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.694		0.397	0.400	5.00	0.537	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27836 MW-2

Lab Sample ID: 400-147182-29

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.215	U	0.191	0.192	1.00	0.280	pCi/L	12/19/17 10:17	01/11/18 16:23	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					12/19/17 10:17	01/11/18 16:23	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.557		0.322	0.326	1.00	0.477	pCi/L	12/19/17 10:45	01/10/18 17:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					12/19/17 10:45	01/10/18 17:29	1
Y Carrier	85.2		40 - 110					12/19/17 10:45	01/10/18 17:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.772		0.374	0.378	5.00	0.477	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27837 MW-3

Lab Sample ID: 400-147182-30

Date Collected: 12/06/17 14:06

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.283		0.180	0.182	1.00	0.212	pCi/L	12/19/17 10:17	01/11/18 16:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					12/19/17 10:17	01/11/18 16:24	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.360	U	0.306	0.308	1.00	0.486	pCi/L	12/19/17 10:45	01/10/18 17:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					12/19/17 10:45	01/10/18 17:29	1
Y Carrier	84.1		40 - 110					12/19/17 10:45	01/10/18 17:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.643		0.355	0.358	5.00	0.486	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27838 MW-9

Lab Sample ID: 400-147182-31

Date Collected: 12/07/17 11:51

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.205	U	0.170	0.171	1.00	0.240	pCi/L	12/19/17 10:17	01/11/18 16:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					12/19/17 10:17	01/11/18 16:24	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0211	U	0.287	0.287	1.00	0.514	pCi/L	12/19/17 10:45	01/10/18 17:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					12/19/17 10:45	01/10/18 17:29	1
Y Carrier	83.4		40 - 110					12/19/17 10:45	01/10/18 17:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.226	U	0.334	0.334	5.00	0.514	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27839 MW-8

Lab Sample ID: 400-147182-32

Date Collected: 12/07/17 12:57

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.251	U	0.200	0.201	1.00	0.283	pCi/L	12/19/17 10:17	01/11/18 16:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					12/19/17 10:17	01/11/18 16:24	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	7.20		0.709	0.970	1.00	0.488	pCi/L	12/19/17 10:45	01/10/18 17:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					12/19/17 10:45	01/10/18 17:31	1
Y Carrier	86.0		40 - 110					12/19/17 10:45	01/10/18 17:31	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	7.45		0.737	0.991	5.00	0.488	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27840 MW-4

Lab Sample ID: 400-147182-33

Date Collected: 12/07/17 14:33

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.448		0.236	0.239	1.00	0.268	pCi/L	12/19/17 10:17	01/11/18 16:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					12/19/17 10:17	01/11/18 16:24	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.594		0.332	0.337	1.00	0.495	pCi/L	12/19/17 10:45	01/10/18 17:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					12/19/17 10:45	01/10/18 17:31	1
Y Carrier	90.1		40 - 110					12/19/17 10:45	01/10/18 17:31	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.04		0.407	0.413	5.00	0.495	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27841 MW-2 DUP

Lab Sample ID: 400-147182-34

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.292		0.196	0.198	1.00	0.248	pCi/L	12/19/17 10:17	01/11/18 16:24	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110					12/19/17 10:17	01/11/18 16:24	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.322	U	0.309	0.311	1.00	0.499	pCi/L	12/19/17 10:45	01/10/18 17:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110					12/19/17 10:45	01/10/18 17:31	1
Y Carrier	87.1		40 - 110					12/19/17 10:45	01/10/18 17:31	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.614		0.366	0.369	5.00	0.499	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27842 EB-1

Lab Sample ID: 400-147182-35

Date Collected: 12/06/17 14:42

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0486	U	0.121	0.121	1.00	0.233	pCi/L	12/19/17 10:17	01/11/18 16:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					12/19/17 10:17	01/11/18 16:25	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.298	U	0.314	0.315	1.00	0.512	pCi/L	12/19/17 10:45	01/10/18 17:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					12/19/17 10:45	01/10/18 17:31	1
Y Carrier	88.2		40 - 110					12/19/17 10:45	01/10/18 17:31	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.347	U	0.337	0.337	5.00	0.512	pCi/L		01/18/18 15:49	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27843 FB-2

Lab Sample ID: 400-147182-36

Date Collected: 12/07/17 12:24

Matrix: Water

Date Received: 12/13/17 16:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0679	U	0.119	0.119	1.00	0.302	pCi/L	12/19/17 10:17	01/11/18 16:25	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		40 - 110					12/19/17 10:17	01/11/18 16:25	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.538	U	0.362	0.365	1.00	0.559	pCi/L	12/19/17 10:45	01/10/18 17:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		40 - 110					12/19/17 10:45	01/10/18 17:31	1
Y Carrier	84.5		40 - 110					12/19/17 10:45	01/10/18 17:31	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.470	U	0.381	0.384	5.00	0.559	pCi/L		01/18/18 15:49	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
SDG: Gadsden Ash Pond (1)

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27826 MW-10

Lab Sample ID: 400-147182-19

Date Collected: 12/06/17 12:30

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345901	01/11/18 16:20	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27827 MW-11

Lab Sample ID: 400-147182-20

Date Collected: 12/06/17 14:30

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345901	01/11/18 16:20	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27828 MW-12

Lab Sample ID: 400-147182-21

Date Collected: 12/06/17 15:51

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345901	01/11/18 16:20	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27829 FB-1

Lab Sample ID: 400-147182-22

Date Collected: 12/06/17 16:25

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345901	01/11/18 16:21	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27830 EB-2

Lab Sample ID: 400-147182-23

Date Collected: 12/07/17 08:45

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345901	01/11/18 16:21	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27831 MW-5

Lab Sample ID: 400-147182-24

Date Collected: 12/07/17 11:32

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345901	01/11/18 16:21	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27832 MW-5 DUP

Lab Sample ID: 400-147182-25

Date Collected: 12/07/17 11:32

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345901	01/11/18 16:21	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27833 MW-6

Lab Sample ID: 400-147182-26

Date Collected: 12/07/17 14:03

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345901	01/11/18 16:21	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27834 MW-7

Lab Sample ID: 400-147182-27

Date Collected: 12/07/17 15:27

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:23	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27835 MW-1

Lab Sample ID: 400-147182-28

Date Collected: 12/06/17 11:24

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:23	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27836 MW-2

Lab Sample ID: 400-147182-29

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:23	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27837 MW-3

Lab Sample ID: 400-147182-30

Date Collected: 12/06/17 14:06

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:24	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27838 MW-9

Lab Sample ID: 400-147182-31

Date Collected: 12/07/17 11:51

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:24	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345559	01/10/18 17:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27839 MW-8

Lab Sample ID: 400-147182-32

Date Collected: 12/07/17 12:57

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:24	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345668	01/10/18 17:31	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27840 MW-4

Lab Sample ID: 400-147182-33

Date Collected: 12/07/17 14:33

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:24	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345668	01/10/18 17:31	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27841 MW-2 DUP

Lab Sample ID: 400-147182-34

Date Collected: 12/06/17 13:03

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:24	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345668	01/10/18 17:31	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
SDG: Gadsden Ash Pond (1)

Client Sample ID: AX27842 EB-1

Lab Sample ID: 400-147182-35

Date Collected: 12/06/17 14:42

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:25	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345668	01/10/18 17:31	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	RTM	TAL SL

Client Sample ID: AX27843 FB-2

Lab Sample ID: 400-147182-36

Date Collected: 12/07/17 12:24

Matrix: Water

Date Received: 12/13/17 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			342849	12/19/17 10:17	SJC	TAL SL
Total/NA	Analysis	9315		1	345900	01/11/18 16:25	CDR	TAL SL
Total/NA	Prep	PrecSep_0			342856	12/19/17 10:45	SJC	TAL SL
Total/NA	Analysis	9320		1	345668	01/10/18 17:31	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	346854	01/18/18 15:49	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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Rad

Prep Batch: 342849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-147182-19	AX27826 MW-10	Total/NA	Water	PrecSep-21	
400-147182-20	AX27827 MW-11	Total/NA	Water	PrecSep-21	
400-147182-21	AX27828 MW-12	Total/NA	Water	PrecSep-21	
400-147182-22	AX27829 FB-1	Total/NA	Water	PrecSep-21	
400-147182-23	AX27830 EB-2	Total/NA	Water	PrecSep-21	
400-147182-24	AX27831 MW-5	Total/NA	Water	PrecSep-21	
400-147182-25	AX27832 MW-5 DUP	Total/NA	Water	PrecSep-21	
400-147182-26	AX27833 MW-6	Total/NA	Water	PrecSep-21	
400-147182-27	AX27834 MW-7	Total/NA	Water	PrecSep-21	
400-147182-28	AX27835 MW-1	Total/NA	Water	PrecSep-21	
400-147182-29	AX27836 MW-2	Total/NA	Water	PrecSep-21	
400-147182-30	AX27837 MW-3	Total/NA	Water	PrecSep-21	
400-147182-31	AX27838 MW-9	Total/NA	Water	PrecSep-21	
400-147182-32	AX27839 MW-8	Total/NA	Water	PrecSep-21	
400-147182-33	AX27840 MW-4	Total/NA	Water	PrecSep-21	
400-147182-34	AX27841 MW-2 DUP	Total/NA	Water	PrecSep-21	
400-147182-35	AX27842 EB-1	Total/NA	Water	PrecSep-21	
400-147182-36	AX27843 FB-2	Total/NA	Water	PrecSep-21	
MB 160-342849/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-342849/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-147182-26 DU	AX27833 MW-6	Total/NA	Water	PrecSep-21	

Prep Batch: 342856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-147182-19	AX27826 MW-10	Total/NA	Water	PrecSep_0	
400-147182-20	AX27827 MW-11	Total/NA	Water	PrecSep_0	
400-147182-21	AX27828 MW-12	Total/NA	Water	PrecSep_0	
400-147182-22	AX27829 FB-1	Total/NA	Water	PrecSep_0	
400-147182-23	AX27830 EB-2	Total/NA	Water	PrecSep_0	
400-147182-24	AX27831 MW-5	Total/NA	Water	PrecSep_0	
400-147182-25	AX27832 MW-5 DUP	Total/NA	Water	PrecSep_0	
400-147182-26	AX27833 MW-6	Total/NA	Water	PrecSep_0	
400-147182-27	AX27834 MW-7	Total/NA	Water	PrecSep_0	
400-147182-28	AX27835 MW-1	Total/NA	Water	PrecSep_0	
400-147182-29	AX27836 MW-2	Total/NA	Water	PrecSep_0	
400-147182-30	AX27837 MW-3	Total/NA	Water	PrecSep_0	
400-147182-31	AX27838 MW-9	Total/NA	Water	PrecSep_0	
400-147182-32	AX27839 MW-8	Total/NA	Water	PrecSep_0	
400-147182-33	AX27840 MW-4	Total/NA	Water	PrecSep_0	
400-147182-34	AX27841 MW-2 DUP	Total/NA	Water	PrecSep_0	
400-147182-35	AX27842 EB-1	Total/NA	Water	PrecSep_0	
400-147182-36	AX27843 FB-2	Total/NA	Water	PrecSep_0	
MB 160-342856/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-342856/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-147182-26 DU	AX27833 MW-6	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-342849/1-A
Matrix: Water
Analysis Batch: 345901

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 342849

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.02917	U	0.148	0.148	1.00	0.296	pCi/L	12/19/17 10:17	01/11/18 16:20	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		40 - 110					12/19/17 10:17	01/11/18 16:20	1

Lab Sample ID: LCS 160-342849/2-A
Matrix: Water
Analysis Batch: 345900

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 342849

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.7	16.04		1.92	1.00	0.241	pCi/L	102	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	84.4		40 - 110						

Lab Sample ID: 400-147182-26 DU
Matrix: Water
Analysis Batch: 345901

Client Sample ID: AX27833 MW-6
Prep Type: Total/NA
Prep Batch: 342849

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.136	U	0.2589		0.191	1.00	0.254	pCi/L	0.35	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	89.4		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-342856/1-A
Matrix: Water
Analysis Batch: 345559

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 342856

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.2977	U	0.310	0.311	1.00	0.505	pCi/L	12/19/17 10:45	01/10/18 17:28	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		40 - 110					12/19/17 10:45	01/10/18 17:28	1
Y Carrier	85.6		40 - 110					12/19/17 10:45	01/10/18 17:28	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

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

Lab Sample ID: LCS 160-342856/2-A
Matrix: Water
Analysis Batch: 345559

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 342856

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	11.5	12.98		1.53	1.00	0.510	pCi/L	112	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	84.4		40 - 110
Y Carrier	85.2		40 - 110

Lab Sample ID: 400-147182-26 DU
Matrix: Water
Analysis Batch: 345559

Client Sample ID: AX27833 MW-6
Prep Type: Total/NA
Prep Batch: 342856

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.258	U	0.6097		0.367	1.00	0.551	pCi/L	0.56	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	89.4		40 - 110
Y Carrier	84.9		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-147182-26 DU
Matrix: Water
Analysis Batch: 346854

Client Sample ID: AX27833 MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.394	U	0.8685		0.414	5.00	0.551	pCi/L	0.66	

TestAmerica Pensacola

3355 McLemore Drive
Pensacola, FL 32514
Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record



Client Information Client Contact: Ben Rothschild Phone: Sarah Copeland Lab PM: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com		COC No: 400-56525-24537.1 Page: 1 of 2 Job #: 400-147182										
Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6121(Tel) Email: sgcopela@southernco.com Project Name: CCR SSO#: Site: Gadsden Ash Pond (1)		Carrier Tracking No(s): Analysis Requested:										
Due Date Requested: TAT Requested (days): Routine PO #: WO #: Project #: 40007143 SSO#: Site: Gadsden Ash Pond (1)		915_Ra226, 9320_Ra228, Ra228Ra228_GFPc 400-147182 COC 										
Sample Identification		Total Number of containers										
AX27826	12/8/17	1230	G	Water	Matrix (W=water, S=solid, O=water/slurry)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	X	X	1	MW-10	
AX27827	12/6/17	1430	G	Water				X		1	MW-11	
AX27828	12/6/17	1551	G	Water				X		1	MW-12	
AX27829	12/6/17	1625	G	Water				X		1	FB-1 (Field Blank)	
AX27830	12/7/17	0845	G	Water				X		1	EB-2 (Equipment Blank)	
AX27831	12/7/17	1132	G	Water				X		1	MW-5	
AX27832	12/7/17	1132	G	Water				X		1	MW-5 Dup (Sample Duplicate)	
AX27833	12/7/17	1403	G	Water				Y		3	MW-6	
AX27834	12/7/17	1527	G	Water				X		1	MW-7	
Special Instructions/Note:											Special Instructions/QC Requirements:	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological											Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Deliverable Requested: I, II, III, IV, Other (specify)											Method of Shipment:	
Empty Kit Relinquished by:											Date:	
Relinquished by: Sarah Copeland											Date/Time: 12/11/2017, 1245	
Relinquished by:											Date/Time:	
Relinquished by:											Date/Time:	
Relinquished by:											Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No											Cooler Temperature(s) °C and Other Remarks:	



Chain of Custody Record



Client Information Client Contact: Sarah Copeland Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Callera State/Zip: AL, 35040 Phone: 205-664-6121 (Tel) Email: sgcopela@southernco.com Project Name: CCR Site: Gadsden Ash Pond (1)		Lab PM: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com Carrier Tracking No(s): Job #: 400-14718Z	
Due Date Requested: TAT Requested (days): Routine PO #: WO #: Project #: 40007143 SSO#: Address:		Analysis Requested Total Number of containers:	
Sample Identification Sample ID: AX27835 Sample ID: AX27836 Sample ID: AX27837 Sample ID: AX27838 Sample ID: AX27839 Sample ID: AX27840 Sample ID: AX27842 Sample ID: AX27843		Matrix (W=Water, S=Soil, O=Organic, I=Inorganic, A=Air) Sample Type (C=Comp, G=grab) Sample Time Sample Date Preservation Code:	
Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)		Special Instructions/Note: MW-1 MW-2 MW-3 MW-9 MW-8 MW-4 MW-2 Dup (Sample Duplicate) EB-1 (Equipment Blank) FB-2 (Field Blank)	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological			
Deliverable Requested: I, II, III, IV, Other (specify)			
Empty Kit Relinquished by: Relinquished by: Sarah Copeland Relinquished by: Relinquished by:			
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No			
Date/Time: 12/11/2017: 1245 Date/Time: Date/Time:		Date/Time: 12/13/17 1600 Date/Time: Date/Time:	
Company: APC Company:		Company:	
Cooler Temperature(s) °C and Other Remarks:			



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-147182-2
SDG Number: Gadsden Ash Pond (1)

Login Number: 147182

List Number: 1

Creator: Siddoway, Benjamin

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	4.3°C IR7
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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
 SDG: Gadsden Ash Pond (1)

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	06-30-18
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
Illinois	NELAP	5	200041	10-09-18
Iowa	State Program	7	367	08-01-18
Kansas	NELAP	7	E-10253	12-31-18
Kentucky (UST)	State Program	4	53	06-30-18
Kentucky (WW)	State Program	4	98030	12-31-18
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (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	01-31-18
Rhode Island	State Program	1	LAO00307	12-30-17 *
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
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
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	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
Iowa	State Program	7	373	02-01-18
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
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542017-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18
New York	NELAP	2	11616	03-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-147182-2
SDG: Gadsden Ash Pond (1)

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
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	02-21-18 *
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
West Virginia DEP	State Program	3	381	08-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1133
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
42 Inverness Center Parkway
Birmingham, AL 35242
Attention : Dustin Brooks & Greg Dyer
Released By : Sarah Copeland
sgcopela@southernco.com
(205) 664-6121

The following data has been reviewed and approved by:

Quality Control: Sarah Copeland
Digitally signed by Sarah Copeland
DN: cn=Sarah Copeland, o, ou,
email=sgcopela@southernco.com,
c=US
Date: 2018.03.08 12:57:38 -06'00'

Supervision: T. Durant Maske
Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.03.09 09:31:21 -06'00'



Anions

Gadsden Ash Pond

WMWGADAP_1133

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All samples were outsourced to Test America, Pensacola for analysis. Listed below is the job narrative provided by Test America.

Job Narrative
400-149708-1
General Chemistry

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 387042 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: AY03493 MW-1 (400-149708-1), AY03494 MW-1 DUP (400-149708-2), AY03495 MW-2 (400-149708-3), AY03496 MW-3 (400-149708-4), (400-149708-A-1 MS) and (400-149708-A-1 MSD). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 387307 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: AY03501 MW-11 (400-149708-9), AY03501 MW-11 (400-149708-9[MS]), AY03501 MW-11 (400-149708-9[MSD]), AY03502 MW-12 (400-149708-10) and AY03503 MW-12 DUP (400-149708-11). Elevated reporting limits (RLs) are provided.



Metals ICP

Gadsden Ash Pond

WMWGADAP_1133

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY03493	20180220BK & 20180226	WMWGADAP_1133
AY03494	20180220BK & 20180226	WMWGADAP_1133
AY03495	20180220BK & 20180226	WMWGADAP_1133
AY03496	20180220BK & 20180226	WMWGADAP_1133
AY03497	20180220BK	WMWGADAP_1133
AY03498	20180220BK	WMWGADAP_1133
AY03499	20180220BK	WMWGADAP_1133
AY03500	20180220BK	WMWGADAP_1133
AY03501	20180220BK	WMWGADAP_1133
AY03502	20180220CK	WMWGADAP_1133
AY03503	20180220CK	WMWGADAP_1133
AY03504	20180220CK	WMWGADAP_1133
AY03505	20180220CK	WMWGADAP_1133
AY03506	20180220CK	WMWGADAP_1133
AY03507	20180220CK	WMWGADAP_1133
AY03508	20180220CK	WMWGADAP_1133
AY03509	20180220CK	WMWGADAP_1133

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and passed.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.



- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects. The following samples were diluted due to analyzed sample concentration over the high standard of the calibration curve.

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AY03493	Calcium	x10.15
AY03494	Calcium	x10.15
AY03495	Calcium	x10.15
AY03496	Calcium	x10.15

8. The raw data results include results corrected for dilution.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1133

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY03493	612702	WMWGADAP_1133
AY03494	612702	WMWGADAP_1133
AY03495	612702	WMWGADAP_1133
AY03496	612702	WMWGADAP_1133
AY03497	612702	WMWGADAP_1133
AY03498	612702	WMWGADAP_1133
AY03499	612702	WMWGADAP_1133
AY03500	612702	WMWGADAP_1133
AY03501	612702	WMWGADAP_1133
AY03502	612702	WMWGADAP_1133
AY03503	612703	WMWGADAP_1133
AY03504	612703	WMWGADAP_1133
AY03505	612703	WMWGADAP_1133
AY03506	612703	WMWGADAP_1133
AY03507	612703	WMWGADAP_1133
AY03508	612703	WMWGADAP_1133
AY03509	612703	WMWGADAP_1133

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.



- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a dilution of 1 to 5 to compensate for any matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1133

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY03493	612676	WMWGADAP_1133
AY03494	612676	WMWGADAP_1133
AY03495	612676	WMWGADAP_1133
AY03496	612676	WMWGADAP_1133
AY03497	612676	WMWGADAP_1133
AY03498	612676	WMWGADAP_1133
AY03499	612676	WMWGADAP_1133
AY03500	612676	WMWGADAP_1133
AY03501	612676	WMWGADAP_1133
AY03502	612676	WMWGADAP_1133
AY03503	612677	WMWGADAP_1133
AY03504	612677	WMWGADAP_1133
AY03505	612677	WMWGADAP_1133
AY03506	612677	WMWGADAP_1133
AY03507	612677	WMWGADAP_1133
AY03508	612677	WMWGADAP_1133
AY03509	612677	WMWGADAP_1133

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.



- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1133/6

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY03493	612335	WMWGADAP_1133
AY03494	612335	WMWGADAP_1133
AY03495	612336	WMWGADAP_1133
AY03496	612336	WMWGADAP_1133
AY03497	612336	WMWGADAP_1133
AY03498	612336	WMWGADAP_1133
AY03499	612336	WMWGADAP_1133
AY03500	612336	WMWGADAP_1133
AY03501	612336	WMWGADAP_1133
AY03502	612336	WMWGADAP_1133
AY03503	612336	WMWGADAP_1133
AY03504	612336	WMWGADAP_1133
AY03505	612848	WMWGADAP_1133
AY03506	612848	WMWGADAP_1133
AY03507	612848	WMWGADAP_1133
AY03509	612848	WMWGADAP_1133
AY03701	612848	WMWGADAP_1136

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. Sample ID AY03508 was incorrectly stored overnight, therefore re-sampled as AY03701.
7. All in house quality control procedures were followed, as described below.

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Case Narrative

 Alabama Power



General Quality Control Procedures:

- A blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- All samples were between 2.5mg and 200mg residue with the exception of AY03499, AY03506 and AY03509 which were below the 2.5mg residue requirement.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY03493

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	J 0.00191	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0546	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	1.29	mg/L
* Calcium, Total	HRG	2/26/2018	EPA 200.7		10.15	1.015	5.075	275	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0123	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		50	1310	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	5.9	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	J 0.080	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		20	28.0	100	560	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY03493

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec Limit		
			MB	Limit					Rec	Limit			
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75	98.9	70 to 130	0.728	20
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115	85.7	70 to 130	3.12	20
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115	101	70 to 130	2.66	20
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23	109	70 to 130	0.812	20
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115	86.8	70 to 130	2.33	20
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115	116	70 to 130	5.49	20
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115	91.6	70 to 130	3.72	20
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115	102	70 to 130	3.19	20
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115	85.0	70 to 130	3.79	20
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046	94.5	70 to 130	1.10	20
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115	88.9	70 to 130	5.91	20
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115	90.0	70 to 130	4.56	20
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115	89.5	70 to 130	2.14	20
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15	101	70 to 130	1.08	20
AY03502	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115	94.2	70 to 130	3.63	20

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Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY03493

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY03494	Solids, Dissolved	mg/L	-2.00	25			1310	48.0	40 to 60		0.459	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-1 Dup

Laboratory ID Number: AY03494

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	J 0.00184	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0520	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	1.29	mg/L
* Calcium, Total	HRG	2/26/2018	EPA 200.7		10.15	1.015	5.075	280	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0121	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		50	1300	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	6.0	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	J 0.080	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		20	28.0	100	550	mg/L

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Laboratory certification ID: E571114

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Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-1 Dup

Laboratory ID Number: AY03494

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			Limit	MB					Limit	Rec	Limit	Prec		
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115	101	70 to 130	2.66	20	
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75	98.9	70 to 130	0.728	20	
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115	85.7	70 to 130	3.12	20	
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15	101	70 to 130	1.08	20	
AY03502	Cobalt, Total	mg/L	0.00000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115	94.2	70 to 130	3.63	20	
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115	90.0	70 to 130	4.56	20	
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115	89.5	70 to 130	2.14	20	
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23	109	70 to 130	0.812	20	
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115	86.8	70 to 130	2.33	20	
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115	116	70 to 130	5.49	20	
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115	91.6	70 to 130	3.72	20	
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115	102	70 to 130	3.19	20	
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115	85.0	70 to 130	3.79	20	
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046	94.5	70 to 130	1.10	20	
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115	88.9	70 to 130	5.91	20	

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Laboratory certification ID: E571114

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Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-1 Dup

Laboratory ID Number: AY03494

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY03494	Solids, Dissolved	mg/L	-2.00	25			1310	48.0	40 to 60		0.459	5

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Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY03495

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	0.774	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0716	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	0.733	mg/L
* Calcium, Total	HRG	2/26/2018	EPA 200.7		10.15	1.015	5.075	130	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0243	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	0.0817	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0239	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		50	572	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	3.1	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	0.27	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		10	14.0	50	190	mg/L

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY03495

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115	85.7	70 to 130	3.12	20	
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115	101	70 to 130	2.66	20	
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75	98.9	70 to 130	0.728	20	
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115	90.0	70 to 130	4.56	20	
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115	89.5	70 to 130	2.14	20	
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23	109	70 to 130	0.812	20	
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115	86.8	70 to 130	2.33	20	
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115	116	70 to 130	5.49	20	
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115	91.6	70 to 130	3.72	20	
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115	102	70 to 130	3.19	20	
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15	101	70 to 130	1.08	20	
AY03502	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115	94.2	70 to 130	3.63	20	
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115	85.0	70 to 130	3.79	20	
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046	94.5	70 to 130	1.10	20	
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115	88.9	70 to 130	5.91	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY03495

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Prec	
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60	0.826	5

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Expiration: June 30, 2018

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY03496

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0721	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	1.04	mg/L
* Calcium, Total	HRG	2/26/2018	EPA 200.7		10.15	1.015	5.075	110	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0371	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		50	556	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	7.6	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	J 0.080	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		10	14.0	50	230	mg/L

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY03496

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec	Limit
			MB	Limit						Rec	Limit		
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115	101	70 to 130	2.66	20
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115	85.7	70 to 130	3.12	20
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75	98.9	70 to 130	0.728	20
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15	101	70 to 130	1.08	20
AY03502	Cobalt, Total	mg/L	0.00000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115	94.2	70 to 130	3.63	20
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115	90.0	70 to 130	4.56	20
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115	89.5	70 to 130	2.14	20
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23	109	70 to 130	0.812	20
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115	86.8	70 to 130	2.33	20
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115	116	70 to 130	5.49	20
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115	91.6	70 to 130	3.72	20
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115	102	70 to 130	3.19	20
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115	85.0	70 to 130	3.79	20
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046	94.5	70 to 130	1.10	20
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115	88.9	70 to 130	5.91	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY03496

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY03497

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	0.0105	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.206	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	0.541	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	30.6	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0243	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		25	206	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	8.8	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	0.24	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY03497

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115		101	70 to 130		2.66	20
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115		85.7	70 to 130		3.12	20
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75		98.9	70 to 130		0.728	20
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115		90.0	70 to 130		4.56	20
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115		89.5	70 to 130		2.14	20
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23		109	70 to 130		0.812	20
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115		86.8	70 to 130		2.33	20
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115		116	70 to 130		5.49	20
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115		91.6	70 to 130		3.72	20
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115		102	70 to 130		3.19	20
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15		101	70 to 130		1.08	20
AY03502	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115		94.2	70 to 130		3.63	20
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115		85.0	70 to 130		3.79	20
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046		94.5	70 to 130		1.10	20
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115		88.9	70 to 130		5.91	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY03497

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY03498

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.195	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	0.614	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	47.8	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	J 0.00323	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		25	204	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	8.5	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	J 0.050	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	20	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY03498

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115		101	70 to 130		2.66	20
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75		98.9	70 to 130		0.728	20
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115		85.7	70 to 130		3.12	20
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15		101	70 to 130		1.08	20
AY03502	Cobalt, Total	mg/L	0.00000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115		94.2	70 to 130		3.63	20
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23		109	70 to 130		0.812	20
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115		86.8	70 to 130		2.33	20
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115		116	70 to 130		5.49	20
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115		91.6	70 to 130		3.72	20
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115		102	70 to 130		3.19	20
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115		85.0	70 to 130		3.79	20
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046		94.5	70 to 130		1.10	20
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115		88.9	70 to 130		5.91	20
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115		90.0	70 to 130		4.56	20
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115		89.5	70 to 130		2.14	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY03498

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY03499

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		25	U Not Detected	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	U <0.60	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY03499

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115		101	70 to 130		2.66	20
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115		85.7	70 to 130		3.12	20
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75		98.9	70 to 130		0.728	20
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115		90.0	70 to 130		4.56	20
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115		89.5	70 to 130		2.14	20
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23		109	70 to 130		0.812	20
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115		86.8	70 to 130		2.33	20
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115		116	70 to 130		5.49	20
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115		91.6	70 to 130		3.72	20
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115		102	70 to 130		3.19	20
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15		101	70 to 130		1.08	20
AY03502	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115		94.2	70 to 130		3.63	20
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115		85.0	70 to 130		3.79	20
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046		94.5	70 to 130		1.10	20
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115		88.9	70 to 130		5.91	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY03499

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY03500

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	J	0.00192	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01		0.289	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1		0.120	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5		47.6	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U	Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		25		237	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00		6.1	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	J	0.080	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00		19	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY03500

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115	101	70 to 130	2.66	20
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115	85.7	70 to 130	3.12	20
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75	98.9	70 to 130	0.728	20
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15	101	70 to 130	1.08	20
AY03502	Cobalt, Total	mg/L	0.00000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115	94.2	70 to 130	3.63	20
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23	109	70 to 130	0.812	20
AY03502	Barium, Total	mg/L	0.0000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115	86.8	70 to 130	2.33	20
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115	116	70 to 130	5.49	20
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115	91.6	70 to 130	3.72	20
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115	102	70 to 130	3.19	20
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115	85.0	70 to 130	3.79	20
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046	94.5	70 to 130	1.10	20
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115	88.9	70 to 130	5.91	20
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115	90.0	70 to 130	4.56	20
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115	89.5	70 to 130	2.14	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY03500

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY03501

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	J 0.00252	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.297	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	0.109	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	72.4	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		25	323	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	5.4	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	J 0.050	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		5	7.00	25	84	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY03501

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec Limit		
			MB	Limit					Rec	Limit			
AY03501	Calcium, Total	mg/L	-0.00655	0.22	5.00	77.4	77.9	4.94	4.25 to 5.75	98.9	70 to 130	0.728	20
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115	85.7	70 to 130	3.12	20
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115	90.0	70 to 130	4.56	20
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115	89.5	70 to 130	2.14	20
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115	85.0	70 to 130	3.79	20
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046	94.5	70 to 130	1.10	20
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115	88.9	70 to 130	5.91	20
AY03501	Lithium, Total	mg/L	-0.0000351	0.022	0.20	0.217	0.219	0.196	0.17 to 0.23	109	70 to 130	0.812	20
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115	86.8	70 to 130	2.33	20
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115	116	70 to 130	5.49	20
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115	91.6	70 to 130	3.72	20
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115	102	70 to 130	3.19	20
AY03501	Boron, Total	mg/L	-0.00162	0.044	1.00	1.12	1.14	1.00	0.85 to 1.15	101	70 to 130	1.08	20
AY03502	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115	94.2	70 to 130	3.63	20
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115	101	70 to 130	2.66	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY03501

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY03502

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0375	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	J 0.0527	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	50.0	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000640	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	J 0.00221	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		25	367	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	6.1	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		10	14.0	50	200	mg/L

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY03502

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY03502	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.104	0.100	0.085 to 0.115		101	70 to 130		2.66	20
AY03502	Cobalt, Total	mg/L	0.00000901	0.0044	0.10	0.0964	0.1000	0.0976	0.085 to 0.115		94.2	70 to 130		3.63	20
AY03502	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0857	0.0884	0.0900	0.085 to 0.115		85.7	70 to 130		3.12	20
AY03509	Boron, Total	mg/L	-0.000946	0.044	1.00	0.988	0.975	0.991	0.85 to 1.15		98.8	70 to 130		1.26	20
AY03502	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.124	0.127	0.0930	0.085 to 0.115		86.8	70 to 130		2.33	20
AY03502	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.116	0.109	0.114	0.085 to 0.115		116	70 to 130		5.49	20
AY03502	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0916	0.0951	0.0974	0.085 to 0.115		91.6	70 to 130		3.72	20
AY03502	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.102	0.105	0.102	0.085 to 0.115		102	70 to 130		3.19	20
AY03509	Lithium, Total	mg/L	0.0000993	0.022	0.20	0.197	0.196	0.196	0.17 to 0.23		98.5	70 to 130		0.496	20
AY03502	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0900	0.0942	0.0966	0.085 to 0.115		90.0	70 to 130		4.56	20
AY03502	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0902	0.0921	0.0971	0.085 to 0.115		89.5	70 to 130		2.14	20
AY03502	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0850	0.0882	0.0928	0.085 to 0.115		85.0	70 to 130		3.79	20
AY03502	Mercury, Total by CVAA	mg/L	-0.00000444	0.0005	0.004	0.00378	0.00374	0.00373	0.0034 to 0.0046		94.5	70 to 130		1.10	20
AY03502	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0889	0.0943	0.0989	0.085 to 0.115		88.9	70 to 130		5.91	20
AY03509	Calcium, Total	mg/L	0.00563	0.22	5.00	5.05	5.00	4.96	4.25 to 5.75		101	70 to 130		1.11	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY03502

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-12 Dup

Laboratory ID Number: AY03503

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0419	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	J 0.0450	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	50.1	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000650	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	J 0.00240	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		25	374	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	6.2	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		5	7.00	25	160	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-12 Dup

Laboratory ID Number: AY03503

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AY03509	Calcium, Total	mg/L	0.00563	0.22	5.00	5.05	5.00	4.96	4.25 to 5.75	101	70 to 130	1.11	20
AY03509	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.0849	0.0809	0.0930	0.085 to 0.115	84.9	70 to 130	4.88	20
AY03509	Mercury, Total by CVAA	mg/L	-0.00000540	0.0005	0.004	0.00376	0.00375	0.00371	0.0034 to 0.0046	94.0	70 to 130	0.280	20
AY03509	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0920	0.0887	0.0974	0.085 to 0.115	92.0	70 to 130	3.55	20
AY03509	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0935	0.0906	0.0976	0.085 to 0.115	93.5	70 to 130	3.18	20
AY03509	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.100	0.0960	0.102	0.085 to 0.115	100	70 to 130	4.52	20
AY03509	Lithium, Total	mg/L	0.0000993	0.022	0.20	0.197	0.196	0.196	0.17 to 0.23	98.5	70 to 130	0.496	20
AY03509	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.110	0.104	0.114	0.085 to 0.115	110	70 to 130	5.67	20
AY03509	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.0966	0.100	0.085 to 0.115	101	70 to 130	3.97	20
AY03509	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0841	0.0809	0.0928	0.085 to 0.115	84.1	70 to 130	3.88	20
AY03509	Boron, Total	mg/L	-0.000946	0.044	1.00	0.988	0.975	0.991	0.85 to 1.15	98.8	70 to 130	1.26	20
AY03509	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0828	0.0790	0.0900	0.085 to 0.115	82.8	70 to 130	4.65	20
AY03509	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0907	0.0843	0.0989	0.085 to 0.115	90.7	70 to 130	7.29	20
AY03509	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0890	0.0852	0.0966	0.085 to 0.115	89.0	70 to 130	4.40	20
AY03509	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0881	0.0843	0.0971	0.085 to 0.115	88.1	70 to 130	4.44	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-12 Dup

Laboratory ID Number: AY03503

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

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Laboratory certification ID: E571114

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY03504

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0566	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	J 0.0508	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	24.3	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	J 0.00297	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/13/2018	SM 2540C		1		25	122	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	9.5	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	J 0.040	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	11	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY03504

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY03509	Calcium, Total	mg/L	0.00563	0.22	5.00	5.05	5.00	4.96	4.25 to 5.75	101	70 to 130	1.11	20
AY03509	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.100	0.0960	0.102	0.085 to 0.115	100	70 to 130	4.52	20
AY03509	Lithium, Total	mg/L	0.0000993	0.022	0.20	0.197	0.196	0.196	0.17 to 0.23	98.5	70 to 130	0.496	20
AY03509	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0890	0.0852	0.0966	0.085 to 0.115	89.0	70 to 130	4.40	20
AY03509	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0881	0.0843	0.0971	0.085 to 0.115	88.1	70 to 130	4.44	20
AY03509	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.0849	0.0809	0.0930	0.085 to 0.115	84.9	70 to 130	4.88	20
AY03509	Mercury, Total by CVAA	mg/L	-0.00000540	0.0005	0.004	0.00376	0.00375	0.00371	0.0034 to 0.0046	94.0	70 to 130	0.280	20
AY03509	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0841	0.0809	0.0928	0.085 to 0.115	84.1	70 to 130	3.88	20
AY03509	Boron, Total	mg/L	-0.000946	0.044	1.00	0.988	0.975	0.991	0.85 to 1.15	98.8	70 to 130	1.26	20
AY03509	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0828	0.0790	0.0900	0.085 to 0.115	82.8	70 to 130	4.65	20
AY03509	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0907	0.0843	0.0989	0.085 to 0.115	90.7	70 to 130	7.29	20
AY03509	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0920	0.0887	0.0974	0.085 to 0.115	92.0	70 to 130	3.55	20
AY03509	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0935	0.0906	0.0976	0.085 to 0.115	93.5	70 to 130	3.18	20
AY03509	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.110	0.104	0.114	0.085 to 0.115	110	70 to 130	5.67	20
AY03509	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.0966	0.100	0.085 to 0.115	101	70 to 130	3.97	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY03504

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY03504	Solids, Dissolved	mg/L	-2.00	25			120	48.0	40 to 60		0.826	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY03505

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.0756	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	J 0.0787	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	20.1	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/16/2018	SM 2540C		1		25	124	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	6.7	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	J 0.070	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	10	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY03505

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY03509	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0890	0.0852	0.0966	0.085 to 0.115		89.0	70 to 130		4.40	20
AY03509	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0881	0.0843	0.0971	0.085 to 0.115		88.1	70 to 130		4.44	20
AY03509	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.100	0.0960	0.102	0.085 to 0.115		100	70 to 130		4.52	20
AY03509	Lithium, Total	mg/L	0.0000993	0.022	0.20	0.197	0.196	0.196	0.17 to 0.23		98.5	70 to 130		0.496	20
AY03509	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.110	0.104	0.114	0.085 to 0.115		110	70 to 130		5.67	20
AY03509	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.0966	0.100	0.085 to 0.115		101	70 to 130		3.97	20
AY03509	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.0849	0.0809	0.0930	0.085 to 0.115		84.9	70 to 130		4.88	20
AY03509	Mercury, Total by CVAA	mg/L	-0.00000540	0.0005	0.004	0.00376	0.00375	0.00371	0.0034 to 0.0046		94.0	70 to 130		0.280	20
AY03509	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0841	0.0809	0.0928	0.085 to 0.115		84.1	70 to 130		3.88	20
AY03509	Boron, Total	mg/L	-0.000946	0.044	1.00	0.988	0.975	0.991	0.85 to 1.15		98.8	70 to 130		1.26	20
AY03509	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0828	0.0790	0.0900	0.085 to 0.115		82.8	70 to 130		4.65	20
AY03509	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0907	0.0843	0.0989	0.085 to 0.115		90.7	70 to 130		7.29	20
AY03509	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0920	0.0887	0.0974	0.085 to 0.115		92.0	70 to 130		3.55	20
AY03509	Cobalt, Total	mg/L	0.00000901	0.0044	0.10	0.0935	0.0906	0.0976	0.085 to 0.115		93.5	70 to 130		3.18	20
AY03509	Calcium, Total	mg/L	0.00563	0.22	5.00	5.05	5.00	4.96	4.25 to 5.75		101	70 to 130		1.11	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY03505

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec	Limit
								Duplicate	LCS			Limit	Limit			
AY03821	Solids, Dissolved	mg/L	2.00		25			5210	51.0		40 to 60			0.667		5

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Alabama Power General Test Laboratory
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 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY03506

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/16/2018	SM 2540C		1		25	U Not Detected	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	U <0.60	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY03506

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY03509	Calcium, Total	mg/L	0.00563	0.22	5.00	5.05	5.00	4.96	4.25 to 5.75	101	70 to 130	1.11	20
AY03509	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.100	0.0960	0.102	0.085 to 0.115	100	70 to 130	4.52	20
AY03509	Lithium, Total	mg/L	0.0000993	0.022	0.20	0.197	0.196	0.196	0.17 to 0.23	98.5	70 to 130	0.496	20
AY03509	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.0849	0.0809	0.0930	0.085 to 0.115	84.9	70 to 130	4.88	20
AY03509	Mercury, Total by CVAA	mg/L	-0.00000540	0.0005	0.004	0.00376	0.00375	0.00371	0.0034 to 0.0046	94.0	70 to 130	0.280	20
AY03509	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0841	0.0809	0.0928	0.085 to 0.115	84.1	70 to 130	3.88	20
AY03509	Boron, Total	mg/L	-0.000946	0.044	1.00	0.988	0.975	0.991	0.85 to 1.15	98.8	70 to 130	1.26	20
AY03509	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0828	0.0790	0.0900	0.085 to 0.115	82.8	70 to 130	4.65	20
AY03509	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0907	0.0843	0.0989	0.085 to 0.115	90.7	70 to 130	7.29	20
AY03509	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0890	0.0852	0.0966	0.085 to 0.115	89.0	70 to 130	4.40	20
AY03509	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0881	0.0843	0.0971	0.085 to 0.115	88.1	70 to 130	4.44	20
AY03509	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0920	0.0887	0.0974	0.085 to 0.115	92.0	70 to 130	3.55	20
AY03509	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0935	0.0906	0.0976	0.085 to 0.115	93.5	70 to 130	3.18	20
AY03509	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.110	0.104	0.114	0.085 to 0.115	110	70 to 130	5.67	20
AY03509	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.0966	0.100	0.085 to 0.115	101	70 to 130	3.97	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY03506

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY03821	Solids, Dissolved	mg/L	2.00	25			5210	51.0	40 to 60			0.667	5

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CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY03507

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	J 0.00247	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.135	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	J 0.0691	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	58.0	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/16/2018	SM 2540C		1		25	229	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	4.1	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	0.11	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	8.9	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY03507

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY03509	Calcium, Total	mg/L	0.00563	0.22	5.00	5.05	5.00	4.96	4.25 to 5.75	101	70 to 130	1.11	20
AY03509	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.0849	0.0809	0.0930	0.085 to 0.115	84.9	70 to 130	4.88	20
AY03509	Mercury, Total by CVAA	mg/L	-0.00000540	0.0005	0.004	0.00376	0.00375	0.00371	0.0034 to 0.0046	94.0	70 to 130	0.280	20
AY03509	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0920	0.0887	0.0974	0.085 to 0.115	92.0	70 to 130	3.55	20
AY03509	Cobalt, Total	mg/L	0.00000901	0.0044	0.10	0.0935	0.0906	0.0976	0.085 to 0.115	93.5	70 to 130	3.18	20
AY03509	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.100	0.0960	0.102	0.085 to 0.115	100	70 to 130	4.52	20
AY03509	Lithium, Total	mg/L	0.0000993	0.022	0.20	0.197	0.196	0.196	0.17 to 0.23	98.5	70 to 130	0.496	20
AY03509	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.110	0.104	0.114	0.085 to 0.115	110	70 to 130	5.67	20
AY03509	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.0966	0.100	0.085 to 0.115	101	70 to 130	3.97	20
AY03509	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0890	0.0852	0.0966	0.085 to 0.115	89.0	70 to 130	4.40	20
AY03509	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0881	0.0843	0.0971	0.085 to 0.115	88.1	70 to 130	4.44	20
AY03509	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0841	0.0809	0.0928	0.085 to 0.115	84.1	70 to 130	3.88	20
AY03509	Boron, Total	mg/L	-0.000946	0.044	1.00	0.988	0.975	0.991	0.85 to 1.15	98.8	70 to 130	1.26	20
AY03509	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0828	0.0790	0.0900	0.085 to 0.115	82.8	70 to 130	4.65	20
AY03509	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0907	0.0843	0.0989	0.085 to 0.115	90.7	70 to 130	7.29	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY03507

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY03821	Solids, Dissolved	mg/L	2.00	25			5210	51.0	40 to 60		0.667	5

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY03508

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	0.148	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	J 0.0531	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	38.8	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY03508

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AY03509	Calcium, Total	mg/L	0.00563	0.22	5.00	5.05	5.00	4.96	4.25 to 5.75	101	70 to 130	1.11	20
AY03509	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.0849	0.0809	0.0930	0.085 to 0.115	84.9	70 to 130	4.88	20
AY03509	Mercury, Total by CVAA	mg/L	-0.00000540	0.0005	0.004	0.00376	0.00375	0.00371	0.0034 to 0.0046	94.0	70 to 130	0.280	20
AY03509	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.100	0.0960	0.102	0.085 to 0.115	100	70 to 130	4.52	20
AY03509	Lithium, Total	mg/L	0.0000993	0.022	0.20	0.197	0.196	0.196	0.17 to 0.23	98.5	70 to 130	0.496	20
AY03509	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0890	0.0852	0.0966	0.085 to 0.115	89.0	70 to 130	4.40	20
AY03509	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0881	0.0843	0.0971	0.085 to 0.115	88.1	70 to 130	4.44	20
AY03509	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.110	0.104	0.114	0.085 to 0.115	110	70 to 130	5.67	20
AY03509	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.0966	0.100	0.085 to 0.115	101	70 to 130	3.97	20
AY03509	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0841	0.0809	0.0928	0.085 to 0.115	84.1	70 to 130	3.88	20
AY03509	Boron, Total	mg/L	-0.000946	0.044	1.00	0.988	0.975	0.991	0.85 to 1.15	98.8	70 to 130	1.26	20
AY03509	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0828	0.0790	0.0900	0.085 to 0.115	82.8	70 to 130	4.65	20
AY03509	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0907	0.0843	0.0989	0.085 to 0.115	90.7	70 to 130	7.29	20
AY03509	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0920	0.0887	0.0974	0.085 to 0.115	92.0	70 to 130	3.55	20
AY03509	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0935	0.0906	0.0976	0.085 to 0.115	93.5	70 to 130	3.18	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY03508

Sample	Analysis	Units	MB	Limit	Spike	LFM	Sample	LCS	Limit	Rec	Prec
							Duplicate	LCS		Limit	Prec

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY03509

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	HRG	2/20/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/19/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	HRG	2/20/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/15/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	2/16/2018	SM 2540C		1		25	U Not Detected	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	U <0.60	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	U <0.032	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	U <1.4	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY03509

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY03509	Calcium, Total	mg/L	0.00563	0.22	5.00	5.05	5.00	4.96	4.25 to 5.75	101	70 to 130	1.11	20
AY03509	Barium, Total	mg/L	0.00000268	0.0044	0.10	0.0849	0.0809	0.0930	0.085 to 0.115	84.9	70 to 130	4.88	20
AY03509	Mercury, Total by CVAA	mg/L	-0.00000540	0.0005	0.004	0.00376	0.00375	0.00371	0.0034 to 0.0046	94.0	70 to 130	0.280	20
AY03509	Arsenic, Total	mg/L	0.00000756	0.0022	0.10	0.0890	0.0852	0.0966	0.085 to 0.115	89.0	70 to 130	4.40	20
AY03509	Cadmium, Total	mg/L	0.00000178	0.00066	0.10	0.0881	0.0843	0.0971	0.085 to 0.115	88.1	70 to 130	4.44	20
AY03509	Chromium, Total	mg/L	0.0000215	0.0044	0.10	0.0920	0.0887	0.0974	0.085 to 0.115	92.0	70 to 130	3.55	20
AY03509	Cobalt, Total	mg/L	0.000000901	0.0044	0.10	0.0935	0.0906	0.0976	0.085 to 0.115	93.5	70 to 130	3.18	20
AY03509	Antimony, Total	mg/L	0.000105	0.00132	0.10	0.0841	0.0809	0.0928	0.085 to 0.115	84.1	70 to 130	3.88	20
AY03509	Boron, Total	mg/L	-0.000946	0.044	1.00	0.988	0.975	0.991	0.85 to 1.15	98.8	70 to 130	1.26	20
AY03509	Molybdenum, Total	mg/L	0.0000200	0.0044	0.10	0.0828	0.0790	0.0900	0.085 to 0.115	82.8	70 to 130	4.65	20
AY03509	Selenium, Total	mg/L	0.0000436	0.0044	0.10	0.0907	0.0843	0.0989	0.085 to 0.115	90.7	70 to 130	7.29	20
AY03509	Beryllium, Total	mg/L	-0.0000233	0.00132	0.10	0.110	0.104	0.114	0.085 to 0.115	110	70 to 130	5.67	20
AY03509	Thallium, Total	mg/L	0.0000109	0.00044	0.10	0.101	0.0966	0.100	0.085 to 0.115	101	70 to 130	3.97	20
AY03509	Lead, Total	mg/L	0.00000570	0.0022	0.10	0.100	0.0960	0.102	0.085 to 0.115	100	70 to 130	4.52	20
AY03509	Lithium, Total	mg/L	0.0000993	0.022	0.20	0.197	0.196	0.196	0.17 to 0.23	98.5	70 to 130	0.496	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 08-Feb-18
 Customer ID:
 Delivery Date: 09-Feb-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY03509

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY03821	Solids, Dissolved	mg/L	2.00	25			5210	51.0	40 to 60		0.667	5

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Expiration: June 30, 2018

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 12-Feb-18
 Customer ID:
 Delivery Date: 13-Feb-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY03701

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
General Characteristics									
* Solids, Dissolved	CES	2/16/2018	SM 2540C		1		25	201	mg/L
* Chloride, Total, by Test America	SGC	2/27/2018	SM 4500 Cl_E		1	0.60	2.00	6.6	mg/L
* Fluoride, Total, by Test America	SGC	2/27/2018	SM 4500 F_C		1	0.032	0.10	0.11	mg/L
* Sulfate, Total, by Test America	SGC	2/27/2018	SM 4500 SO4_E		1	1.40	5.00	8.3	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 12-Feb-18
 Customer ID:
 Delivery Date: 13-Feb-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY03701

Sample	Analysis	Units	MB	Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
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Alabama Power General Test Laboratory
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 12-Feb-18
 Customer ID:
 Delivery Date: 13-Feb-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY03701

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY03821	Solids, Dissolved	mg/L	2.00	25			5210	51.0	40 to 60		0.667	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: Test America, Pensacola NELAP ID: E81010

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information



Chain of Custody Groundwater

APC General Testing Laboratory
General Service Complex Building 8

- Field Complete
- Lab Complete

Lab ETA 02/08/2018 17:30

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer
Site Representative	Gerson Pickett	Requested By	Greg Dyer
Collector	Ben Rothschadl	Location	Gadsden Ash Pond
Analysis Requested	Bottle 1 (500mL): Metals, Bottle 2 (250mL): Hg, Bottle 3 (500mL): TDS, Bottle 4 (250mL): Anions		
Comments	Groundwater Samples secured in APCO Shipping Lab located in GSC Building 8. Secured samples at 1730 on 08FEB18. AY03508 Bottles 3 & 4 did not maintain required temperature. Anions and TDS will be re-sampled.		

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-1	02/06/2018	09:37	4	Groundwater		AY03493
MW-1 DUP	02/06/2018	09:37	4	Sample Duplicate		AY03494
MW-2	02/06/2018	11:39	4	Groundwater		AY03495
MW-3	02/06/2018	13:05	4	Groundwater		AY03496
MW-4	02/06/2018	14:28	4	Groundwater		AY03497
MW-5	02/06/2018	16:15	4	Groundwater		AY03498
FB-1	02/06/2018	16:40	4	Field Blank		AY03499
MW-10	02/07/2018	12:18	4	Groundwater		AY03500
MW-11	02/07/2018	15:20	4	Groundwater		AY03501
MW-12	02/08/2018	09:19	4	Groundwater		AY03502
MW-12 DUP	02/08/2018	09:19	4	Sample Duplicate		AY03503
MW-6	02/08/2018	11:05	4	Groundwater		AY03504
MW-7	02/08/2018	12:08	4	Groundwater		AY03505
FB-2	02/08/2018	12:20	4	Field Blank		AY03506
MW-8	02/08/2018	13:17	4	Groundwater		AY03507
MW-9	02/08/2018	14:11	4	Groundwater		AY03508
EB-1	02/08/2018	14:45	4	Equipment Blank		AY03509

Relinquished By	Received By	Date/Time
	Sarah Copeland <small>Digitally signed by Sarah Copeland DN: cn=Sarah Copeland, o.ou, email=sgcopela@southerncco.com, c=US Date: 2018.02.09 09:25:18 -0600</small>	02/09/2018 09:25

SmarTroll ID	6496-34170-1-1	All metals and radiological bottles have pH < 2 <input checked="" type="checkbox"/>
Turbidity ID	3901-20009-2-1	Cooler Temp
		0.3 degrees C
		Thermometer ID
		5408-27568-2-2
		pH Strip ID
		5881-30151-10-5



Chain of Custody
Groundwater
 APC General Testing Laboratory
 General Service Complex Building 8

- Field Complete
- Lab Complete

Lab ETA 02/08/2018 17:30

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer
Site Representative	Gerson Pickett	Requested By	Greg Dyer
Collector	Ben Rothschadl	Location	Gadsden Ash Pond
Analysis Requested	Bottle 1 (1L): Radiological		
Comments	Radium Duplicate collected at MW-2 Groundwater Samples secured in APCO Shipping Lab located in GSC Building 8. Secured samples at 1730 on 08FEB18. Samples received from shipping lab. There is no temperature preservation requirement for Radium.		

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-1	02/06/2018	09:37	1	Groundwater		AY03510
MW-1 DUP	02/06/2018	09:37	1	Sample Duplicate		AY03511
MW-2	02/06/2018	11:39	3	Groundwater		AY03512
MW-3	02/06/2018	13:05	1	Groundwater		AY03513
MW-4	02/06/2018	14:28	1	Groundwater		AY03514
MW-5	02/06/2018	16:15	1	Groundwater		AY03515
FB-1	02/06/2018	16:40	1	Field Blank		AY03516
MW-10	02/07/2018	12:18	1	Groundwater		AY03517
MW-11	02/07/2018	15:20	1	Groundwater		AY03518
MW-12	02/08/2018	09:19	1	Groundwater		AY03519
MW-12 DUP	02/08/2018	09:19	1	Sample Duplicate		AY03520
MW-6	02/08/2018	11:05	1	Groundwater		AY03521
MW-7	02/08/2018	12:08	1	Groundwater		AY03522
FB-2	02/08/2018	12:20	1	Field Blank		AY03523
MW-8	02/08/2018	13:17	1	Groundwater		AY03524
MW-9	02/08/2018	14:11	1	Groundwater		AY03525
EB-1	02/08/2018	14:45	1	Equipment Blank		AY03526

Relinquished By	Received By	Date/Time
	Sarah Copeland <small>Digitally signed by Sarah Copeland DN: cn=Sarah Copeland, o.ou, email=sgcopela@southernmco.com, c=US Date: 2018.02.09 09:26:36 -0600</small>	02/09/2018 09:26

SmarTroll ID	6496-34170-1-1	All metals and radiological bottles have pH < 2 <input checked="" type="checkbox"/>
Turbidity ID	3901-20009-2-1	Cooler Temp
		NA
		Thermometer ID
		NA
		pH Strip ID
		5881-30151-10-5

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: 400-149708-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1133

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

2/22/2018 6:25:24 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Job ID: 400-149708-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-149708-1

General Chemistry

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 387042 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: AY03493 MW-1 (400-149708-1), AY03494 MW-1 DUP (400-149708-2), AY03495 MW-2 (400-149708-3), AY03496 MW-3 (400-149708-4), (400-149708-A-1 MS) and (400-149708-A-1 MSD). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 387307 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: AY03501 MW-11 (400-149708-9), AY03501 MW-11 (400-149708-9[MS]), AY03501 MW-11 (400-149708-9[MSD]), AY03502 MW-12 (400-149708-10) and AY03503 MW-12 DUP (400-149708-11). Elevated reporting limits (RLs) are provided.

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03493 MW-1

Lab Sample ID: 400-149708-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.9		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	560	F1	100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03494 MW-1 DUP

Lab Sample ID: 400-149708-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.0		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	550		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03495 MW-2

Lab Sample ID: 400-149708-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.27		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	190		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03496 MW-3

Lab Sample ID: 400-149708-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.6		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	230		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03497 MW-4

Lab Sample ID: 400-149708-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.8		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.24		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY03498 MW-5

Lab Sample ID: 400-149708-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.5		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	20		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03499 FB-1

Lab Sample ID: 400-149708-7

No Detections.

Client Sample ID: AY03500 MW-10

Lab Sample ID: 400-149708-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	19		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03501 MW-11

Lab Sample ID: 400-149708-9

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03501 MW-11 (Continued)

Lab Sample ID: 400-149708-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.4		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	84	F1	25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03502 MW-12

Lab Sample ID: 400-149708-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	200		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03503 MW-12 DUP

Lab Sample ID: 400-149708-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.2		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	160		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03504 MW-6

Lab Sample ID: 400-149708-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.5		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	11		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03505 MW-7

Lab Sample ID: 400-149708-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.7		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	10		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03506 FB-2

Lab Sample ID: 400-149708-14

No Detections.

Client Sample ID: AY03507 MW-8

Lab Sample ID: 400-149708-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.11		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	8.9		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY03509 EB-1

Lab Sample ID: 400-149708-16

No Detections.

Client Sample ID: AY03701 MW-9

Lab Sample ID: 400-149708-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.6		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.11		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	8.3		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-149708-1	AY03493 MW-1	Water	02/06/18 09:37	02/14/18 16:20
400-149708-2	AY03494 MW-1 DUP	Water	02/06/18 09:37	02/14/18 16:20
400-149708-3	AY03495 MW-2	Water	02/06/18 11:39	02/14/18 16:20
400-149708-4	AY03496 MW-3	Water	02/06/18 13:05	02/14/18 16:20
400-149708-5	AY03497 MW-4	Water	02/06/18 14:28	02/14/18 16:20
400-149708-6	AY03498 MW-5	Water	02/06/18 16:15	02/14/18 16:20
400-149708-7	AY03499 FB-1	Water	02/06/18 16:40	02/14/18 16:20
400-149708-8	AY03500 MW-10	Water	02/07/18 12:18	02/14/18 16:20
400-149708-9	AY03501 MW-11	Water	02/07/18 15:20	02/14/18 16:20
400-149708-10	AY03502 MW-12	Water	02/08/18 09:19	02/14/18 16:20
400-149708-11	AY03503 MW-12 DUP	Water	02/08/18 09:19	02/14/18 16:20
400-149708-12	AY03504 MW-6	Water	02/08/18 11:05	02/14/18 16:20
400-149708-13	AY03505 MW-7	Water	02/08/18 12:08	02/14/18 16:20
400-149708-14	AY03506 FB-2	Water	02/08/18 12:20	02/14/18 16:20
400-149708-15	AY03507 MW-8	Water	02/08/18 13:17	02/14/18 16:20
400-149708-16	AY03509 EB-1	Water	02/08/18 14:45	02/14/18 16:20
400-149708-17	AY03701 MW-9	Water	02/12/18 15:48	02/14/18 16:20

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03493 MW-1

Lab Sample ID: 400-149708-1

Date Collected: 02/06/18 09:37

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.9		2.0	0.60	mg/L			02/20/18 10:11	1
Fluoride	0.080	J	0.10	0.032	mg/L			02/21/18 11:43	1
Sulfate	560	F1	100	28	mg/L			02/19/18 13:08	20

Client Sample ID: AY03494 MW-1 DUP

Lab Sample ID: 400-149708-2

Date Collected: 02/06/18 09:37

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.0		2.0	0.60	mg/L			02/20/18 10:11	1
Fluoride	0.080	J	0.10	0.032	mg/L			02/21/18 11:19	1
Sulfate	550		100	28	mg/L			02/19/18 13:11	20

Client Sample ID: AY03495 MW-2

Lab Sample ID: 400-149708-3

Date Collected: 02/06/18 11:39

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.1		2.0	0.60	mg/L			02/20/18 10:11	1
Fluoride	0.27		0.10	0.032	mg/L			02/21/18 11:21	1
Sulfate	190		50	14	mg/L			02/19/18 14:07	10

Client Sample ID: AY03496 MW-3

Lab Sample ID: 400-149708-4

Date Collected: 02/06/18 13:05

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.6		2.0	0.60	mg/L			02/20/18 10:11	1
Fluoride	0.080	J	0.10	0.032	mg/L			02/21/18 11:23	1
Sulfate	230		50	14	mg/L			02/19/18 14:07	10

Client Sample ID: AY03497 MW-4

Lab Sample ID: 400-149708-5

Date Collected: 02/06/18 14:28

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.8		2.0	0.60	mg/L			02/20/18 10:11	1
Fluoride	0.24		0.10	0.032	mg/L			02/21/18 11:26	1
Sulfate	<1.4		5.0	1.4	mg/L			02/19/18 12:38	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03498 MW-5

Lab Sample ID: 400-149708-6

Date Collected: 02/06/18 16:15

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.5		2.0	0.60	mg/L			02/20/18 10:11	1
Fluoride	0.050	J	0.10	0.032	mg/L			02/21/18 11:28	1
Sulfate	20		5.0	1.4	mg/L			02/19/18 12:38	1

Client Sample ID: AY03499 FB-1

Lab Sample ID: 400-149708-7

Date Collected: 02/06/18 16:40

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			02/20/18 10:12	1
Fluoride	<0.032		0.10	0.032	mg/L			02/21/18 11:32	1
Sulfate	<1.4		5.0	1.4	mg/L			02/21/18 08:06	1

Client Sample ID: AY03500 MW-10

Lab Sample ID: 400-149708-8

Date Collected: 02/07/18 12:18

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.1		2.0	0.60	mg/L			02/20/18 10:12	1
Fluoride	0.080	J	0.10	0.032	mg/L			02/21/18 11:34	1
Sulfate	19		5.0	1.4	mg/L			02/21/18 08:06	1

Client Sample ID: AY03501 MW-11

Lab Sample ID: 400-149708-9

Date Collected: 02/07/18 15:20

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.4		2.0	0.60	mg/L			02/20/18 09:51	1
Fluoride	0.050	J	0.10	0.032	mg/L			02/21/18 11:12	1
Sulfate	84	F1	25	7.0	mg/L			02/21/18 08:36	5

Client Sample ID: AY03502 MW-12

Lab Sample ID: 400-149708-10

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.1		2.0	0.60	mg/L			02/20/18 11:06	1
Fluoride	<0.032		0.10	0.032	mg/L			02/21/18 11:48	1
Sulfate	200		50	14	mg/L			02/21/18 08:52	10

Client Sample ID: AY03503 MW-12 DUP

Lab Sample ID: 400-149708-11

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.2		2.0	0.60	mg/L			02/20/18 11:06	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03503 MW-12 DUP

Lab Sample ID: 400-149708-11

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			02/21/18 11:50	1
Sulfate	160		25	7.0	mg/L			02/21/18 08:39	5

Client Sample ID: AY03504 MW-6

Lab Sample ID: 400-149708-12

Date Collected: 02/08/18 11:05

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.5		2.0	0.60	mg/L			02/20/18 11:06	1
Fluoride	0.040	J	0.10	0.032	mg/L			02/21/18 11:52	1
Sulfate	11		5.0	1.4	mg/L			02/21/18 08:06	1

Client Sample ID: AY03505 MW-7

Lab Sample ID: 400-149708-13

Date Collected: 02/08/18 12:08

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.7		2.0	0.60	mg/L			02/20/18 11:09	1
Fluoride	0.070	J	0.10	0.032	mg/L			02/21/18 11:55	1
Sulfate	10		5.0	1.4	mg/L			02/21/18 08:06	1

Client Sample ID: AY03506 FB-2

Lab Sample ID: 400-149708-14

Date Collected: 02/08/18 12:20

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			02/20/18 11:09	1
Fluoride	<0.032		0.10	0.032	mg/L			02/21/18 11:59	1
Sulfate	<1.4		5.0	1.4	mg/L			02/21/18 08:06	1

Client Sample ID: AY03507 MW-8

Lab Sample ID: 400-149708-15

Date Collected: 02/08/18 13:17

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		2.0	0.60	mg/L			02/20/18 11:09	1
Fluoride	0.11		0.10	0.032	mg/L			02/21/18 12:01	1
Sulfate	8.9		5.0	1.4	mg/L			02/21/18 08:08	1

Client Sample ID: AY03509 EB-1

Lab Sample ID: 400-149708-16

Date Collected: 02/08/18 14:45

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			02/20/18 11:09	1
Fluoride	<0.032		0.10	0.032	mg/L			02/21/18 12:05	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03509 EB-1

Lab Sample ID: 400-149708-16

Date Collected: 02/08/18 14:45

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			02/21/18 08:08	1

Client Sample ID: AY03701 MW-9

Lab Sample ID: 400-149708-17

Date Collected: 02/12/18 15:48

Matrix: Water

Date Received: 02/14/18 16:20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.6		2.0	0.60	mg/L			02/20/18 11:09	1
Fluoride	0.11		0.10	0.032	mg/L			02/21/18 12:08	1
Sulfate	8.3		5.0	1.4	mg/L			02/21/18 08:30	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03493 MW-1

Lab Sample ID: 400-149708-1

Date Collected: 02/06/18 09:37

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 10:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:43	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	387042	02/19/18 13:08	RRC	TAL PEN

Client Sample ID: AY03494 MW-1 DUP

Lab Sample ID: 400-149708-2

Date Collected: 02/06/18 09:37

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 10:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:19	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	387042	02/19/18 13:11	RRC	TAL PEN

Client Sample ID: AY03495 MW-2

Lab Sample ID: 400-149708-3

Date Collected: 02/06/18 11:39

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 10:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:21	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	387042	02/19/18 14:07	RRC	TAL PEN

Client Sample ID: AY03496 MW-3

Lab Sample ID: 400-149708-4

Date Collected: 02/06/18 13:05

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 10:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:23	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	387042	02/19/18 14:07	RRC	TAL PEN

Client Sample ID: AY03497 MW-4

Lab Sample ID: 400-149708-5

Date Collected: 02/06/18 14:28

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 10:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:26	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387042	02/19/18 12:38	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03498 MW-5

Lab Sample ID: 400-149708-6

Date Collected: 02/06/18 16:15

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 10:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:28	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387042	02/19/18 12:38	RRC	TAL PEN

Client Sample ID: AY03499 FB-1

Lab Sample ID: 400-149708-7

Date Collected: 02/06/18 16:40

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 10:12	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:32	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387307	02/21/18 08:06	RRC	TAL PEN

Client Sample ID: AY03500 MW-10

Lab Sample ID: 400-149708-8

Date Collected: 02/07/18 12:18

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 10:12	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:34	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387307	02/21/18 08:06	RRC	TAL PEN

Client Sample ID: AY03501 MW-11

Lab Sample ID: 400-149708-9

Date Collected: 02/07/18 15:20

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387168	02/20/18 09:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:12	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	387307	02/21/18 08:36	RRC	TAL PEN

Client Sample ID: AY03502 MW-12

Lab Sample ID: 400-149708-10

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387191	02/20/18 11:06	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:48	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	387307	02/21/18 08:52	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03503 MW-12 DUP

Lab Sample ID: 400-149708-11

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387191	02/20/18 11:06	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:50	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	387307	02/21/18 08:39	RRC	TAL PEN

Client Sample ID: AY03504 MW-6

Lab Sample ID: 400-149708-12

Date Collected: 02/08/18 11:05

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387191	02/20/18 11:06	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:52	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387307	02/21/18 08:06	RRC	TAL PEN

Client Sample ID: AY03505 MW-7

Lab Sample ID: 400-149708-13

Date Collected: 02/08/18 12:08

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387191	02/20/18 11:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387307	02/21/18 08:06	RRC	TAL PEN

Client Sample ID: AY03506 FB-2

Lab Sample ID: 400-149708-14

Date Collected: 02/08/18 12:20

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387191	02/20/18 11:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 11:59	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387307	02/21/18 08:06	RRC	TAL PEN

Client Sample ID: AY03507 MW-8

Lab Sample ID: 400-149708-15

Date Collected: 02/08/18 13:17

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387191	02/20/18 11:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 12:01	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387307	02/21/18 08:08	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03509 EB-1

Lab Sample ID: 400-149708-16

Date Collected: 02/08/18 14:45

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387191	02/20/18 11:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 12:05	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387307	02/21/18 08:08	RRC	TAL PEN

Client Sample ID: AY03701 MW-9

Lab Sample ID: 400-149708-17

Date Collected: 02/12/18 15:48

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	387191	02/20/18 11:09	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	387374	02/21/18 12:08	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	387307	02/21/18 08:30	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

General Chemistry

Analysis Batch: 387042

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-149708-1	AY03493 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-149708-2	AY03494 MW-1 DUP	Total/NA	Water	SM 4500 SO4 E	
400-149708-3	AY03495 MW-2	Total/NA	Water	SM 4500 SO4 E	
400-149708-4	AY03496 MW-3	Total/NA	Water	SM 4500 SO4 E	
400-149708-5	AY03497 MW-4	Total/NA	Water	SM 4500 SO4 E	
400-149708-6	AY03498 MW-5	Total/NA	Water	SM 4500 SO4 E	
MB 400-387042/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-387042/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-387042/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-149708-1 MS	AY03493 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-149708-1 MSD	AY03493 MW-1	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 387168

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-149708-1	AY03493 MW-1	Total/NA	Water	SM 4500 Cl- E	
400-149708-2	AY03494 MW-1 DUP	Total/NA	Water	SM 4500 Cl- E	
400-149708-3	AY03495 MW-2	Total/NA	Water	SM 4500 Cl- E	
400-149708-4	AY03496 MW-3	Total/NA	Water	SM 4500 Cl- E	
400-149708-5	AY03497 MW-4	Total/NA	Water	SM 4500 Cl- E	
400-149708-6	AY03498 MW-5	Total/NA	Water	SM 4500 Cl- E	
400-149708-7	AY03499 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-149708-8	AY03500 MW-10	Total/NA	Water	SM 4500 Cl- E	
400-149708-9	AY03501 MW-11	Total/NA	Water	SM 4500 Cl- E	
MB 400-387168/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-387168/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-387168/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-149708-9 MS	AY03501 MW-11	Total/NA	Water	SM 4500 Cl- E	
400-149708-9 MSD	AY03501 MW-11	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 387191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-149708-10	AY03502 MW-12	Total/NA	Water	SM 4500 Cl- E	
400-149708-11	AY03503 MW-12 DUP	Total/NA	Water	SM 4500 Cl- E	
400-149708-12	AY03504 MW-6	Total/NA	Water	SM 4500 Cl- E	
400-149708-13	AY03505 MW-7	Total/NA	Water	SM 4500 Cl- E	
400-149708-14	AY03506 FB-2	Total/NA	Water	SM 4500 Cl- E	
400-149708-15	AY03507 MW-8	Total/NA	Water	SM 4500 Cl- E	
400-149708-16	AY03509 EB-1	Total/NA	Water	SM 4500 Cl- E	
400-149708-17	AY03701 MW-9	Total/NA	Water	SM 4500 Cl- E	
MB 400-387191/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-387191/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-387191/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-149708-10 MS	AY03502 MW-12	Total/NA	Water	SM 4500 Cl- E	
400-149708-10 MSD	AY03502 MW-12	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 387307

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-149708-7	AY03499 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-149708-8	AY03500 MW-10	Total/NA	Water	SM 4500 SO4 E	
400-149708-9	AY03501 MW-11	Total/NA	Water	SM 4500 SO4 E	
400-149708-10	AY03502 MW-12	Total/NA	Water	SM 4500 SO4 E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
SDG: Gadsden Ash Pond 1133

General Chemistry (Continued)

Analysis Batch: 387307 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-149708-11	AY03503 MW-12 DUP	Total/NA	Water	SM 4500 SO4 E	
400-149708-12	AY03504 MW-6	Total/NA	Water	SM 4500 SO4 E	
400-149708-13	AY03505 MW-7	Total/NA	Water	SM 4500 SO4 E	
400-149708-14	AY03506 FB-2	Total/NA	Water	SM 4500 SO4 E	
400-149708-15	AY03507 MW-8	Total/NA	Water	SM 4500 SO4 E	
400-149708-16	AY03509 EB-1	Total/NA	Water	SM 4500 SO4 E	
400-149708-17	AY03701 MW-9	Total/NA	Water	SM 4500 SO4 E	
MB 400-387307/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-387307/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-387307/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-149708-9 MS	AY03501 MW-11	Total/NA	Water	SM 4500 SO4 E	
400-149708-9 MSD	AY03501 MW-11	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 387374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-149708-1	AY03493 MW-1	Total/NA	Water	SM 4500 F C	
400-149708-2	AY03494 MW-1 DUP	Total/NA	Water	SM 4500 F C	
400-149708-3	AY03495 MW-2	Total/NA	Water	SM 4500 F C	
400-149708-4	AY03496 MW-3	Total/NA	Water	SM 4500 F C	
400-149708-5	AY03497 MW-4	Total/NA	Water	SM 4500 F C	
400-149708-6	AY03498 MW-5	Total/NA	Water	SM 4500 F C	
400-149708-7	AY03499 FB-1	Total/NA	Water	SM 4500 F C	
400-149708-8	AY03500 MW-10	Total/NA	Water	SM 4500 F C	
400-149708-9	AY03501 MW-11	Total/NA	Water	SM 4500 F C	
400-149708-10	AY03502 MW-12	Total/NA	Water	SM 4500 F C	
400-149708-11	AY03503 MW-12 DUP	Total/NA	Water	SM 4500 F C	
400-149708-12	AY03504 MW-6	Total/NA	Water	SM 4500 F C	
400-149708-13	AY03505 MW-7	Total/NA	Water	SM 4500 F C	
400-149708-14	AY03506 FB-2	Total/NA	Water	SM 4500 F C	
400-149708-15	AY03507 MW-8	Total/NA	Water	SM 4500 F C	
400-149708-16	AY03509 EB-1	Total/NA	Water	SM 4500 F C	
400-149708-17	AY03701 MW-9	Total/NA	Water	SM 4500 F C	
MB 400-387374/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-387374/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-149708-9 MS	AY03501 MW-11	Total/NA	Water	SM 4500 F C	
400-149708-9 MSD	AY03501 MW-11	Total/NA	Water	SM 4500 F C	
400-149708-1 DU	AY03493 MW-1	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-387168/6
Matrix: Water
Analysis Batch: 387168

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			02/20/18 09:30	1

Lab Sample ID: LCS 400-387168/7
Matrix: Water
Analysis Batch: 387168

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.0		mg/L		107	90 - 110

Lab Sample ID: MRL 400-387168/3
Matrix: Water
Analysis Batch: 387168

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.44	J	mg/L		72	50 - 150

Lab Sample ID: 400-149708-9 MS
Matrix: Water
Analysis Batch: 387168

Client Sample ID: AY03501 MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.4		10.0	17.2		mg/L		117	73 - 120

Lab Sample ID: 400-149708-9 MSD
Matrix: Water
Analysis Batch: 387168

Client Sample ID: AY03501 MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	5.4		10.0	17.1		mg/L		117	73 - 120	0	8

Lab Sample ID: MB 400-387191/6
Matrix: Water
Analysis Batch: 387191

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			02/20/18 11:06	1

Lab Sample ID: LCS 400-387191/7
Matrix: Water
Analysis Batch: 387191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.7		mg/L		109	90 - 110

Lab Sample ID: MRL 400-387191/3
Matrix: Water
Analysis Batch: 387191

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.50	J	mg/L		75	50 - 150

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Lab Sample ID: 400-149708-10 MS
Matrix: Water
Analysis Batch: 387191

Client Sample ID: AY03502 MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.1		10.0	17.9		mg/L		118	73 - 120

Lab Sample ID: 400-149708-10 MSD
Matrix: Water
Analysis Batch: 387191

Client Sample ID: AY03502 MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	6.1		10.0	17.9		mg/L		118	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-387374/3
Matrix: Water
Analysis Batch: 387374

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			02/21/18 11:02	1

Lab Sample ID: LCS 400-387374/4
Matrix: Water
Analysis Batch: 387374

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.94		mg/L		99	90 - 110

Lab Sample ID: 400-149708-9 MS
Matrix: Water
Analysis Batch: 387374

Client Sample ID: AY03501 MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.050	J	1.00	1.08		mg/L		103	75 - 125

Lab Sample ID: 400-149708-9 MSD
Matrix: Water
Analysis Batch: 387374

Client Sample ID: AY03501 MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.050	J	1.00	1.08		mg/L		103	75 - 125	0	4

Lab Sample ID: 400-149708-1 DU
Matrix: Water
Analysis Batch: 387374

Client Sample ID: AY03493 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.080	J	0.0800	J	mg/L		0	4

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-387042/6
Matrix: Water
Analysis Batch: 387042

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			02/19/18 10:42	1

Lab Sample ID: LCS 400-387042/7
Matrix: Water
Analysis Batch: 387042

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.4		mg/L		96	90 - 110

Lab Sample ID: MRL 400-387042/3
Matrix: Water
Analysis Batch: 387042

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.73	J	mg/L		75	50 - 150

Lab Sample ID: 400-149708-1 MS
Matrix: Water
Analysis Batch: 387042

Client Sample ID: AY03493 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	560	F1	200	540	F1	mg/L		-10	77 - 128

Lab Sample ID: 400-149708-1 MSD
Matrix: Water
Analysis Batch: 387042

Client Sample ID: AY03493 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	560	F1	200	539	F1	mg/L		-11	77 - 128	0	5

Lab Sample ID: MB 400-387307/6
Matrix: Water
Analysis Batch: 387307

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			02/21/18 07:25	1

Lab Sample ID: LCS 400-387307/7
Matrix: Water
Analysis Batch: 387307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.6		mg/L		97	90 - 110

Lab Sample ID: MRL 400-387307/3
Matrix: Water
Analysis Batch: 387307

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.77	J	mg/L		75	50 - 150

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

Lab Sample ID: 400-149708-9 MS
Matrix: Water
Analysis Batch: 387307

Client Sample ID: AY03501 MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	84	F1	50.0	90.0	F1	mg/L		12	77 - 128

Lab Sample ID: 400-149708-9 MSD
Matrix: Water
Analysis Batch: 387307

Client Sample ID: AY03501 MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	84	F1	50.0	88.3	F1	mg/L		8	77 - 128	2	5

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Chain of Custody Record

Client Information		Sampler: Ben Rothschild		Lab PM: Whitmire, Cheyenne R		Carrier Tracking No(s): 400-56525-24537.1				
Client Contact: Sarah Copeland		Phone:		E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 2				
Company: Alabama Power General Test Laboratory		Due Date Requested:		Analysis Requested		Job #:				
Address: 744 County Rd 87 GSC #8		TAT Requested (days): Routine		Performs MS/MSD (Yes or No)		Total Number of containers				
City: Calera		PO #:		Field Filtered Sample (Yes or No)		Preservation Codes:				
State, Zip: AL, 35040		WO #:		SM 4500 F_C		A - HCL M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)				
Phone: 205-664-6121(Tel)		Project #:		SM 4500 Cl_E		Other:				
Email: sgcopela@southernco.com		CCR		SM 4500 SO4_E		Special Instructions/Note:				
Site: Gadsden Ash Pond 1133		SSOW#:		N		MW-1 MW-1 Dup (Sample Duplicate) MW-2 MW-3 MW-4 MW-5 FB-1 (Field Blank) MW-10 MW-11				
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=BIOSUB, AA=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Performs MS/MSD (Yes or No)	SM 4500 F_C	SM 4500 Cl_E	SM 4500 SO4_E
AY03493	2/6/18	0937	G	Water		X	X	X	X	X
AY03494	2/6/18	0937	G	Water		X	X	X	X	X
AY03495	2/6/18	1139	G	Water		X	X	X	X	X
AY03496	2/6/18	1305	G	Water		X	X	X	X	X
AY03497	2/6/18	1428	G	Water		X	X	X	X	X
AY03498	2/6/18	1615	G	Water		X	X	X	X	X
AY03499	2/6/18	1640	G	Water		X	X	X	X	X
AY03500	2/7/18	1218	G	Water		X	X	X	X	X
AY03501	2/7/18	1520	G	Water		Y	X	X	X	X
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)										
Empty Kit Relinquished by: _____ Date: _____ Relinquished by: Sarah Copeland Date/Time: 2/15/2018, 1130 Company: APC Relinquished by: _____ Date/Time: _____ Company: _____ Relinquished by: _____ Date/Time: _____ Company: _____										
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks: 5.6°C SAR 7										



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-149708-1
SDG Number: Gadsden Ash Pond 1133

Login Number: 149708

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	5.6°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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149708-1
 SDG: Gadsden Ash Pond 1133

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	06-30-18
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
Illinois	NELAP	5	200041	10-09-18
Iowa	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
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (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	12-30-17 *
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
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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: 400-149709-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1133

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

3/15/2018 2:19:01 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
SDG: Gadsden Ash Pond 1133

Job ID: 400-149709-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-149709-1

RAD

Method(s) PrecSep-21: Radium 226 Prep Batch 160-352115. Insufficient sample volume was available to perform a sample duplicate (DU). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision. Sample aliquots reduced due to limited sample volume. AY03510 MW-1 (400-149709-1), AY03511 MW-1 DUP (400-149709-2), AY03512 MW-2 (400-149709-3), AY03512 MW-2 (400-149709-3[DU]), AY03513 MW-3 (400-149709-4), AY03514 MW-4 (400-149709-5), AY03515 MW-5 (400-149709-6), AY03516 FB-1 (400-149709-7), AY03517 MW-10 (400-149709-8), AY03518 MW-11 (400-149709-9), AY03519 MW-12 (400-149709-10), AY03520 MW-12 DUP (400-149709-11), AY03521 MW-6 (400-149709-12), AY03522 MW-7 (400-149709-13), AY03523 FB-2 (400-149709-14), AY03524 MW-8 (400-149709-15), AY03525 MW-9 (400-149709-16) and AY03526 EB-1 (400-149709-17)

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
SDG: Gadsden Ash Pond 1133

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

Protocol References:

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
SDG: Gadsden Ash Pond 1133

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-149709-1	AY03510 MW-1	Water	02/06/18 09:37	02/14/18 16:20
400-149709-2	AY03511 MW-1 DUP	Water	02/06/18 09:37	02/14/18 16:20
400-149709-3	AY03512 MW-2	Water	02/06/18 11:39	02/14/18 16:20
400-149709-4	AY03513 MW-3	Water	02/06/18 13:05	02/14/18 16:20
400-149709-5	AY03514 MW-4	Water	02/06/18 14:28	02/14/18 16:20
400-149709-6	AY03515 MW-5	Water	02/06/18 16:15	02/14/18 16:20
400-149709-7	AY03516 FB-1	Water	02/06/18 16:40	02/14/18 16:20
400-149709-8	AY03517 MW-10	Water	02/07/18 12:18	02/14/18 16:20
400-149709-9	AY03518 MW-11	Water	02/07/18 15:20	02/14/18 16:20
400-149709-10	AY03519 MW-12	Water	02/08/18 09:19	02/14/18 16:20
400-149709-11	AY03520 MW-12 DUP	Water	02/08/18 09:19	02/14/18 16:20
400-149709-12	AY03521 MW-6	Water	02/08/18 11:05	02/14/18 16:20
400-149709-13	AY03522 MW-7	Water	02/08/18 12:08	02/14/18 16:20
400-149709-14	AY03523 FB-2	Water	02/08/18 12:20	02/14/18 16:20
400-149709-15	AY03524 MW-8	Water	02/08/18 13:17	02/14/18 16:20
400-149709-16	AY03525 MW-9	Water	02/08/18 14:11	02/14/18 16:20
400-149709-17	AY03526 EB-1	Water	02/08/18 14:45	02/14/18 16:20

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03510 MW-1

Lab Sample ID: 400-149709-1

Date Collected: 02/06/18 09:37

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.158		0.101	0.102	1.00	0.138	pCi/L	02/20/18 10:01	03/14/18 05:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					02/20/18 10:01	03/14/18 05:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.483		0.281	0.285	1.00	0.425	pCi/L	02/20/18 10:25	03/06/18 14:21	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	108		40 - 110					02/20/18 10:25	03/06/18 14:21	1
Y Carrier	93.5		40 - 110					02/20/18 10:25	03/06/18 14:21	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.641		0.299	0.303	5.00	0.425	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03511 MW-1 DUP

Lab Sample ID: 400-149709-2

Date Collected: 02/06/18 09:37

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.147		0.0987	0.0996	1.00	0.133	pCi/L	02/20/18 10:01	03/14/18 05:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					02/20/18 10:01	03/14/18 05:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.145	U	0.256	0.257	1.00	0.435	pCi/L	02/20/18 10:25	03/06/18 14:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					02/20/18 10:25	03/06/18 14:22	1
Y Carrier	92.3		40 - 110					02/20/18 10:25	03/06/18 14:22	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.293	U	0.274	0.276	5.00	0.435	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03512 MW-2

Lab Sample ID: 400-149709-3

Date Collected: 02/06/18 11:39

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.178		0.0994	0.101	1.00	0.116	pCi/L	02/20/18 10:01	03/14/18 05:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					02/20/18 10:01	03/14/18 05:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.501		0.309	0.313	1.00	0.472	pCi/L	02/20/18 10:25	03/06/18 14:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					02/20/18 10:25	03/06/18 14:22	1
Y Carrier	90.1		40 - 110					02/20/18 10:25	03/06/18 14:22	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.679		0.325	0.329	5.00	0.472	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03513 MW-3

Lab Sample ID: 400-149709-4

Date Collected: 02/06/18 13:05

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.155		0.0859	0.0870	1.00	0.0917	pCi/L	02/20/18 10:01	03/14/18 05:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/20/18 10:01	03/14/18 05:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0537	U	0.286	0.286	1.00	0.500	pCi/L	02/20/18 10:25	03/06/18 14:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/20/18 10:25	03/06/18 14:22	1
Y Carrier	96.8		40 - 110					02/20/18 10:25	03/06/18 14:22	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.209	U	0.299	0.299	5.00	0.500	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03514 MW-4

Lab Sample ID: 400-149709-5

Date Collected: 02/06/18 14:28

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.504		0.154	0.160	1.00	0.103	pCi/L	02/20/18 10:01	03/14/18 05:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					02/20/18 10:01	03/14/18 05:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.484		0.249	0.253	1.00	0.364	pCi/L	02/20/18 10:25	03/06/18 14:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	109		40 - 110					02/20/18 10:25	03/06/18 14:32	1
Y Carrier	96.8		40 - 110					02/20/18 10:25	03/06/18 14:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.989		0.293	0.299	5.00	0.364	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03515 MW-5

Lab Sample ID: 400-149709-6

Date Collected: 02/06/18 16:15

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.130		0.0927	0.0934	1.00	0.129	pCi/L	02/20/18 10:01	03/14/18 05:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					02/20/18 10:01	03/14/18 05:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.394	U	0.281	0.283	1.00	0.438	pCi/L	02/20/18 10:25	03/06/18 14:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					02/20/18 10:25	03/06/18 14:32	1
Y Carrier	93.1		40 - 110					02/20/18 10:25	03/06/18 14:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.524		0.296	0.298	5.00	0.438	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03516 FB-1

Lab Sample ID: 400-149709-7

Date Collected: 02/06/18 16:40

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0143	U	0.0560	0.0560	1.00	0.112	pCi/L	02/20/18 10:01	03/14/18 05:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/20/18 10:01	03/14/18 05:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.124	U	0.251	0.251	1.00	0.472	pCi/L	02/20/18 10:25	03/06/18 14:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/20/18 10:25	03/06/18 14:32	1
Y Carrier	90.1		40 - 110					02/20/18 10:25	03/06/18 14:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.110	U	0.257	0.257	5.00	0.472	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03517 MW-10

Lab Sample ID: 400-149709-8

Date Collected: 02/07/18 12:18

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.278		0.115	0.118	1.00	0.114	pCi/L	02/20/18 10:01	03/14/18 05:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/20/18 10:01	03/14/18 05:33	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.196	U	0.260	0.260	1.00	0.432	pCi/L	02/20/18 10:25	03/06/18 14:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/20/18 10:25	03/06/18 14:32	1
Y Carrier	93.5		40 - 110					02/20/18 10:25	03/06/18 14:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.474		0.284	0.286	5.00	0.432	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03518 MW-11

Lab Sample ID: 400-149709-9

Date Collected: 02/07/18 15:20

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.408		0.139	0.143	1.00	0.115	pCi/L	02/20/18 10:01	03/14/18 12:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					02/20/18 10:01	03/14/18 12:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.378	U	0.267	0.269	1.00	0.413	pCi/L	02/20/18 10:25	03/06/18 14:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					02/20/18 10:25	03/06/18 14:32	1
Y Carrier	95.0		40 - 110					02/20/18 10:25	03/06/18 14:32	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.786		0.301	0.305	5.00	0.413	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03519 MW-12

Lab Sample ID: 400-149709-10

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0736	U	0.0816	0.0819	1.00	0.130	pCi/L	02/20/18 10:01	03/14/18 12:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					02/20/18 10:01	03/14/18 12:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.404	U	0.264	0.267	1.00	0.405	pCi/L	02/20/18 10:25	03/06/18 14:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					02/20/18 10:25	03/06/18 14:33	1
Y Carrier	92.7		40 - 110					02/20/18 10:25	03/06/18 14:33	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.477		0.276	0.279	5.00	0.405	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03520 MW-12 DUP

Lab Sample ID: 400-149709-11

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.126	U	0.0966	0.0973	1.00	0.138	pCi/L	02/20/18 10:01	03/14/18 12:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					02/20/18 10:01	03/14/18 12:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.396	U	0.284	0.287	1.00	0.443	pCi/L	02/20/18 10:25	03/06/18 14:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					02/20/18 10:25	03/06/18 14:33	1
Y Carrier	91.6		40 - 110					02/20/18 10:25	03/06/18 14:33	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.522		0.300	0.303	5.00	0.443	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03521 MW-6

Lab Sample ID: 400-149709-12

Date Collected: 02/08/18 11:05

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.153		0.0975	0.0985	1.00	0.126	pCi/L	02/20/18 10:01	03/14/18 12:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					02/20/18 10:01	03/14/18 12:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.336	U	0.277	0.279	1.00	0.441	pCi/L	02/20/18 10:25	03/06/18 14:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					02/20/18 10:25	03/06/18 14:33	1
Y Carrier	94.2		40 - 110					02/20/18 10:25	03/06/18 14:33	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.489		0.294	0.296	5.00	0.441	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03522 MW-7

Lab Sample ID: 400-149709-13

Date Collected: 02/08/18 12:08

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.195		0.113	0.114	1.00	0.139	pCi/L	02/20/18 10:01	03/14/18 12:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					02/20/18 10:01	03/14/18 12:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.127	U	0.258	0.259	1.00	0.442	pCi/L	02/20/18 10:25	03/06/18 14:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					02/20/18 10:25	03/06/18 14:33	1
Y Carrier	93.1		40 - 110					02/20/18 10:25	03/06/18 14:33	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.322	U	0.282	0.283	5.00	0.442	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03523 FB-2

Lab Sample ID: 400-149709-14

Date Collected: 02/08/18 12:20

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0758	U	0.0836	0.0839	1.00	0.133	pCi/L	02/20/18 10:01	03/14/18 12:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					02/20/18 10:01	03/14/18 12:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.111	U	0.224	0.224	1.00	0.385	pCi/L	02/20/18 10:25	03/06/18 14:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					02/20/18 10:25	03/06/18 14:33	1
Y Carrier	93.8		40 - 110					02/20/18 10:25	03/06/18 14:33	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.187	U	0.239	0.239	5.00	0.385	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03524 MW-8

Lab Sample ID: 400-149709-15

Date Collected: 02/08/18 13:17

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.219		0.114	0.116	1.00	0.132	pCi/L	02/20/18 10:01	03/14/18 12:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					02/20/18 10:01	03/14/18 12:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.330	U	0.271	0.273	1.00	0.429	pCi/L	02/20/18 10:25	03/06/18 14:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					02/20/18 10:25	03/06/18 14:33	1
Y Carrier	91.2		40 - 110					02/20/18 10:25	03/06/18 14:33	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.549		0.294	0.297	5.00	0.429	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03525 MW-9

Lab Sample ID: 400-149709-16

Date Collected: 02/08/18 14:11

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0833	U	0.0876	0.0879	1.00	0.138	pCi/L	02/20/18 10:01	03/14/18 12:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/20/18 10:01	03/14/18 12:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0123	U	0.253	0.253	1.00	0.455	pCi/L	02/20/18 10:25	03/06/18 14:33	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/20/18 10:25	03/06/18 14:33	1
Y Carrier	93.8		40 - 110					02/20/18 10:25	03/06/18 14:33	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0710	U	0.268	0.268	5.00	0.455	pCi/L		03/15/18 09:42	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03526 EB-1

Lab Sample ID: 400-149709-17

Date Collected: 02/08/18 14:45

Matrix: Water

Date Received: 02/14/18 16:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.230		0.107	0.109	1.00	0.108	pCi/L	02/20/18 10:01	03/14/18 12:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					02/20/18 10:01	03/14/18 12:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.208	U	0.276	0.276	1.00	0.459	pCi/L	02/20/18 10:25	03/06/18 14:34	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					02/20/18 10:25	03/06/18 14:34	1
Y Carrier	93.5		40 - 110					02/20/18 10:25	03/06/18 14:34	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.438	U	0.296	0.297	5.00	0.459	pCi/L		03/15/18 09:42	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
SDG: Gadsden Ash Pond 1133

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03510 MW-1

Lab Sample ID: 400-149709-1

Date Collected: 02/06/18 09:37

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355387	03/14/18 05:32	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354192	03/06/18 14:21	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03511 MW-1 DUP

Lab Sample ID: 400-149709-2

Date Collected: 02/06/18 09:37

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355387	03/14/18 05:32	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354192	03/06/18 14:22	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03512 MW-2

Lab Sample ID: 400-149709-3

Date Collected: 02/06/18 11:39

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355387	03/14/18 05:33	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354192	03/06/18 14:22	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03513 MW-3

Lab Sample ID: 400-149709-4

Date Collected: 02/06/18 13:05

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355387	03/14/18 05:33	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354192	03/06/18 14:22	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03514 MW-4

Lab Sample ID: 400-149709-5

Date Collected: 02/06/18 14:28

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355387	03/14/18 05:33	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03515 MW-5

Lab Sample ID: 400-149709-6

Date Collected: 02/06/18 16:15

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355387	03/14/18 05:33	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03516 FB-1

Lab Sample ID: 400-149709-7

Date Collected: 02/06/18 16:40

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355387	03/14/18 05:33	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03517 MW-10

Lab Sample ID: 400-149709-8

Date Collected: 02/07/18 12:18

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355387	03/14/18 05:33	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03518 MW-11

Lab Sample ID: 400-149709-9

Date Collected: 02/07/18 15:20

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:32	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03519 MW-12

Lab Sample ID: 400-149709-10

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03520 MW-12 DUP

Lab Sample ID: 400-149709-11

Date Collected: 02/08/18 09:19

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03521 MW-6

Lab Sample ID: 400-149709-12

Date Collected: 02/08/18 11:05

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03522 MW-7

Lab Sample ID: 400-149709-13

Date Collected: 02/08/18 12:08

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03523 FB-2

Lab Sample ID: 400-149709-14

Date Collected: 02/08/18 12:20

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03524 MW-8

Lab Sample ID: 400-149709-15

Date Collected: 02/08/18 13:17

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Client Sample ID: AY03525 MW-9

Lab Sample ID: 400-149709-16

Date Collected: 02/08/18 14:11

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:33	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
SDG: Gadsden Ash Pond 1133

Client Sample ID: AY03526 EB-1

Lab Sample ID: 400-149709-17

Date Collected: 02/08/18 14:45

Matrix: Water

Date Received: 02/14/18 16:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			352115	02/20/18 10:01	SJC	TAL SL
Total/NA	Analysis	9315		1	355389	03/14/18 12:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			352126	02/20/18 10:25	SJC	TAL SL
Total/NA	Analysis	9320		1	354016	03/06/18 14:34	RTM	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	355820	03/15/18 09:42	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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Rad

Prep Batch: 352115

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-149709-1	AY03510 MW-1	Total/NA	Water	PrecSep-21	
400-149709-2	AY03511 MW-1 DUP	Total/NA	Water	PrecSep-21	
400-149709-3	AY03512 MW-2	Total/NA	Water	PrecSep-21	
400-149709-4	AY03513 MW-3	Total/NA	Water	PrecSep-21	
400-149709-5	AY03514 MW-4	Total/NA	Water	PrecSep-21	
400-149709-6	AY03515 MW-5	Total/NA	Water	PrecSep-21	
400-149709-7	AY03516 FB-1	Total/NA	Water	PrecSep-21	
400-149709-8	AY03517 MW-10	Total/NA	Water	PrecSep-21	
400-149709-9	AY03518 MW-11	Total/NA	Water	PrecSep-21	
400-149709-10	AY03519 MW-12	Total/NA	Water	PrecSep-21	
400-149709-11	AY03520 MW-12 DUP	Total/NA	Water	PrecSep-21	
400-149709-12	AY03521 MW-6	Total/NA	Water	PrecSep-21	
400-149709-13	AY03522 MW-7	Total/NA	Water	PrecSep-21	
400-149709-14	AY03523 FB-2	Total/NA	Water	PrecSep-21	
400-149709-15	AY03524 MW-8	Total/NA	Water	PrecSep-21	
400-149709-16	AY03525 MW-9	Total/NA	Water	PrecSep-21	
400-149709-17	AY03526 EB-1	Total/NA	Water	PrecSep-21	
MB 160-352115/1-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-352115/2-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-149709-3 DU	AY03512 MW-2	Total/NA	Water	PrecSep-21	

Prep Batch: 352126

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-149709-1	AY03510 MW-1	Total/NA	Water	PrecSep_0	
400-149709-2	AY03511 MW-1 DUP	Total/NA	Water	PrecSep_0	
400-149709-3	AY03512 MW-2	Total/NA	Water	PrecSep_0	
400-149709-4	AY03513 MW-3	Total/NA	Water	PrecSep_0	
400-149709-5	AY03514 MW-4	Total/NA	Water	PrecSep_0	
400-149709-6	AY03515 MW-5	Total/NA	Water	PrecSep_0	
400-149709-7	AY03516 FB-1	Total/NA	Water	PrecSep_0	
400-149709-8	AY03517 MW-10	Total/NA	Water	PrecSep_0	
400-149709-9	AY03518 MW-11	Total/NA	Water	PrecSep_0	
400-149709-10	AY03519 MW-12	Total/NA	Water	PrecSep_0	
400-149709-11	AY03520 MW-12 DUP	Total/NA	Water	PrecSep_0	
400-149709-12	AY03521 MW-6	Total/NA	Water	PrecSep_0	
400-149709-13	AY03522 MW-7	Total/NA	Water	PrecSep_0	
400-149709-14	AY03523 FB-2	Total/NA	Water	PrecSep_0	
400-149709-15	AY03524 MW-8	Total/NA	Water	PrecSep_0	
400-149709-16	AY03525 MW-9	Total/NA	Water	PrecSep_0	
400-149709-17	AY03526 EB-1	Total/NA	Water	PrecSep_0	
MB 160-352126/1-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-352126/2-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-149709-3 DU	AY03512 MW-2	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-352115/1-A
Matrix: Water
Analysis Batch: 355387

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 352115

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01600	U	0.0553	0.0553	1.00	0.110	pCi/L	02/20/18 10:01	03/14/18 05:32	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					02/20/18 10:01	03/14/18 05:32	1

Lab Sample ID: LCS 160-352115/2-A
Matrix: Water
Analysis Batch: 355387

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352115

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.7	14.01		1.45	1.00	0.0890	pCi/L	89	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	104		40 - 110						

Lab Sample ID: 400-149709-3 DU
Matrix: Water
Analysis Batch: 355387

Client Sample ID: AY03512 MW-2
Prep Type: Total/NA
Prep Batch: 352115

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.178		0.2171		0.104	1.00	0.102	pCi/L	0.19	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	99.4		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-352126/1-A
Matrix: Water
Analysis Batch: 354192

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 352126

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.09096	U	0.259	0.259	1.00	0.450	pCi/L	02/20/18 10:25	03/06/18 14:21	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					02/20/18 10:25	03/06/18 14:21	1
Y Carrier	90.1		40 - 110					02/20/18 10:25	03/06/18 14:21	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

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

Lab Sample ID: LCS 160-352126/2-A
Matrix: Water
Analysis Batch: 354192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 352126

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	11.3	11.80		1.35	1.00	0.459	pCi/L	104	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	93.1		40 - 110

Lab Sample ID: 400-149709-3 DU
Matrix: Water
Analysis Batch: 354192

Client Sample ID: AY03512 MW-2
Prep Type: Total/NA
Prep Batch: 352126

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.501		0.3571	U	0.290	1.00	0.457	pCi/L	0.24	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	99.4		40 - 110
Y Carrier	91.2		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-149709-3 DU
Matrix: Water
Analysis Batch: 355820

Client Sample ID: AY03512 MW-2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.679		0.5742		0.308	5.00	0.457	pCi/L	0.16	

Chain of Custody Record

Client Information		Lab PM: Whitmire, Cheyenne R		Carrier Tracking No(s):		COC No: 400-56525-24537.1	
Client Contact: Sarah Copeland		E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 2 of 2		Job #:	
Company: Alabama Power General Test Laboratory		Due Date Requested:		Analysis Requested		Preservation Codes:	
Address: 744 County Rd 87 GSC #8		TAT Requested (days): Routine				A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
City: Calera		PO #:				M - Hexane N - None O - ASNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)	
State, Zip: AL, 35040		WO #:				Total Number of containers	
Phone: 205-664-6121(Tel)		Project #:				Special Instructions/Note:	
Email: sgcopela@southernco.com		CCR					
Project Name:		SSOW#:					
Site: Gadsden Ash Pond 1133							
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wash/oil, B=bitumen, A=air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Preservation Code:
AY03519	2/8/18	0919	G	Water	X	X	MW-12
AY03520	2/8/18	0919	G	Water	X	X	MW-12 Dup (Sample Duplicate)
AY03521	2/8/18	1105	G	Water	X	X	MW-6
AY03522	2/8/18	1208	G	Water	X	X	MW-7
AY03523	2/8/18	1220	G	Water	X	X	FB-2 (Field Blank)
AY03524	2/8/18	1317	G	Water	X	X	MW-8
AY03525	2/8/18	1411	G	Water	X	X	MW-9
AY03526	2/8/18	1445	G	Water	X	X	EB-1 (Equipment Blank)
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)							
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months							
Special Instructions/QC Requirements:							
Relinquished by: Sarah Copeland		Date/Time: 2/15/2018; 1145		Company: APC		Method of Shipment:	
Relinquished by:		Date/Time:		Company:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-149709-1
SDG Number: Gadsden Ash Pond 1133

Login Number: 149709

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-149709-1
SDG Number: Gadsden Ash Pond 1133

Login Number: 149709
List Number: 2
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 02/17/18 04:59 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	20.0,20.0
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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
 SDG: Gadsden Ash Pond 1133

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	06-30-18
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
Illinois	NELAP	5	200041	10-09-18
Iowa	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
L-A-B	ISO/IEC 17025		L2471	02-22-20
Louisiana	NELAP	6	30976	06-30-18
Louisiana (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
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
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	03-31-18 *
Connecticut	State Program	1	PH-0241	03-31-19
Florida	NELAP	4	E87689	06-30-18
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
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
Missouri	State Program	7	780	06-30-18
Nevada	State Program	9	MO000542018-1	07-31-18
New Jersey	NELAP	2	MO002	06-30-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-149709-1
SDG: Gadsden Ash Pond 1133

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
New York	NELAP	2	11616	03-31-18 *
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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1147
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks & Greg Dyer
Released By : Sarah Copeland
sgcopela@southernco.com
(205) 664-6121

The following data has been reviewed and approved by:

Quality Control: Sarah Copeland
Digitally signed by Sarah Copeland
DN: cn=Sarah Copeland, o, ou,
email=sgcopela@southernco.com,
c=US
Date: 2018.05.17 11:26:41 -05'00'

Supervision: T. Durant Maske
Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.05.17 14:00:10 -05'00'



Metals ICP

Gadsden Ash Pond

WMWGADAP_1147

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY10027	20180501K	WMWGADAP_1147
AY10028	20180501K	WMWGADAP_1147
AY10029	20180501K	WMWGADAP_1147
AY10030	20180501K	WMWGADAP_1147
AY10031	20180501K	WMWGADAP_1147
AY10032	20180501K	WMWGADAP_1147
AY10033	20180501K	WMWGADAP_1147
AY10034	20180501K	WMWGADAP_1147
AY10035	20180501K	WMWGADAP_1147
AY10036	20180501K	WMWGADAP_1147
AY10037	20180501AK	WMWGADAP_1147
AY10038	20180501AK	WMWGADAP_1147
AY10039	20180501AK	WMWGADAP_1147
AY10040	20180501AK	WMWGADAP_1147
AY10041	20180501AK	WMWGADAP_1147
AY10042	20180501AK	WMWGADAP_1147
AY10043	20180501AK	WMWGADAP_1147

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and passed.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.



- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects. The following samples were diluted due to analyzed sample concentration over the high standard of the calibration curve.

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AY10027	Calcium	x10.15
AY10028	Calcium	x10.15
AY10029	Calcium	x10.15
AY10035	Calcium	x10.15

8. The raw data results include results corrected for dilution.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1147

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY10027	618805	WMWGADAP_1147
AY10028	618805	WMWGADAP_1147
AY10029	618805	WMWGADAP_1147
AY10030	618805	WMWGADAP_1147
AY10031	618805	WMWGADAP_1147
AY10032	618805	WMWGADAP_1147
AY10033	618805	WMWGADAP_1147
AY10034	618805	WMWGADAP_1147
AY10035	618805	WMWGADAP_1147
AY10036	618805	WMWGADAP_1147
AY10037	618806	WMWGADAP_1147
AY10038	618806	WMWGADAP_1147
AY10039	618806	WMWGADAP_1147
AY10040	618806	WMWGADAP_1147
AY10041	618806	WMWGADAP_1147
AY10042	618806	WMWGADAP_1147
AY10043	618806	WMWGADAP_1147

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.



- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a dilution of 1 to 5 to compensate for any matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1147

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY10027	618927	WMWGADAP_1147
AY10028	618927	WMWGADAP_1147
AY10029	618927	WMWGADAP_1147
AY10030	618927	WMWGADAP_1147
AY10031	618927	WMWGADAP_1147
AY10032	618927	WMWGADAP_1147
AY10033	618927	WMWGADAP_1147
AY10034	618927	WMWGADAP_1147
AY10035	618927	WMWGADAP_1147
AY10036	618927	WMWGADAP_1147
AY10037	618928	WMWGADAP_1147
AY10038	618928	WMWGADAP_1147
AY10039	618928	WMWGADAP_1147
AY10040	618928	WMWGADAP_1147
AY10041	618928	WMWGADAP_1147
AY10042	618928	WMWGADAP_1147
AY10043	618928	WMWGADAP_1147

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.



- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1147

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY10027	618687	WMWGADAP_1147
AY10028	618687	WMWGADAP_1147
AY10029	618687	WMWGADAP_1147
AY10030	618687	WMWGADAP_1147
AY10031	618687	WMWGADAP_1147
AY10032	618687	WMWGADAP_1147
AY10033	618687	WMWGADAP_1147
AY10034	618688	WMWGADAP_1147
AY10035	618688	WMWGADAP_1147
AY10036	618688	WMWGADAP_1147
AY10037	618688	WMWGADAP_1147
AY10038	618688	WMWGADAP_1147
AY10039	618688	WMWGADAP_1147
AY10040	618688	WMWGADAP_1147
AY10041	618688	WMWGADAP_1147
AY10042	618688	WMWGADAP_1147
AY10043	618688	WMWGADAP_1147

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5% except sample AY10043 where the sample and duplicate results are < 5X RL therefore the precision limits not applicable.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- All samples were between 2.5mg and 200mg residue except samples AY10030, AY10037, and AY10043 where the maximum amount of sample was filtered (150 ml.)

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY10027

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00230	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0488	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	1.21	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		10.15	1.015	5.075	269	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0204	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		50	1210	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY10027

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115		98.9	70 to 130	0.295	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046		91.6	70 to 130	1.25	20
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15		99.5	70 to 130	0.227	20
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75		94.7	70 to 130	0.818	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115		94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115		100	70 to 130	1.92	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115		106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115		98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115		90.8	70 to 130	0.714	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115		91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115		97.4	70 to 130	0.0484	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115		92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115		101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115		100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23		96.7	70 to 130	0.114	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY10027

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY10033	Solids, Dissolved	mg/L	-3.00	25			363	53.0	40 to 60		0.275	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-1 Dup

Laboratory ID Number: AY10028

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00245	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0530	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	1.20	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		10.15	1.015	5.075	269	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0228	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		50	1240	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-1 Dup

Laboratory ID Number: AY10028

Sample	Analysis	Units	MB	MB			LCS			Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75	94.7	70 to 130	0.818	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046	91.6	70 to 130	1.25	20
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115	98.9	70 to 130	0.295	20
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15	99.5	70 to 130	0.227	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115	94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115	100	70 to 130	1.92	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115	91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115	97.4	70 to 130	0.0484	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115	92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115	101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115	100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23	96.7	70 to 130	0.114	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115	106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115	98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115	90.8	70 to 130	0.714	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-1 Dup

Laboratory ID Number: AY10028

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY10033	Solids, Dissolved	mg/L	-3.00	25			363	53.0	40 to 60			0.275	5

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY10029

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	0.643	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0518	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	0.608	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		10.15	1.015	5.075	95.9	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0258	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	0.0510	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0165	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	414	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY10029

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115	98.9	70 to 130	0.295	20
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75	94.7	70 to 130	0.818	20
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15	99.5	70 to 130	0.227	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046	91.6	70 to 130	1.25	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115	91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115	97.4	70 to 130	0.0484	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115	94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115	100	70 to 130	1.92	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115	106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115	98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115	90.8	70 to 130	0.714	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115	92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115	101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115	100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23	96.7	70 to 130	0.114	20

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Comments:

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY10029

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY10033	Solids, Dissolved	mg/L	-3.00	25			363	53.0	40 to 60		0.275	5

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY10030

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	U Not Detected	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY10030

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Limit	
			MB	Limit					Rec	Limit			
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75	94.7	70 to 130	0.818	20
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115	98.9	70 to 130	0.295	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046	91.6	70 to 130	1.25	20
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15	99.5	70 to 130	0.227	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115	94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115	100	70 to 130	1.92	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115	91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115	97.4	70 to 130	0.0484	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115	92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115	101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115	100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23	96.7	70 to 130	0.114	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115	106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115	98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115	90.8	70 to 130	0.714	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 23-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY10030

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY10033	Solids, Dissolved	mg/L	-3.00	25			363	53.0	40 to 60		0.275	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY10031

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00218	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.359	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	0.144	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	50.1	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	242	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY10031

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec	Limit
			MB	Limit						Rec	Limit		
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115	98.9	70 to 130	0.295	20
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75	94.7	70 to 130	0.818	20
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15	99.5	70 to 130	0.227	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046	91.6	70 to 130	1.25	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115	106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115	98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115	90.8	70 to 130	0.714	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115	94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115	100	70 to 130	1.92	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115	91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115	97.4	70 to 130	0.0484	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115	92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115	101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115	100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23	96.7	70 to 130	0.114	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY10031

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY10033	Solids, Dissolved	mg/L	-3.00	25			363	53.0	40 to 60	0.275	5

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY10032

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00283	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.338	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	0.124	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	72.3	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	324	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY10032

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115	98.9	70 to 130	0.295	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046	91.6	70 to 130	1.25	20
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15	99.5	70 to 130	0.227	20
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75	94.7	70 to 130	0.818	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115	91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115	97.4	70 to 130	0.0484	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115	106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115	98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115	90.8	70 to 130	0.714	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115	94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115	100	70 to 130	1.92	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115	92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115	101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115	100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23	96.7	70 to 130	0.114	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY10032

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY10033	Solids, Dissolved	mg/L	-3.00	25			363	53.0	40 to 60		0.275	5

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Expiration: June 30, 2018

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY10033

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0405	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	J 0.0476	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	50.5	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000702	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	J 0.00257	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	365	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY10033

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115	98.9	70 to 130	0.295	20
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75	94.7	70 to 130	0.818	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046	91.6	70 to 130	1.25	20
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15	99.5	70 to 130	0.227	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115	94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115	100	70 to 130	1.92	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115	92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115	101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115	100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23	96.7	70 to 130	0.114	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115	106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115	98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115	90.8	70 to 130	0.714	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115	91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115	97.4	70 to 130	0.0484	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY10033

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY10033	Solids, Dissolved	mg/L	-3.00	25			363	53.0	40 to 60	0.275	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-12 Dup

Laboratory ID Number: AY10034

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0396	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	J 0.0475	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	50.7	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000688	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	J 0.00250	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	367	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-12 Dup

Laboratory ID Number: AY10034

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115		98.9	70 to 130	0.295	20
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15		99.5	70 to 130	0.227	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046		91.6	70 to 130	1.25	20
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75		94.7	70 to 130	0.818	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115		94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115		100	70 to 130	1.92	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115		106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115		98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115		90.8	70 to 130	0.714	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115		91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115		97.4	70 to 130	0.0484	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115		92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115		101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115		100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23		96.7	70 to 130	0.114	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-12 Dup

Laboratory ID Number: AY10034

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60	0.00	5

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY10035

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0492	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	0.979	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		10.15	1.015	5.075	88.8	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0251	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	510	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY10035

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15	99.5	70 to 130	0.227	20
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115	98.9	70 to 130	0.295	20
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75	94.7	70 to 130	0.818	20
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046	91.6	70 to 130	1.25	20
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115	91.7	70 to 130	0.765	20
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115	97.4	70 to 130	0.0484	20
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115	94.4	70 to 130	1.31	20
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115	100	70 to 130	1.92	20
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115	92.9	70 to 130	0.582	20
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115	101	70 to 130	1.47	20
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115	100	70 to 130	2.86	20
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23	96.7	70 to 130	0.114	20
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115	106	70 to 130	0.933	20
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115	98.2	70 to 130	0.628	20
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115	90.8	70 to 130	0.714	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY10035

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60	0.00	5

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 744 County Road 87, GSC#8
 Calera, AL 35040
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 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY10036

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	0.0124	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.217	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	0.475	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	27.8	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0270	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	193	mg/L

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Laboratory certification ID: E571114

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Comments:

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 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY10036

Sample	Analysis	Units	MB	MB			MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike	MS				Limit	Rec	Limit	Prec		
AY10036	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0989	0.0986	0.102	0.085 to 0.115	98.9	70 to 130	0.295	20		
AY10036	Mercury, Total by CVAA	mg/L	0.0000601	0.0005	0.004	0.00366	0.00371	0.00399	0.0034 to 0.0046	91.6	70 to 130	1.25	20		
AY10036	Calcium, Total	mg/L	0.00163	0.22	5.00	32.5	32.2	4.93	4.25 to 5.75	94.7	70 to 130	0.818	20		
AY10036	Boron, Total	mg/L	0.00394	0.044	1.00	1.47	1.47	0.966	0.85 to 1.15	99.5	70 to 130	0.227	20		
AY10036	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0917	0.0924	0.0964	0.085 to 0.115	91.7	70 to 130	0.765	20		
AY10036	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0974	0.0973	0.0962	0.085 to 0.115	97.4	70 to 130	0.0484	20		
AY10036	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.311	0.307	0.0978	0.085 to 0.115	94.4	70 to 130	1.31	20		
AY10036	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.100	0.102	0.103	0.085 to 0.115	100	70 to 130	1.92	20		
AY10036	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.133	0.132	0.107	0.085 to 0.115	106	70 to 130	0.933	20		
AY10036	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0982	0.0976	0.0983	0.085 to 0.115	98.2	70 to 130	0.628	20		
AY10036	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0908	0.0915	0.0943	0.085 to 0.115	90.8	70 to 130	0.714	20		
AY10036	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0929	0.0924	0.0971	0.085 to 0.115	92.9	70 to 130	0.582	20		
AY10036	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.113	0.115	0.103	0.085 to 0.115	101	70 to 130	1.47	20		
AY10036	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.100	0.0972	0.101	0.085 to 0.115	100	70 to 130	2.86	20		
AY10036	Lithium, Total	mg/L	0.000112	0.022	0.20	0.193	0.194	0.188	0.17 to 0.23	96.7	70 to 130	0.114	20		

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

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 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY10036

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60			0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
Sample Date: 24-Apr-18
Customer ID:
Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY10037

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	U Not Detected	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY10037

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY10043	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0951	0.100	0.0983	0.085 to 0.115	95.1	70 to 130	5.40	20
AY10043	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.0964	0.101	0.101	0.085 to 0.115	96.4	70 to 130	4.86	20
AY10043	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0908	0.0845	0.0964	0.085 to 0.115	90.8	70 to 130	7.19	20
AY10043	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.102	0.111	0.107	0.085 to 0.115	102	70 to 130	7.68	20
AY10043	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0895	0.0935	0.0943	0.085 to 0.115	89.5	70 to 130	4.37	20
AY10043	Calcium, Total	mg/L	0.00135	0.22	5.00	4.99	5.00	4.90	4.25 to 5.75	99.8	70 to 130	0.136	20
AY10043	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0958	0.101	0.102	0.085 to 0.115	95.8	70 to 130	5.51	20
AY10043	Lithium, Total	mg/L	0.0000376	0.022	0.20	0.183	0.182	0.183	0.17 to 0.23	91.3	70 to 130	0.639	20
AY10043	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.0990	0.104	0.103	0.085 to 0.115	99.0	70 to 130	5.20	20
AY10043	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.0989	0.102	0.103	0.085 to 0.115	98.9	70 to 130	3.11	20
AY10043	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0949	0.0986	0.0962	0.085 to 0.115	94.9	70 to 130	3.88	20
AY10043	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0910	0.0938	0.0971	0.085 to 0.115	91.0	70 to 130	3.05	20
AY10043	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.0952	0.0979	0.0978	0.085 to 0.115	95.2	70 to 130	2.74	20
AY10043	Boron, Total	mg/L	0.00409	0.044	1.00	0.969	0.960	0.969	0.85 to 1.15	96.9	70 to 130	0.947	20
AY10043	Mercury, Total by CVAA	mg/L	0.0000622	0.0005	0.004	0.00386	0.00393	0.00393	0.0034 to 0.0046	96.5	70 to 130	1.76	20

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 24-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY10037

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60		0.00	5

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY10038

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.260	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	0.498	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	41.8	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	J 0.00258	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	192	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY10038

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY10043	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0951	0.100	0.0983	0.085 to 0.115		95.1	70 to 130	5.40	20
AY10043	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.0964	0.101	0.101	0.085 to 0.115		96.4	70 to 130	4.86	20
AY10043	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0908	0.0845	0.0964	0.085 to 0.115		90.8	70 to 130	7.19	20
AY10043	Calcium, Total	mg/L	0.00135	0.22	5.00	4.99	5.00	4.90	4.25 to 5.75		99.8	70 to 130	0.136	20
AY10043	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0958	0.101	0.102	0.085 to 0.115		95.8	70 to 130	5.51	20
AY10043	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.102	0.111	0.107	0.085 to 0.115		102	70 to 130	7.68	20
AY10043	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0895	0.0935	0.0943	0.085 to 0.115		89.5	70 to 130	4.37	20
AY10043	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.0989	0.102	0.103	0.085 to 0.115		98.9	70 to 130	3.11	20
AY10043	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0949	0.0986	0.0962	0.085 to 0.115		94.9	70 to 130	3.88	20
AY10043	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0910	0.0938	0.0971	0.085 to 0.115		91.0	70 to 130	3.05	20
AY10043	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.0952	0.0979	0.0978	0.085 to 0.115		95.2	70 to 130	2.74	20
AY10043	Boron, Total	mg/L	0.00409	0.044	1.00	0.969	0.960	0.969	0.85 to 1.15		96.9	70 to 130	0.947	20
AY10043	Mercury, Total by CVAA	mg/L	0.0000622	0.0005	0.004	0.00386	0.00393	0.00393	0.0034 to 0.0046		96.5	70 to 130	1.76	20
AY10043	Lithium, Total	mg/L	0.0000376	0.022	0.20	0.183	0.182	0.183	0.17 to 0.23		91.3	70 to 130	0.639	20
AY10043	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.0990	0.104	0.103	0.085 to 0.115		99.0	70 to 130	5.20	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY10038

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60		0.00	5

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 Calera, AL 35040
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY10039

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0553	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	J 0.0548	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	19.8	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	102	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY10039

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec	Limit
			MB	Limit						Rec	Limit		
AY10043	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0951	0.100	0.0983	0.085 to 0.115	95.1	70 to 130	5.40	20
AY10043	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0908	0.0845	0.0964	0.085 to 0.115	90.8	70 to 130	7.19	20
AY10043	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.0964	0.101	0.101	0.085 to 0.115	96.4	70 to 130	4.86	20
AY10043	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.102	0.111	0.107	0.085 to 0.115	102	70 to 130	7.68	20
AY10043	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0895	0.0935	0.0943	0.085 to 0.115	89.5	70 to 130	4.37	20
AY10043	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.0989	0.102	0.103	0.085 to 0.115	98.9	70 to 130	3.11	20
AY10043	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0949	0.0986	0.0962	0.085 to 0.115	94.9	70 to 130	3.88	20
AY10043	Lithium, Total	mg/L	0.0000376	0.022	0.20	0.183	0.182	0.183	0.17 to 0.23	91.3	70 to 130	0.639	20
AY10043	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.0990	0.104	0.103	0.085 to 0.115	99.0	70 to 130	5.20	20
AY10043	Calcium, Total	mg/L	0.00135	0.22	5.00	4.99	5.00	4.90	4.25 to 5.75	99.8	70 to 130	0.136	20
AY10043	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0958	0.101	0.102	0.085 to 0.115	95.8	70 to 130	5.51	20
AY10043	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0910	0.0938	0.0971	0.085 to 0.115	91.0	70 to 130	3.05	20
AY10043	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.0952	0.0979	0.0978	0.085 to 0.115	95.2	70 to 130	2.74	20
AY10043	Boron, Total	mg/L	0.00409	0.044	1.00	0.969	0.960	0.969	0.85 to 1.15	96.9	70 to 130	0.947	20
AY10043	Mercury, Total by CVAA	mg/L	0.0000622	0.0005	0.004	0.00386	0.00393	0.00393	0.0034 to 0.0046	96.5	70 to 130	1.76	20

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Laboratory certification ID: E571114

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Comments:

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY10039

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60		0.00	5

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY10040

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.0764	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	J 0.0734	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	17.4	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	106	mg/L

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY10040

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY10043	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.0964	0.101	0.101	0.085 to 0.115	96.4	70 to 130	4.86	20
AY10043	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0908	0.0845	0.0964	0.085 to 0.115	90.8	70 to 130	7.19	20
AY10043	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0951	0.100	0.0983	0.085 to 0.115	95.1	70 to 130	5.40	20
AY10043	Calcium, Total	mg/L	0.00135	0.22	5.00	4.99	5.00	4.90	4.25 to 5.75	99.8	70 to 130	0.136	20
AY10043	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0958	0.101	0.102	0.085 to 0.115	95.8	70 to 130	5.51	20
AY10043	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.102	0.111	0.107	0.085 to 0.115	102	70 to 130	7.68	20
AY10043	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0895	0.0935	0.0943	0.085 to 0.115	89.5	70 to 130	4.37	20
AY10043	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.0989	0.102	0.103	0.085 to 0.115	98.9	70 to 130	3.11	20
AY10043	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0949	0.0986	0.0962	0.085 to 0.115	94.9	70 to 130	3.88	20
AY10043	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0910	0.0938	0.0971	0.085 to 0.115	91.0	70 to 130	3.05	20
AY10043	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.0952	0.0979	0.0978	0.085 to 0.115	95.2	70 to 130	2.74	20
AY10043	Boron, Total	mg/L	0.00409	0.044	1.00	0.969	0.960	0.969	0.85 to 1.15	96.9	70 to 130	0.947	20
AY10043	Mercury, Total by CVAA	mg/L	0.0000622	0.0005	0.004	0.00386	0.00393	0.00393	0.0034 to 0.0046	96.5	70 to 130	1.76	20
AY10043	Lithium, Total	mg/L	0.0000376	0.022	0.20	0.183	0.182	0.183	0.17 to 0.23	91.3	70 to 130	0.639	20
AY10043	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.0990	0.104	0.103	0.085 to 0.115	99.0	70 to 130	5.20	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY10040

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY10041

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00291	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.224	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	J 0.0571	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	56.3	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	J 0.00204	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	223	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY10041

Sample	Analysis	Units	MB	MB			MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike	MS				Limit	Rec	Limit	Prec		
AY10043	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.0964	0.101	0.101	0.085 to 0.115	96.4	70 to 130	4.86	20		
AY10043	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0908	0.0845	0.0964	0.085 to 0.115	90.8	70 to 130	7.19	20		
AY10043	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0951	0.100	0.0983	0.085 to 0.115	95.1	70 to 130	5.40	20		
AY10043	Calcium, Total	mg/L	0.00135	0.22	5.00	4.99	5.00	4.90	4.25 to 5.75	99.8	70 to 130	0.136	20		
AY10043	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0958	0.101	0.102	0.085 to 0.115	95.8	70 to 130	5.51	20		
AY10043	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0910	0.0938	0.0971	0.085 to 0.115	91.0	70 to 130	3.05	20		
AY10043	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.0952	0.0979	0.0978	0.085 to 0.115	95.2	70 to 130	2.74	20		
AY10043	Boron, Total	mg/L	0.00409	0.044	1.00	0.969	0.960	0.969	0.85 to 1.15	96.9	70 to 130	0.947	20		
AY10043	Mercury, Total by CVAA	mg/L	0.0000622	0.0005	0.004	0.00386	0.00393	0.00393	0.0034 to 0.0046	96.5	70 to 130	1.76	20		
AY10043	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.102	0.111	0.107	0.085 to 0.115	102	70 to 130	7.68	20		
AY10043	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0895	0.0935	0.0943	0.085 to 0.115	89.5	70 to 130	4.37	20		
AY10043	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.0989	0.102	0.103	0.085 to 0.115	98.9	70 to 130	3.11	20		
AY10043	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0949	0.0986	0.0962	0.085 to 0.115	94.9	70 to 130	3.88	20		
AY10043	Lithium, Total	mg/L	0.0000376	0.022	0.20	0.183	0.182	0.183	0.17 to 0.23	91.3	70 to 130	0.639	20		
AY10043	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.0990	0.104	0.103	0.085 to 0.115	99.0	70 to 130	5.20	20		

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY10041

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY10042

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	0.158	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	J 0.0551	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	40.3	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	180	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY10042

Sample	Analysis	Units	MB	MB			MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike	MS				Limit	Rec	Limit	Prec		
AY10043	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.0964	0.101	0.101	0.085 to 0.115	96.4	70 to 130	4.86	20		
AY10043	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0908	0.0845	0.0964	0.085 to 0.115	90.8	70 to 130	7.19	20		
AY10043	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0951	0.100	0.0983	0.085 to 0.115	95.1	70 to 130	5.40	20		
AY10043	Lithium, Total	mg/L	0.0000376	0.022	0.20	0.183	0.182	0.183	0.17 to 0.23	91.3	70 to 130	0.639	20		
AY10043	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.0990	0.104	0.103	0.085 to 0.115	99.0	70 to 130	5.20	20		
AY10043	Cobalt, Total	mg/L	0.0000443	0.0044	0.10	0.102	0.111	0.107	0.085 to 0.115	102	70 to 130	7.68	20		
AY10043	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0895	0.0935	0.0943	0.085 to 0.115	89.5	70 to 130	4.37	20		
AY10043	Calcium, Total	mg/L	0.00135	0.22	5.00	4.99	5.00	4.90	4.25 to 5.75	99.8	70 to 130	0.136	20		
AY10043	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0958	0.101	0.102	0.085 to 0.115	95.8	70 to 130	5.51	20		
AY10043	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.0989	0.102	0.103	0.085 to 0.115	98.9	70 to 130	3.11	20		
AY10043	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0949	0.0986	0.0962	0.085 to 0.115	94.9	70 to 130	3.88	20		
AY10043	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0910	0.0938	0.0971	0.085 to 0.115	91.0	70 to 130	3.05	20		
AY10043	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.0952	0.0979	0.0978	0.085 to 0.115	95.2	70 to 130	2.74	20		
AY10043	Boron, Total	mg/L	0.00409	0.044	1.00	0.969	0.960	0.969	0.85 to 1.15	96.9	70 to 130	0.947	20		
AY10043	Mercury, Total by CVAA	mg/L	0.0000622	0.0005	0.004	0.00386	0.00393	0.00393	0.0034 to 0.0046	96.5	70 to 130	1.76	20		

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY10042

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec	Limit
								Duplicate	LCS			Limit	Limit			
AY10043	Solids, Dissolved	mg/L	-3.00		25			-1.3	53.0		40 to 60			0.00		5

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY10043

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	5/1/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	5/9/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	5/1/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	5/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	GMW	4/30/2018	SM 2540C		1		25	U Not Detected	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: RPD for TDS is greater than 5%. The sample and duplicate results are less than 5 times the RL. SGC 5/3/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY10043

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY10043	Lead, Total	mg/L	0.0000213	0.0022	0.10	0.0951	0.100	0.0983	0.085 to 0.115	95.1	70 to 130	5.40	20
AY10043	Cadmium, Total	mg/L	0.00000349	0.00066	0.10	0.0964	0.101	0.101	0.085 to 0.115	96.4	70 to 130	4.86	20
AY10043	Arsenic, Total	mg/L	0.0000132	0.0022	0.10	0.0989	0.102	0.103	0.085 to 0.115	98.9	70 to 130	3.11	20
AY10043	Chromium, Total	mg/L	0.0000164	0.0044	0.10	0.0949	0.0986	0.0962	0.085 to 0.115	94.9	70 to 130	3.88	20
AY10043	Calcium, Total	mg/L	0.00135	0.22	5.00	4.99	5.00	4.90	4.25 to 5.75	99.8	70 to 130	0.136	20
AY10043	Thallium, Total	mg/L	0.00000954	0.00044	0.10	0.0958	0.101	0.102	0.085 to 0.115	95.8	70 to 130	5.51	20
AY10043	Lithium, Total	mg/L	0.0000376	0.022	0.20	0.183	0.182	0.183	0.17 to 0.23	91.3	70 to 130	0.639	20
AY10043	Selenium, Total	mg/L	0.0000322	0.0044	0.10	0.0990	0.104	0.103	0.085 to 0.115	99.0	70 to 130	5.20	20
AY10043	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.102	0.111	0.107	0.085 to 0.115	102	70 to 130	7.68	20
AY10043	Molybdenum, Total	mg/L	0.0000131	0.0044	0.10	0.0895	0.0935	0.0943	0.085 to 0.115	89.5	70 to 130	4.37	20
AY10043	Antimony, Total	mg/L	0.0000677	0.00132	0.10	0.0910	0.0938	0.0971	0.085 to 0.115	91.0	70 to 130	3.05	20
AY10043	Barium, Total	mg/L	0.00000648	0.0044	0.10	0.0952	0.0979	0.0978	0.085 to 0.115	95.2	70 to 130	2.74	20
AY10043	Boron, Total	mg/L	0.00409	0.044	1.00	0.969	0.960	0.969	0.85 to 1.15	96.9	70 to 130	0.947	20
AY10043	Mercury, Total by CVAA	mg/L	0.0000622	0.0005	0.004	0.00386	0.00393	0.00393	0.0034 to 0.0046	96.5	70 to 130	1.76	20
AY10043	Beryllium, Total	mg/L	0.0000525	0.00132	0.10	0.0908	0.0845	0.0964	0.085 to 0.115	90.8	70 to 130	7.19	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 25-Apr-18
 Customer ID:
 Delivery Date: 26-Apr-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY10043

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY10043	Solids, Dissolved	mg/L	-3.00	25			-1.3	53.0	40 to 60	0.00	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2018

Comments: RPD for TDS is greater than 5%. The sample and duplicate results are less than 5 times the RL. SGC 5/3/18

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information



Chain of Custody

Groundwater

APC General Testing Laboratory
General Service Complex Building 8

Field Complete Outside Lab
 Lab Complete

Lab ETA 04/26/2018 08:00

Requested Complete Date	<input type="text" value="Routine"/>	Results To	<input type="text" value="Dustin Brooks, Greg Dyer"/>
Site Representative	<input type="text" value="Gerson Pickett"/>	Requested By	<input type="text" value="Greg Dyer"/>
Collector	<input type="text" value="Ben Rothschadl"/>	Location	<input type="text" value="Gadsden Ash Pond"/>
Analysis Requested	<input type="text" value="Bottle 1 (500mL): Metals, Bottle 2 (250mL): Hg, Bottle 3 (500mL): TDS"/>		
Comments	<input type="text"/>		

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-1	04/23/2018	12:40	3	Groundwater		AY10027
MW-1 DUP	04/23/2018	12:40	3	Sample Duplicate		AY10028
MW-2	04/23/2018	15:00	3	Groundwater		AY10029
FB-1	04/23/2018	15:20	3	Field Blank		AY10030
MW-10	04/24/2018	09:55	3	Groundwater		AY10031
MW-11	04/24/2018	13:00	3	Groundwater		AY10032
MW-12	04/24/2018	14:02	3	Groundwater		AY10033
MW-12 DUP	04/24/2018	14:02	3	Sample Duplicate		AY10034
MW-3	04/24/2018	15:15	3	Groundwater		AY10035
MW-4	04/24/2018	16:04	3	Groundwater		AY10036
FB-2	04/24/2018	16:25	3	Field Blank		AY10037
MW-5	04/25/2018	10:37	3	Groundwater		AY10038
MW-6	04/25/2018	11:47	3	Groundwater		AY10039
MW-7	04/25/2018	13:00	3	Groundwater		AY10040
MW-8	04/25/2018	14:15	3	Groundwater		AY10041
MW-9	04/25/2018	15:20	3	Groundwater		AY10042
EB-1	04/25/2018	16:25	3	Equipment Blank		AY10043

Relinquished By	Received By	Date/Time
Benjamin Rothschadl <small>Digitally signed by Benjamin Rothschadl DN: cn=Benjamin Rothschadl, o=Groundwater, ou=APCO Environmental Affairs, email=X2BTR0TH@southernco.com, c=US Date: 2018.04.26 08:00:57 -05'00'</small>	Sarah Copeland <small>Digitally signed by Sarah Copeland DN: cn=Sarah Copeland, o, ou, email=sgcopela@southernco.com, c=US Date: 2018.04.26 11:06:49 -05'00'</small>	04/26/2018 11:06

SmarTroll ID <input type="text" value="6496-34170-1-1"/>	All metals and radiological bottles have pH < 2 <input checked="" type="checkbox"/>
Turbidity ID <input type="text" value="4677-23343-4-2"/>	Cooler Temp <input type="text" value="0.3 degrees C"/>
	Thermometer ID <input type="text" value="5408-27568-2-2"/>
	pH Strip ID <input type="text" value="5881-30153-10-7"/>



Chain of Custody

Groundwater

APC General Testing Laboratory
General Service Complex Building 8

Field Complete Outside Lab
 Lab Complete

Lab ETA 04/26/2018 08:00

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer
Site Representative	Gerson Pickett	Requested By	Greg Dyer
Collector	Ben Rothschadl	Location	Gadsden Ash Pond
Analysis Requested	Bottle 1 (1L): Radiological, Bottle 2 (250mL): Anions		
Comments	Radium Duplicate Collected At MW-10 All samples outsourced to Test America.		

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-1	04/23/2018	12:40	2	Groundwater		AY10044
MW-1 DUP	04/23/2018	12:40	2	Sample Duplicate		AY10045
MW-2	04/23/2018	15:00	2	Groundwater		AY10046
FB-1	04/23/2018	15:20	2	Field Blank		AY10047
MW-10	04/24/2018	09:55	4	Groundwater		AY10048
MW-11	04/24/2018	13:00	2	Groundwater		AY10049
MW-12	04/24/2018	14:02	2	Groundwater		AY10050
MW-12 DUP	04/24/2018	14:02	2	Sample Duplicate		AY10051
MW-3	04/24/2018	15:15	2	Groundwater		AY10052
MW-4	04/24/2018	16:04	2	Groundwater		AY10053
FB-2	04/24/2018	16:25	2	Field Blank		AY10054
MW-5	04/25/2018	10:37	2	Groundwater		AY10055
MW-6	04/25/2018	11:47	2	Groundwater		AY10056
MW-7	04/25/2018	13:00	2	Groundwater		AY10057
MW-8	04/25/2018	14:15	2	Groundwater		AY10058
MW-9	04/25/2018	15:20	2	Groundwater		AY10059
EB-1	04/25/2018	16:25	2	Equipment Blank		AY10060

Relinquished By	Received By	Date/Time
Benjamin Rothschadl <small>Digitally signed by Benjamin Rothschadl DN: cn=Benjamin Rothschadl, o=Groundwater, ou=APCO Environmental Affairs, email=X2B7R0TH@southerncco.com, c=US Date: 2018.04.26 08:01:35 -05'00'</small>	Sarah Copeland <small>Digitally signed by Sarah Copeland DN: cn=Sarah Copeland, o, ou, email=sgcopela@southerncco.com, c=US Date: 2018.04.26 11:05:26 -05'00'</small>	04/26/2018 11:05

SmarTroll ID	6496-34170-1-1	All metals and radiological bottles have pH < 2 <input checked="" type="checkbox"/>	
Turbidity ID	4677-23343-4-2		
	Cooler Temp		0.3 degrees C
	Thermometer ID		5408-27568-2-2
		pH Strip ID	5881-30153-10-7

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: 400-152955-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1147

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

5/13/2018 7:57:31 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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results through

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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.

- 1
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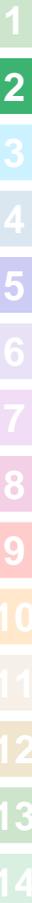


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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Job ID: 400-152955-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-152955-1

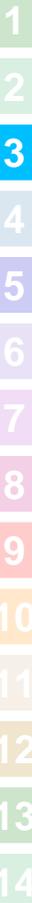
Receipt Exceptions

Rad samples were received on 4/30/18 and anions were received on 05/01/18.

General Chemistry

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 396824 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: AY10044 MW-1 (400-152955-1), AY10045 MW-1 DUP (400-152955-2), AY10046 MW-2 (400-152955-3), AY10049 MW-11 (400-152955-6), AY10050 MW-12 (400-152955-7), AY10051 MW-12 DUP (400-152955-8), AY10052 MW-3 (400-152955-9), (400-152955-A-1 MS) and (400-152955-A-1 MSD). Elevated reporting limits (RLs) are provided.



Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10044 MW-1

Lab Sample ID: 400-152955-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.9		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	640	F1	100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10045 MW-1 DUP

Lab Sample ID: 400-152955-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.7		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	610		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10046 MW-2

Lab Sample ID: 400-152955-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.7		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.19		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	140		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10047 FB-1

Lab Sample ID: 400-152955-4

No Detections.

Client Sample ID: AY10048 MW-10

Lab Sample ID: 400-152955-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.9		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	27		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10049 MW-11

Lab Sample ID: 400-152955-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.7		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	98		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10050 MW-12

Lab Sample ID: 400-152955-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.9		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	210		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10051 MW-12 DUP

Lab Sample ID: 400-152955-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.0		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	210		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10052 MW-3

Lab Sample ID: 400-152955-9

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10052 MW-3 (Continued)

Lab Sample ID: 400-152955-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.5		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	260		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10053 MW-4

Lab Sample ID: 400-152955-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.4		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.20		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY10054 FB-2

Lab Sample ID: 400-152955-11

No Detections.

Client Sample ID: AY10055 MW-5

Lab Sample ID: 400-152955-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.6		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	22		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10056 MW-6

Lab Sample ID: 400-152955-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	13		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10057 MW-7

Lab Sample ID: 400-152955-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.0		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	11		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10058 MW-8

Lab Sample ID: 400-152955-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.3		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.090	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	7.9		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY10059 MW-9

Lab Sample ID: 400-152955-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.12		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	12		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10060 EB-1

Lab Sample ID: 400-152955-17

No Detections.

- 1
- 2
- 3
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- 6
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- 8
- 9
- 10
- 11
- 12
- 13
- 14

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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

- 1
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- 12
- 13
- 14

Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-152955-1	AY10044 MW-1	Water	04/23/18 12:40	04/30/18 15:30
400-152955-2	AY10045 MW-1 DUP	Water	04/23/18 12:40	04/30/18 15:30
400-152955-3	AY10046 MW-2	Water	04/23/18 15:00	04/30/18 15:30
400-152955-4	AY10047 FB-1	Water	04/23/18 15:20	04/30/18 15:30
400-152955-5	AY10048 MW-10	Water	04/24/18 09:55	04/30/18 15:30
400-152955-6	AY10049 MW-11	Water	04/24/18 13:00	04/30/18 15:30
400-152955-7	AY10050 MW-12	Water	04/24/18 14:02	04/30/18 15:30
400-152955-8	AY10051 MW-12 DUP	Water	04/24/18 14:02	04/30/18 15:30
400-152955-9	AY10052 MW-3	Water	04/24/18 15:15	04/30/18 15:30
400-152955-10	AY10053 MW-4	Water	04/24/18 16:04	04/30/18 15:30
400-152955-11	AY10054 FB-2	Water	04/24/18 16:25	04/30/18 15:30
400-152955-12	AY10055 MW-5	Water	04/25/18 10:37	04/30/18 15:30
400-152955-13	AY10056 MW-6	Water	04/25/18 11:47	04/30/18 15:30
400-152955-14	AY10057 MW-7	Water	04/25/18 13:00	04/30/18 15:30
400-152955-15	AY10058 MW-8	Water	04/25/18 14:15	04/30/18 15:30
400-152955-16	AY10059 MW-9	Water	04/25/18 15:20	04/30/18 15:30
400-152955-17	AY10060 EB-1	Water	04/25/18 16:25	04/30/18 15:30

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10044 MW-1

Lab Sample ID: 400-152955-1

Date Collected: 04/23/18 12:40

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.9		2.0	0.60	mg/L			05/02/18 10:11	1
Fluoride	0.070	J	0.10	0.032	mg/L			05/03/18 12:47	1
Sulfate	640	F1	100	28	mg/L			05/08/18 12:00	20

Client Sample ID: AY10045 MW-1 DUP

Lab Sample ID: 400-152955-2

Date Collected: 04/23/18 12:40

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.7		2.0	0.60	mg/L			05/02/18 10:18	1
Fluoride	0.070	J	0.10	0.032	mg/L			05/03/18 12:55	1
Sulfate	610		100	28	mg/L			05/08/18 12:00	20

Client Sample ID: AY10046 MW-2

Lab Sample ID: 400-152955-3

Date Collected: 04/23/18 15:00

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.7		2.0	0.60	mg/L			05/02/18 10:18	1
Fluoride	0.19		0.10	0.032	mg/L			05/03/18 12:58	1
Sulfate	140		25	7.0	mg/L			05/08/18 11:31	5

Client Sample ID: AY10047 FB-1

Lab Sample ID: 400-152955-4

Date Collected: 04/23/18 15:20

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			05/08/18 07:51	1
Fluoride	<0.032		0.10	0.032	mg/L			05/03/18 13:02	1
Sulfate	<1.4		5.0	1.4	mg/L			05/08/18 10:26	1

Client Sample ID: AY10048 MW-10

Lab Sample ID: 400-152955-5

Date Collected: 04/24/18 09:55

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.9		2.0	0.60	mg/L			05/08/18 07:51	1
Fluoride	0.080	J	0.10	0.032	mg/L			05/03/18 13:04	1
Sulfate	27		5.0	1.4	mg/L			05/08/18 10:26	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10049 MW-11

Date Collected: 04/24/18 13:00

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.7		2.0	0.60	mg/L			05/08/18 07:51	1
Fluoride	0.050	J	0.10	0.032	mg/L			05/03/18 13:07	1
Sulfate	98		25	7.0	mg/L			05/08/18 12:04	5

Client Sample ID: AY10050 MW-12

Date Collected: 04/24/18 14:02

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-7

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.9		2.0	0.60	mg/L			05/08/18 07:51	1
Fluoride	<0.032		0.10	0.032	mg/L			05/03/18 13:11	1
Sulfate	210		50	14	mg/L			05/08/18 12:04	10

Client Sample ID: AY10051 MW-12 DUP

Date Collected: 04/24/18 14:02

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-8

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.0		2.0	0.60	mg/L			05/08/18 07:51	1
Fluoride	<0.032		0.10	0.032	mg/L			05/03/18 13:20	1
Sulfate	210		50	14	mg/L			05/08/18 12:04	10

Client Sample ID: AY10052 MW-3

Date Collected: 04/24/18 15:15

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-9

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.5		2.0	0.60	mg/L			05/08/18 07:51	1
Fluoride	0.050	J	0.10	0.032	mg/L			05/03/18 13:25	1
Sulfate	260		50	14	mg/L			05/08/18 11:34	10

Client Sample ID: AY10053 MW-4

Date Collected: 04/24/18 16:04

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-10

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.4		2.0	0.60	mg/L			05/08/18 07:58	1
Fluoride	0.20		0.10	0.032	mg/L			05/03/18 13:27	1
Sulfate	<1.4		5.0	1.4	mg/L			05/09/18 08:50	1

Client Sample ID: AY10054 FB-2

Date Collected: 04/24/18 16:25

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-11

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			05/08/18 07:58	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10054 FB-2

Lab Sample ID: 400-152955-11

Date Collected: 04/24/18 16:25

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			05/03/18 13:31	1
Sulfate	<1.4		5.0	1.4	mg/L			05/09/18 08:57	1

Client Sample ID: AY10055 MW-5

Lab Sample ID: 400-152955-12

Date Collected: 04/25/18 10:37

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.6		2.0	0.60	mg/L			05/08/18 07:58	1
Fluoride	0.050	J	0.10	0.032	mg/L			05/03/18 13:34	1
Sulfate	22		5.0	1.4	mg/L			05/09/18 08:57	1

Client Sample ID: AY10056 MW-6

Lab Sample ID: 400-152955-13

Date Collected: 04/25/18 11:47

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.1		2.0	0.60	mg/L			05/08/18 07:58	1
Fluoride	0.040	J	0.10	0.032	mg/L			05/03/18 13:36	1
Sulfate	13		5.0	1.4	mg/L			05/09/18 08:57	1

Client Sample ID: AY10057 MW-7

Lab Sample ID: 400-152955-14

Date Collected: 04/25/18 13:00

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.0		2.0	0.60	mg/L			05/08/18 07:58	1
Fluoride	0.070	J	0.10	0.032	mg/L			05/04/18 14:12	1
Sulfate	11		5.0	1.4	mg/L			05/09/18 08:57	1

Client Sample ID: AY10058 MW-8

Lab Sample ID: 400-152955-15

Date Collected: 04/25/18 14:15

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.3		2.0	0.60	mg/L			05/08/18 07:58	1
Fluoride	0.090	J	0.10	0.032	mg/L			05/04/18 14:14	1
Sulfate	7.9		5.0	1.4	mg/L			05/09/18 08:57	1

Client Sample ID: AY10059 MW-9

Lab Sample ID: 400-152955-16

Date Collected: 04/25/18 15:20

Matrix: Water

Date Received: 04/30/18 15:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.1		2.0	0.60	mg/L			05/08/18 07:58	1
Fluoride	0.12		0.10	0.032	mg/L			05/04/18 14:20	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10059 MW-9

Date Collected: 04/25/18 15:20

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-16

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	12		5.0	1.4	mg/L			05/09/18 08:57	1

Client Sample ID: AY10060 EB-1

Date Collected: 04/25/18 16:25

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-17

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			05/08/18 07:58	1
Fluoride	<0.032		0.10	0.032	mg/L			05/04/18 14:18	1
Sulfate	<1.4		5.0	1.4	mg/L			05/09/18 08:57	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10044 MW-1

Date Collected: 04/23/18 12:40

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396150	05/02/18 10:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 12:47	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	396824	05/08/18 12:00	RRC	TAL PEN

Client Sample ID: AY10045 MW-1 DUP

Date Collected: 04/23/18 12:40

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396150	05/02/18 10:18	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 12:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	396824	05/08/18 12:00	RRC	TAL PEN

Client Sample ID: AY10046 MW-2

Date Collected: 04/23/18 15:00

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396150	05/02/18 10:18	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 12:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	396824	05/08/18 11:31	RRC	TAL PEN

Client Sample ID: AY10047 FB-1

Date Collected: 04/23/18 15:20

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:02	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396824	05/08/18 10:26	RRC	TAL PEN

Client Sample ID: AY10048 MW-10

Date Collected: 04/24/18 09:55

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:04	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396824	05/08/18 10:26	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10049 MW-11

Lab Sample ID: 400-152955-6

Date Collected: 04/24/18 13:00

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:07	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	396824	05/08/18 12:04	RRC	TAL PEN

Client Sample ID: AY10050 MW-12

Lab Sample ID: 400-152955-7

Date Collected: 04/24/18 14:02

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:11	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	396824	05/08/18 12:04	RRC	TAL PEN

Client Sample ID: AY10051 MW-12 DUP

Lab Sample ID: 400-152955-8

Date Collected: 04/24/18 14:02

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:20	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	396824	05/08/18 12:04	RRC	TAL PEN

Client Sample ID: AY10052 MW-3

Lab Sample ID: 400-152955-9

Date Collected: 04/24/18 15:15

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:51	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:25	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	396824	05/08/18 11:34	RRC	TAL PEN

Client Sample ID: AY10053 MW-4

Lab Sample ID: 400-152955-10

Date Collected: 04/24/18 16:04

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:27	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396916	05/09/18 08:50	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10054 FB-2

Lab Sample ID: 400-152955-11

Date Collected: 04/24/18 16:25

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:31	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396916	05/09/18 08:57	RRC	TAL PEN

Client Sample ID: AY10055 MW-5

Lab Sample ID: 400-152955-12

Date Collected: 04/25/18 10:37

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:34	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396916	05/09/18 08:57	RRC	TAL PEN

Client Sample ID: AY10056 MW-6

Lab Sample ID: 400-152955-13

Date Collected: 04/25/18 11:47

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396332	05/03/18 13:36	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396916	05/09/18 08:57	RRC	TAL PEN

Client Sample ID: AY10057 MW-7

Lab Sample ID: 400-152955-14

Date Collected: 04/25/18 13:00

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396484	05/04/18 14:12	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396916	05/09/18 08:57	RRC	TAL PEN

Client Sample ID: AY10058 MW-8

Lab Sample ID: 400-152955-15

Date Collected: 04/25/18 14:15

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396484	05/04/18 14:14	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396916	05/09/18 08:57	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10059 MW-9

Lab Sample ID: 400-152955-16

Date Collected: 04/25/18 15:20

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396484	05/04/18 14:20	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396916	05/09/18 08:57	RRC	TAL PEN

Client Sample ID: AY10060 EB-1

Lab Sample ID: 400-152955-17

Date Collected: 04/25/18 16:25

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	396779	05/08/18 07:58	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	396484	05/04/18 14:18	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	396916	05/09/18 08:57	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

General Chemistry

Analysis Batch: 396150

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-1	AY10044 MW-1	Total/NA	Water	SM 4500 Cl- E	
400-152955-2	AY10045 MW-1 DUP	Total/NA	Water	SM 4500 Cl- E	
400-152955-3	AY10046 MW-2	Total/NA	Water	SM 4500 Cl- E	
MB 400-396150/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-396150/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-396150/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-152955-1 MS	AY10044 MW-1	Total/NA	Water	SM 4500 Cl- E	
400-152955-1 MSD	AY10044 MW-1	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 396332

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-1	AY10044 MW-1	Total/NA	Water	SM 4500 F C	
400-152955-2	AY10045 MW-1 DUP	Total/NA	Water	SM 4500 F C	
400-152955-3	AY10046 MW-2	Total/NA	Water	SM 4500 F C	
400-152955-4	AY10047 FB-1	Total/NA	Water	SM 4500 F C	
400-152955-5	AY10048 MW-10	Total/NA	Water	SM 4500 F C	
400-152955-6	AY10049 MW-11	Total/NA	Water	SM 4500 F C	
400-152955-7	AY10050 MW-12	Total/NA	Water	SM 4500 F C	
400-152955-8	AY10051 MW-12 DUP	Total/NA	Water	SM 4500 F C	
400-152955-9	AY10052 MW-3	Total/NA	Water	SM 4500 F C	
400-152955-10	AY10053 MW-4	Total/NA	Water	SM 4500 F C	
400-152955-11	AY10054 FB-2	Total/NA	Water	SM 4500 F C	
400-152955-12	AY10055 MW-5	Total/NA	Water	SM 4500 F C	
400-152955-13	AY10056 MW-6	Total/NA	Water	SM 4500 F C	
MB 400-396332/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-396332/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-152955-1 MS	AY10044 MW-1	Total/NA	Water	SM 4500 F C	
400-152955-1 MSD	AY10044 MW-1	Total/NA	Water	SM 4500 F C	
400-152955-8 DU	AY10051 MW-12 DUP	Total/NA	Water	SM 4500 F C	

Analysis Batch: 396484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-14	AY10057 MW-7	Total/NA	Water	SM 4500 F C	
400-152955-15	AY10058 MW-8	Total/NA	Water	SM 4500 F C	
400-152955-16	AY10059 MW-9	Total/NA	Water	SM 4500 F C	
400-152955-17	AY10060 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-396484/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-396484/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
240-94767-B-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
240-94767-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-152953-A-2 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 396779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-4	AY10047 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-152955-5	AY10048 MW-10	Total/NA	Water	SM 4500 Cl- E	
400-152955-6	AY10049 MW-11	Total/NA	Water	SM 4500 Cl- E	
400-152955-7	AY10050 MW-12	Total/NA	Water	SM 4500 Cl- E	
400-152955-8	AY10051 MW-12 DUP	Total/NA	Water	SM 4500 Cl- E	
400-152955-9	AY10052 MW-3	Total/NA	Water	SM 4500 Cl- E	
400-152955-10	AY10053 MW-4	Total/NA	Water	SM 4500 Cl- E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

General Chemistry (Continued)

Analysis Batch: 396779 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-11	AY10054 FB-2	Total/NA	Water	SM 4500 Cl- E	
400-152955-12	AY10055 MW-5	Total/NA	Water	SM 4500 Cl- E	
400-152955-13	AY10056 MW-6	Total/NA	Water	SM 4500 Cl- E	
400-152955-14	AY10057 MW-7	Total/NA	Water	SM 4500 Cl- E	
400-152955-15	AY10058 MW-8	Total/NA	Water	SM 4500 Cl- E	
400-152955-16	AY10059 MW-9	Total/NA	Water	SM 4500 Cl- E	
400-152955-17	AY10060 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-396779/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-396779/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-396779/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-152955-6 MS	AY10049 MW-11	Total/NA	Water	SM 4500 Cl- E	
400-152955-6 MSD	AY10049 MW-11	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 396824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-1	AY10044 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-152955-2	AY10045 MW-1 DUP	Total/NA	Water	SM 4500 SO4 E	
400-152955-3	AY10046 MW-2	Total/NA	Water	SM 4500 SO4 E	
400-152955-4	AY10047 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-152955-5	AY10048 MW-10	Total/NA	Water	SM 4500 SO4 E	
400-152955-6	AY10049 MW-11	Total/NA	Water	SM 4500 SO4 E	
400-152955-7	AY10050 MW-12	Total/NA	Water	SM 4500 SO4 E	
400-152955-8	AY10051 MW-12 DUP	Total/NA	Water	SM 4500 SO4 E	
400-152955-9	AY10052 MW-3	Total/NA	Water	SM 4500 SO4 E	
MB 400-396824/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-396824/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-396824/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-152955-1 MS	AY10044 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-152955-1 MSD	AY10044 MW-1	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 396916

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-10	AY10053 MW-4	Total/NA	Water	SM 4500 SO4 E	
400-152955-11	AY10054 FB-2	Total/NA	Water	SM 4500 SO4 E	
400-152955-12	AY10055 MW-5	Total/NA	Water	SM 4500 SO4 E	
400-152955-13	AY10056 MW-6	Total/NA	Water	SM 4500 SO4 E	
400-152955-14	AY10057 MW-7	Total/NA	Water	SM 4500 SO4 E	
400-152955-15	AY10058 MW-8	Total/NA	Water	SM 4500 SO4 E	
400-152955-16	AY10059 MW-9	Total/NA	Water	SM 4500 SO4 E	
400-152955-17	AY10060 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-396916/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-396916/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-396916/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-152955-10 MS	AY10053 MW-4	Total/NA	Water	SM 4500 SO4 E	
400-152955-10 MSD	AY10053 MW-4	Total/NA	Water	SM 4500 SO4 E	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-396150/6
Matrix: Water
Analysis Batch: 396150

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			05/02/18 10:08	1

Lab Sample ID: LCS 400-396150/7
Matrix: Water
Analysis Batch: 396150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.7		mg/L		106	90 - 110

Lab Sample ID: MRL 400-396150/3
Matrix: Water
Analysis Batch: 396150

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.52	J	mg/L		76	50 - 150

Lab Sample ID: 400-152955-1 MS
Matrix: Water
Analysis Batch: 396150

Client Sample ID: AY10044 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.9		10.0	16.4		mg/L		105	73 - 120

Lab Sample ID: 400-152955-1 MSD
Matrix: Water
Analysis Batch: 396150

Client Sample ID: AY10044 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	5.9		10.0	16.0		mg/L		101	73 - 120	2	8

Lab Sample ID: MB 400-396779/6
Matrix: Water
Analysis Batch: 396779

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			05/08/18 07:48	1

Lab Sample ID: LCS 400-396779/7
Matrix: Water
Analysis Batch: 396779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

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

Lab Sample ID: MRL 400-396779/3
Matrix: Water
Analysis Batch: 396779

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.42		mg/L		121	50 - 150

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Lab Sample ID: 400-152955-6 MS
Matrix: Water
Analysis Batch: 396779

Client Sample ID: AY10049 MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.7		10.0	16.0		mg/L		102	73 - 120

Lab Sample ID: 400-152955-6 MSD
Matrix: Water
Analysis Batch: 396779

Client Sample ID: AY10049 MW-11
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	5.7		10.0	16.0		mg/L		103	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-396332/3
Matrix: Water
Analysis Batch: 396332

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			05/03/18 12:35	1

Lab Sample ID: LCS 400-396332/4
Matrix: Water
Analysis Batch: 396332

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.84		mg/L		96	90 - 110

Lab Sample ID: 400-152955-1 MS
Matrix: Water
Analysis Batch: 396332

Client Sample ID: AY10044 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.070	J	1.00	1.08		mg/L		101	75 - 125

Lab Sample ID: 400-152955-1 MSD
Matrix: Water
Analysis Batch: 396332

Client Sample ID: AY10044 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.070	J	1.00	1.08		mg/L		101	75 - 125	0	4

Lab Sample ID: 400-152955-8 DU
Matrix: Water
Analysis Batch: 396332

Client Sample ID: AY10051 MW-12 DUP
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	<0.032		<0.032		mg/L		NC	4

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: MB 400-396484/3
Matrix: Water
Analysis Batch: 396484

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			05/04/18 13:49	1

Lab Sample ID: LCS 400-396484/4
Matrix: Water
Analysis Batch: 396484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.91		mg/L		98	90 - 110

Lab Sample ID: 240-94767-B-1 MS
Matrix: Water
Analysis Batch: 396484

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.2		1.00	2.20		mg/L		103	75 - 125

Lab Sample ID: 240-94767-B-1 MSD
Matrix: Water
Analysis Batch: 396484

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.2		1.00	2.16		mg/L		99	75 - 125	2	4

Lab Sample ID: 400-152953-A-2 DU
Matrix: Water
Analysis Batch: 396484

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.10		0.100		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-396824/6
Matrix: Water
Analysis Batch: 396824

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			05/08/18 10:12	1

Lab Sample ID: LCS 400-396824/7
Matrix: Water
Analysis Batch: 396824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.4		mg/L		103	90 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

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

Lab Sample ID: MRL 400-396824/3
Matrix: Water
Analysis Batch: 396824

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.92	J	mg/L		78	50 - 150

Lab Sample ID: 400-152955-1 MS
Matrix: Water
Analysis Batch: 396824

Client Sample ID: AY10044 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	640	F1	200	601	F1	mg/L		-18	77 - 128

Lab Sample ID: 400-152955-1 MSD
Matrix: Water
Analysis Batch: 396824

Client Sample ID: AY10044 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	640	F1	200	609	F1	mg/L		-14	77 - 128	1	5

Lab Sample ID: MB 400-396916/6
Matrix: Water
Analysis Batch: 396916

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			05/09/18 08:50	1

Lab Sample ID: LCS 400-396916/7
Matrix: Water
Analysis Batch: 396916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.7		mg/L		104	90 - 110

Lab Sample ID: MRL 400-396916/3
Matrix: Water
Analysis Batch: 396916

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.98	J	mg/L		80	50 - 150

Lab Sample ID: 400-152955-10 MS
Matrix: Water
Analysis Batch: 396916

Client Sample ID: AY10053 MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<1.4		10.0	11.1		mg/L		111	77 - 128

Lab Sample ID: 400-152955-10 MSD
Matrix: Water
Analysis Batch: 396916

Client Sample ID: AY10053 MW-4
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<1.4		10.0	11.6		mg/L		116	77 - 128	4	5

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
SDG: Gadsden Ash Pond 1147

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- 14

Chain of Custody Record

Client Information Client Contact: Ben Rothschild Phone: Sarah Copeland Lab PM: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com		Carrier Tracking No(s): COC No: 400-56525-24537.1 Page: Page 1 of 1 Job #: 152955							
Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6121 (Tel) Email: sgcopela@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1147		Analysis Requested Due Date Requested: TAT Requested (days): PO #: WO #: Project #: 40007143 SSO#:							
Sample Information Sample: Ben Rothschild Phone: Sarah Copeland Lab PM: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com		Total Number of containers:							
Sample Identification		Special Instructions/Note:							
AY10044	4/23/18	1240	Water	SM 4500 F.C	X	X	X	2	MW-1
AY10045	4/23/18	1240	Water	SM 4500 C.F.E	X	X	X	2	MW-1 Dup (Sample Duplicate)
AY10046	4/23/18	1500	Water	SM 4500 S.O.E	X	X	X	2	MW-2
AY10047	4/23/18	1520	Water	SM 4500 F.C	X	X	X	2	FB-1 (Field Blank)
AY10048	4/24/18	0955	Water	SM 4500 F.C	X	X	X	4	MW-10
AY10049	4/24/18	1300	Water	SM 4500 F.C	X	X	X	2	MW-11
AY10050	4/24/18	1402	Water	SM 4500 F.C	X	X	X	2	MW-12
AY10051	4/24/18	1402	Water	SM 4500 F.C	X	X	X	2	MW-12 Dup (Sample Duplicate)
AY10052	4/24/18	1515	Water	SM 4500 F.C	X	X	X	2	MW-3
AY10053	4/24/18	1604	Water	SM 4500 F.C	X	X	X	2	MW-4
AY10054	4/24/18	1625	Water	SM 4500 F.C	X	X	X	2	FB-2 (Field Blank)
AY10055	4/25/18	1037	Water	SM 4500 F.C	X	X	X	2	MW-5
AY10056	4/25/18	1147	Water	SM 4500 F.C	X	X	X	2	MW-6
AY10057	4/25/18	1300	Water	SM 4500 F.C	X	X	X	2	MW-7
AY10058	4/25/18	1415	Water	SM 4500 F.C	X	X	X	2	MW-8
AY10059	4/25/18	1520	Water	SM 4500 F.C	X	X	X	2	MW-9
AY10060	4/25/18	1625	Water	SM 4500 F.C	X	X	X	2	EB-1 (Equipment Blank)



Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested: I, II, III, IV, Other (specify)

Empty Kit Relinquished by: Sarah Copeland
 Date/Time: 4/30/2018, 0905
 Relinquished by: Sarah Copeland
 Date/Time: 5/11/18 0905
 Relinquished by: Sarah Copeland
 Date/Time: 5/11/18 0905

Method of Shipment: APC
 Date/Time: 5/30/18 1530
 Company: APC
 Date/Time: 5/11/18 0905
 Company: APC

Cooler Temperature(s) °C and Other Remarks: 0.0 C APC

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-152955-1
SDG Number: Gadsden Ash Pond 1147

Login Number: 152955

List Number: 1

Creator: Whitmire, Cheyenne R

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 IR-7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	COC not relinquished. Received in lab by e-mail.
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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-1
 SDG: Gadsden Ash Pond 1147

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	06-30-18
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	06-30-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	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
Louisiana	NELAP	6	30976	06-30-18
Louisiana (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
Texas	NELAP	6	T104704286-17-12	09-30-18
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-18
West Virginia DEP	State Program	3	136	06-30-18

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: 400-152955-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1147

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

5/30/2018 2:28:53 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
SDG: Gadsden Ash Pond 1147

Job ID: 400-152955-2

Laboratory: TestAmerica Pensacola

Narrative

**Job Narrative
400-152955-2**

Receipt Exceptions

Rad samples were received on 4/30/18 and anions were received on 05/01/18.

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Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
SDG: Gadsden Ash Pond 1147

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
SDG: Gadsden Ash Pond 1147

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-152955-1	AY10044 MW-1	Water	04/23/18 12:40	04/30/18 15:30
400-152955-2	AY10045 MW-1 DUP	Water	04/23/18 12:40	04/30/18 15:30
400-152955-3	AY10046 MW-2	Water	04/23/18 15:00	04/30/18 15:30
400-152955-4	AY10047 FB-1	Water	04/23/18 15:20	04/30/18 15:30
400-152955-5	AY10048 MW-10	Water	04/24/18 09:55	04/30/18 15:30
400-152955-6	AY10049 MW-11	Water	04/24/18 13:00	04/30/18 15:30
400-152955-7	AY10050 MW-12	Water	04/24/18 14:02	04/30/18 15:30
400-152955-8	AY10051 MW-12 DUP	Water	04/24/18 14:02	04/30/18 15:30
400-152955-9	AY10052 MW-3	Water	04/24/18 15:15	04/30/18 15:30
400-152955-10	AY10053 MW-4	Water	04/24/18 16:04	04/30/18 15:30
400-152955-11	AY10054 FB-2	Water	04/24/18 16:25	04/30/18 15:30
400-152955-12	AY10055 MW-5	Water	04/25/18 10:37	04/30/18 15:30
400-152955-13	AY10056 MW-6	Water	04/25/18 11:47	04/30/18 15:30
400-152955-14	AY10057 MW-7	Water	04/25/18 13:00	04/30/18 15:30
400-152955-15	AY10058 MW-8	Water	04/25/18 14:15	04/30/18 15:30
400-152955-16	AY10059 MW-9	Water	04/25/18 15:20	04/30/18 15:30
400-152955-17	AY10060 EB-1	Water	04/25/18 16:25	04/30/18 15:30

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10044 MW-1

Lab Sample ID: 400-152955-1

Date Collected: 04/23/18 12:40

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.117	U	0.0863	0.0869	1.00	0.119	pCi/L	05/04/18 14:50	05/28/18 17:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					05/04/18 14:50	05/28/18 17:00	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.170	U	0.316	0.316	1.00	0.587	pCi/L	05/04/18 15:33	05/15/18 17:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					05/04/18 15:33	05/15/18 17:07	1
Y Carrier	92.0		40 - 110					05/04/18 15:33	05/15/18 17:07	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0527	U	0.328	0.328	5.00	0.587	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10045 MW-1 DUP

Lab Sample ID: 400-152955-2

Date Collected: 04/23/18 12:40

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.154		0.0882	0.0893	1.00	0.106	pCi/L	05/04/18 14:50	05/28/18 17:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					05/04/18 14:50	05/28/18 17:00	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.569		0.352	0.356	1.00	0.541	pCi/L	05/04/18 15:33	05/15/18 17:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					05/04/18 15:33	05/15/18 17:07	1
Y Carrier	93.8		40 - 110					05/04/18 15:33	05/15/18 17:07	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.723		0.363	0.367	5.00	0.541	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10046 MW-2

Lab Sample ID: 400-152955-3

Date Collected: 04/23/18 15:00

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.147		0.0997	0.101	1.00	0.138	pCi/L	05/04/18 14:50	05/28/18 17:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					05/04/18 14:50	05/28/18 17:00	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.300	U	0.281	0.282	1.00	0.452	pCi/L	05/04/18 15:33	05/15/18 17:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					05/04/18 15:33	05/15/18 17:07	1
Y Carrier	95.7		40 - 110					05/04/18 15:33	05/15/18 17:07	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.447	U	0.298	0.300	5.00	0.452	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10047 FB-1

Lab Sample ID: 400-152955-4

Date Collected: 04/23/18 15:20

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0342	U	0.0554	0.0555	1.00	0.138	pCi/L	05/04/18 14:50	05/28/18 17:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					05/04/18 14:50	05/28/18 17:00	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.225	U	0.295	0.296	1.00	0.491	pCi/L	05/04/18 15:33	05/15/18 17:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					05/04/18 15:33	05/15/18 17:07	1
Y Carrier	95.7		40 - 110					05/04/18 15:33	05/15/18 17:07	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.191	U	0.300	0.301	5.00	0.491	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10048 MW-10

Lab Sample ID: 400-152955-5

Date Collected: 04/24/18 09:55

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.387		0.139	0.144	1.00	0.139	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.0		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0755	U	0.369	0.369	1.00	0.642	pCi/L	05/04/18 15:33	05/15/18 17:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.0		40 - 110					05/04/18 15:33	05/15/18 17:07	1
Y Carrier	92.0		40 - 110					05/04/18 15:33	05/15/18 17:07	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.463	U	0.394	0.396	5.00	0.642	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10049 MW-11

Lab Sample ID: 400-152955-6

Date Collected: 04/24/18 13:00

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.302		0.120	0.123	1.00	0.112	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.5		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.634		0.388	0.393	1.00	0.595	pCi/L	05/04/18 15:33	05/15/18 17:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	80.5		40 - 110					05/04/18 15:33	05/15/18 17:07	1
Y Carrier	94.6		40 - 110					05/04/18 15:33	05/15/18 17:07	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.935		0.406	0.412	5.00	0.595	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10050 MW-12

Lab Sample ID: 400-152955-7

Date Collected: 04/24/18 14:02

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0957	U	0.0797	0.0802	1.00	0.115	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.600	U	0.388	0.392	1.00	0.603	pCi/L	05/04/18 15:33	05/15/18 17:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					05/04/18 15:33	05/15/18 17:07	1
Y Carrier	94.6		40 - 110					05/04/18 15:33	05/15/18 17:07	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.695		0.396	0.400	5.00	0.603	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10051 MW-12 DUP

Lab Sample ID: 400-152955-8

Date Collected: 04/24/18 14:02

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0832	U	0.0818	0.0821	1.00	0.127	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.202	U	0.319	0.319	1.00	0.536	pCi/L	05/04/18 15:33	05/15/18 17:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					05/04/18 15:33	05/15/18 17:07	1
Y Carrier	93.1		40 - 110					05/04/18 15:33	05/15/18 17:07	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.285	U	0.329	0.329	5.00	0.536	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10052 MW-3

Lab Sample ID: 400-152955-9

Date Collected: 04/24/18 15:15

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.208		0.101	0.102	1.00	0.107	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.388	U	0.303	0.305	1.00	0.477	pCi/L	05/04/18 15:33	05/15/18 17:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.5		40 - 110					05/04/18 15:33	05/15/18 17:08	1
Y Carrier	95.3		40 - 110					05/04/18 15:33	05/15/18 17:08	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.596		0.319	0.322	5.00	0.477	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10053 MW-4

Lab Sample ID: 400-152955-10

Date Collected: 04/24/18 16:04

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.304		0.114	0.117	1.00	0.102	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.101	U	0.290	0.290	1.00	0.502	pCi/L	05/04/18 15:33	05/15/18 17:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					05/04/18 15:33	05/15/18 17:08	1
Y Carrier	93.5		40 - 110					05/04/18 15:33	05/15/18 17:08	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.405	U	0.312	0.313	5.00	0.502	pCi/L		05/30/18 13:21	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10054 FB-2

Lab Sample ID: 400-152955-11

Date Collected: 04/24/18 16:25

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0415	U	0.0479	0.0481	1.00	0.128	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.151	U	0.255	0.256	1.00	0.488	pCi/L	05/04/18 15:33	05/15/18 17:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.6		40 - 110					05/04/18 15:33	05/15/18 17:08	1
Y Carrier	95.7		40 - 110					05/04/18 15:33	05/15/18 17:08	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.192	U	0.259	0.260	5.00	0.488	pCi/L		05/30/18 13:25	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10055 MW-5

Lab Sample ID: 400-152955-12

Date Collected: 04/25/18 10:37

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.244		0.113	0.115	1.00	0.122	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.1		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0976	U	0.300	0.301	1.00	0.523	pCi/L	05/04/18 15:33	05/15/18 17:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	84.1		40 - 110					05/04/18 15:33	05/15/18 17:08	1
Y Carrier	93.5		40 - 110					05/04/18 15:33	05/15/18 17:08	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.341	U	0.321	0.322	5.00	0.523	pCi/L		05/30/18 13:25	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10056 MW-6

Lab Sample ID: 400-152955-13

Date Collected: 04/25/18 11:47

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0887	U	0.0754	0.0758	1.00	0.108	pCi/L	05/04/18 14:50	05/28/18 17:01	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		40 - 110					05/04/18 14:50	05/28/18 17:01	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.179	U	0.285	0.285	1.00	0.543	pCi/L	05/04/18 15:33	05/15/18 17:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.2		40 - 110					05/04/18 15:33	05/15/18 17:08	1
Y Carrier	91.6		40 - 110					05/04/18 15:33	05/15/18 17:08	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0902	U	0.295	0.295	5.00	0.543	pCi/L		05/30/18 13:25	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10057 MW-7

Lab Sample ID: 400-152955-14

Date Collected: 04/25/18 13:00

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0510	U	0.0726	0.0727	1.00	0.123	pCi/L	05/04/18 14:50	05/28/18 17:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					05/04/18 14:50	05/28/18 17:02	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0413	U	0.269	0.269	1.00	0.491	pCi/L	05/04/18 15:33	05/15/18 17:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					05/04/18 15:33	05/15/18 17:08	1
Y Carrier	93.5		40 - 110					05/04/18 15:33	05/15/18 17:08	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.00970	U	0.279	0.279	5.00	0.491	pCi/L		05/30/18 13:25	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10058 MW-8

Lab Sample ID: 400-152955-15

Date Collected: 04/25/18 14:15

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.199		0.102	0.104	1.00	0.116	pCi/L	05/04/18 14:50	05/28/18 17:02	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					05/04/18 14:50	05/28/18 17:02	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.451	U	0.336	0.338	1.00	0.527	pCi/L	05/04/18 15:33	05/15/18 17:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					05/04/18 15:33	05/15/18 17:09	1
Y Carrier	92.7		40 - 110					05/04/18 15:33	05/15/18 17:09	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.650		0.351	0.354	5.00	0.527	pCi/L		05/30/18 13:25	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10059 MW-9

Lab Sample ID: 400-152955-16

Date Collected: 04/25/18 15:20

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.147		0.0899	0.0909	1.00	0.114	pCi/L	05/04/18 14:50	05/28/18 16:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					05/04/18 14:50	05/28/18 16:56	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.421	U	0.320	0.323	1.00	0.502	pCi/L	05/04/18 15:33	05/15/18 17:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	87.6		40 - 110					05/04/18 15:33	05/15/18 17:09	1
Y Carrier	93.1		40 - 110					05/04/18 15:33	05/15/18 17:09	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.569		0.332	0.336	5.00	0.502	pCi/L		05/30/18 13:25	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10060 EB-1

Lab Sample ID: 400-152955-17

Date Collected: 04/25/18 16:25

Matrix: Water

Date Received: 04/30/18 15:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0200	U	0.0752	0.0753	1.00	0.145	pCi/L	05/04/18 14:50	05/28/18 16:56	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.1		40 - 110					05/04/18 14:50	05/28/18 16:56	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.370	U	0.317	0.319	1.00	0.634	pCi/L	05/04/18 15:33	05/15/18 17:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	79.1		40 - 110					05/04/18 15:33	05/15/18 17:09	1
Y Carrier	89.3		40 - 110					05/04/18 15:33	05/15/18 17:09	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.350	U	0.326	0.328	5.00	0.634	pCi/L		05/30/18 13:25	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
SDG: Gadsden Ash Pond 1147

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10044 MW-1

Date Collected: 04/23/18 12:40

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:00	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:07	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Client Sample ID: AY10045 MW-1 DUP

Date Collected: 04/23/18 12:40

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:00	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:07	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Client Sample ID: AY10046 MW-2

Date Collected: 04/23/18 15:00

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:00	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:07	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Client Sample ID: AY10047 FB-1

Date Collected: 04/23/18 15:20

Date Received: 04/30/18 15:30

Lab Sample ID: 400-152955-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:00	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:07	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10048 MW-10

Lab Sample ID: 400-152955-5

Date Collected: 04/24/18 09:55

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:07	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Client Sample ID: AY10049 MW-11

Lab Sample ID: 400-152955-6

Date Collected: 04/24/18 13:00

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:07	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Client Sample ID: AY10050 MW-12

Lab Sample ID: 400-152955-7

Date Collected: 04/24/18 14:02

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:07	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Client Sample ID: AY10051 MW-12 DUP

Lab Sample ID: 400-152955-8

Date Collected: 04/24/18 14:02

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:07	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10052 MW-3

Lab Sample ID: 400-152955-9

Date Collected: 04/24/18 15:15

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:08	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Client Sample ID: AY10053 MW-4

Lab Sample ID: 400-152955-10

Date Collected: 04/24/18 16:04

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:08	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:21	RTM	TAL SL

Client Sample ID: AY10054 FB-2

Lab Sample ID: 400-152955-11

Date Collected: 04/24/18 16:25

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:08	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:25	RTM	TAL SL

Client Sample ID: AY10055 MW-5

Lab Sample ID: 400-152955-12

Date Collected: 04/25/18 10:37

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:08	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:25	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10056 MW-6

Lab Sample ID: 400-152955-13

Date Collected: 04/25/18 11:47

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:01	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:08	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:25	RTM	TAL SL

Client Sample ID: AY10057 MW-7

Lab Sample ID: 400-152955-14

Date Collected: 04/25/18 13:00

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:02	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365714	05/15/18 17:08	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:25	RTM	TAL SL

Client Sample ID: AY10058 MW-8

Lab Sample ID: 400-152955-15

Date Collected: 04/25/18 14:15

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367759	05/28/18 17:02	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365715	05/15/18 17:09	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:25	RTM	TAL SL

Client Sample ID: AY10059 MW-9

Lab Sample ID: 400-152955-16

Date Collected: 04/25/18 15:20

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367761	05/28/18 16:56	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365715	05/15/18 17:09	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:25	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
SDG: Gadsden Ash Pond 1147

Client Sample ID: AY10060 EB-1

Lab Sample ID: 400-152955-17

Date Collected: 04/25/18 16:25

Matrix: Water

Date Received: 04/30/18 15:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			364092	05/04/18 14:50	ABB	TAL SL
Total/NA	Analysis	9315		1	367761	05/28/18 16:56	CDR	TAL SL
Total/NA	Prep	PrecSep_0			364096	05/04/18 15:33	ABB	TAL SL
Total/NA	Analysis	9320		1	365715	05/15/18 17:09	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	368075	05/30/18 13:25	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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Rad

Prep Batch: 364092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-1	AY10044 MW-1	Total/NA	Water	PrecSep-21	
400-152955-2	AY10045 MW-1 DUP	Total/NA	Water	PrecSep-21	
400-152955-3	AY10046 MW-2	Total/NA	Water	PrecSep-21	
400-152955-4	AY10047 FB-1	Total/NA	Water	PrecSep-21	
400-152955-5	AY10048 MW-10	Total/NA	Water	PrecSep-21	
400-152955-6	AY10049 MW-11	Total/NA	Water	PrecSep-21	
400-152955-7	AY10050 MW-12	Total/NA	Water	PrecSep-21	
400-152955-8	AY10051 MW-12 DUP	Total/NA	Water	PrecSep-21	
400-152955-9	AY10052 MW-3	Total/NA	Water	PrecSep-21	
400-152955-10	AY10053 MW-4	Total/NA	Water	PrecSep-21	
400-152955-11	AY10054 FB-2	Total/NA	Water	PrecSep-21	
400-152955-12	AY10055 MW-5	Total/NA	Water	PrecSep-21	
400-152955-13	AY10056 MW-6	Total/NA	Water	PrecSep-21	
400-152955-14	AY10057 MW-7	Total/NA	Water	PrecSep-21	
400-152955-15	AY10058 MW-8	Total/NA	Water	PrecSep-21	
400-152955-16	AY10059 MW-9	Total/NA	Water	PrecSep-21	
400-152955-17	AY10060 EB-1	Total/NA	Water	PrecSep-21	
MB 160-364092/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-364092/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-152955-5 DU	AY10048 MW-10	Total/NA	Water	PrecSep-21	

Prep Batch: 364096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-152955-1	AY10044 MW-1	Total/NA	Water	PrecSep_0	
400-152955-2	AY10045 MW-1 DUP	Total/NA	Water	PrecSep_0	
400-152955-3	AY10046 MW-2	Total/NA	Water	PrecSep_0	
400-152955-4	AY10047 FB-1	Total/NA	Water	PrecSep_0	
400-152955-5	AY10048 MW-10	Total/NA	Water	PrecSep_0	
400-152955-6	AY10049 MW-11	Total/NA	Water	PrecSep_0	
400-152955-7	AY10050 MW-12	Total/NA	Water	PrecSep_0	
400-152955-8	AY10051 MW-12 DUP	Total/NA	Water	PrecSep_0	
400-152955-9	AY10052 MW-3	Total/NA	Water	PrecSep_0	
400-152955-10	AY10053 MW-4	Total/NA	Water	PrecSep_0	
400-152955-11	AY10054 FB-2	Total/NA	Water	PrecSep_0	
400-152955-12	AY10055 MW-5	Total/NA	Water	PrecSep_0	
400-152955-13	AY10056 MW-6	Total/NA	Water	PrecSep_0	
400-152955-14	AY10057 MW-7	Total/NA	Water	PrecSep_0	
400-152955-15	AY10058 MW-8	Total/NA	Water	PrecSep_0	
400-152955-16	AY10059 MW-9	Total/NA	Water	PrecSep_0	
400-152955-17	AY10060 EB-1	Total/NA	Water	PrecSep_0	
MB 160-364096/21-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-364096/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-152955-5 DU	AY10048 MW-10	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-364092/21-A
Matrix: Water
Analysis Batch: 367761

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 364092

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.01087	U	0.0507	0.0507	1.00	0.117	pCi/L	05/04/18 14:50	05/28/18 16:56	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier		40 - 110						
Ba Carrier	87.3		40 - 110			05/04/18 14:50	05/28/18 16:56	1		

Lab Sample ID: LCS 160-364092/1-A
Matrix: Water
Analysis Batch: 367760

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 364092

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	15.7	15.36		1.59	1.00	0.133	pCi/L	98	68 - 137
Carrier	LCS LCS		Limits			Prepared	Analyzed	Dil Fac	
Ba Carrier	%Yield	Qualifier		40 - 110					
Ba Carrier	77.9		40 - 110						

Lab Sample ID: 400-152955-5 DU
Matrix: Water
Analysis Batch: 367759

Client Sample ID: AY10048 MW-10
Prep Type: Total/NA
Prep Batch: 364092

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					Limit
Radium-226	0.387		0.2978		0.120	1.00	0.113	pCi/L	0.34	1
Carrier	DU DU		Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier		40 - 110						
Ba Carrier	91.2		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-364096/21-A
Matrix: Water
Analysis Batch: 365715

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 364096

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.2194	U	0.269	0.269	1.00	0.445	pCi/L	05/04/18 15:33	05/15/18 17:09	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier		40 - 110						
Ba Carrier	87.3		40 - 110			05/04/18 15:33	05/15/18 17:09	1		
Y Carrier	%Yield	Qualifier	Limits			Prepared	Analyzed	Dil Fac		
Y Carrier	94.6		40 - 110			05/04/18 15:33	05/15/18 17:09	1		

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

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

Lab Sample ID: LCS 160-364096/1-A
Matrix: Water
Analysis Batch: 365714

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 364096

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	11.1	12.17		1.48	1.00	0.588	pCi/L	110	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	77.9		40 - 110
Y Carrier	92.0		40 - 110

Lab Sample ID: 400-152955-5 DU
Matrix: Water
Analysis Batch: 365714

Client Sample ID: AY10048 MW-10
Prep Type: Total/NA
Prep Batch: 364096

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.0755	U	-0.07385	U	0.298	1.00	0.545	pCi/L	0.22	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	91.2		40 - 110
Y Carrier	92.3		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-152955-5 DU
Matrix: Water
Analysis Batch: 368075

Client Sample ID: AY10048 MW-10
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.463	U	0.2240	U	0.321	5.00	0.545	pCi/L	0.33	

Chain of Custody Record

Client Information Client Contact: Ben Rothschild Phone: Sarah Copeland Lab PM: Whitmore, Cheyenne R E-Mail: cheyenne.whitmore@testamericainc.com		Carrier Tracking No(s): COC No: 400-56525-24537.1 Page: Page 1 of 1 Job #: 152955							
Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6121 (Tel) Email: sgcopela@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1147		Analysis Requested Due Date Requested: TAT Requested (days): PO #: WO #: Project #: 40007143 SSO#:							
Sample Information Sample: Ben Rothschild Phone: Sarah Copeland Lab PM: Whitmore, Cheyenne R E-Mail: cheyenne.whitmore@testamericainc.com		Total Number of containers:							
Sample Identification		Special Instructions/Note:							
AY10044	4/23/18	1240	Water	SM 4500 F.C	X	X	X	2	MW-1
AY10045	4/23/18	1240	Water	SM 4500 C.F.E	X	X	X	2	MW-1 Dup (Sample Duplicate)
AY10046	4/23/18	1500	Water	SM 4500 S.O.E	X	X	X	2	MW-2
AY10047	4/23/18	1520	Water	SM 4500 F.C	X	X	X	2	FB-1 (Field Blank)
AY10048	4/24/18	0955	Water	SM 4500 F.C	X	X	X	4	MW-10
AY10049	4/24/18	1300	Water	SM 4500 F.C	X	X	X	2	MW-11
AY10050	4/24/18	1402	Water	SM 4500 F.C	X	X	X	2	MW-12
AY10051	4/24/18	1402	Water	SM 4500 F.C	X	X	X	2	MW-12 Dup (Sample Duplicate)
AY10052	4/24/18	1515	Water	SM 4500 F.C	X	X	X	2	MW-3
AY10053	4/24/18	1604	Water	SM 4500 F.C	X	X	X	2	MW-4
AY10054	4/24/18	1625	Water	SM 4500 F.C	X	X	X	2	FB-2 (Field Blank)
AY10055	4/25/18	1037	Water	SM 4500 F.C	X	X	X	2	MW-5
AY10056	4/25/18	1147	Water	SM 4500 F.C	X	X	X	2	MW-6
AY10057	4/25/18	1300	Water	SM 4500 F.C	X	X	X	2	MW-7
AY10058	4/25/18	1415	Water	SM 4500 F.C	X	X	X	2	MW-8
AY10059	4/25/18	1520	Water	SM 4500 F.C	X	X	X	2	MW-9
AY10060	4/25/18	1625	Water	SM 4500 F.C	X	X	X	2	EB-1 (Equipment Blank)



Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested: I, II, III, IV, Other (specify)

Empty Kit Relinquished by: Sarah Copeland
 Relinquished by: Sarah Copeland
 Relinquished by:
 Relinquished by:

Date: 4/30/2018, 0905
 Date/Time: 5/1/18 0905
 Date/Time:

Method of Shipment:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements:

Cooler Temperature(s) °C and Other Remarks: 0.0 C JPC



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-152955-2
SDG Number: Gadsden Ash Pond 1147

Login Number: 152955

List Number: 1

Creator: Whitmire, Cheyenne R

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-152955-2
SDG Number: Gadsden Ash Pond 1147

Login Number: 152955
List Number: 2
Creator: Taylor, Kristene N

List Source: TestAmerica St. Louis
List Creation: 05/03/18 09:15 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	17.0
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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
 SDG: Gadsden Ash Pond 1147

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	06-30-18
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	06-30-18
Florida	NELAP	4	E81010	06-30-18
Georgia	State Program	4	N/A	06-30-18
Illinois	NELAP	5	200041	10-09-18
Iowa	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
Louisiana	NELAP	6	30976	06-30-18
Louisiana (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
USDA	Federal		P330-16-00172	05-24-19
Virginia	NELAP	3	460166	06-14-18
Washington	State Program	10	C915	05-15-19

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	06-30-18 *
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
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
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
New Jersey	NELAP	2	MO002	06-30-18 *
New York	NELAP	2	11616	03-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-152955-2
SDG: Gadsden Ash Pond 1147

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
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 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1156
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks & Greg Dyer
Released By : Sarah Copeland
sgcopela@southernco.com
(205) 664-6121

The following data has been reviewed and approved by:

Quality Control: Sarah
Copeland

Digitally signed by Sarah Copeland
DN: cn=Sarah Copeland, o, ou,
email=sgcopela@southernco.com,
c=US
Date: 2018.07.16 09:56:48 -05'00'

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.07.24 14:00:22 -05'00'



Metals ICP

Gadsden Ash Pond

WMWGADAP_1156

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY15234	623248	WMWGADAP_1156
AY15235	623248	WMWGADAP_1156
AY15236	623248	WMWGADAP_1156
AY15237	623248	WMWGADAP_1156
AY15238	623248	WMWGADAP_1156
AY15239	623248	WMWGADAP_1156
AY15240	623248	WMWGADAP_1156
AY15241	623248	WMWGADAP_1156
AY15242	623248	WMWGADAP_1156
AY15243	623248	WMWGADAP_1156
AY15244	623249	WMWGADAP_1156
AY15245	623249	WMWGADAP_1156
AY15246	623249	WMWGADAP_1156
AY15247	623249	WMWGADAP_1156
AY15248	623249	WMWGADAP_1156
AY15249	623249	WMWGADAP_1156
AY15250	623249	WMWGADAP_1156
AY15251	623249	WMWGADAP_1156
AY15252	623249	WMWGADAP_1156
AY15253	623249	WMWGADAP_1156
AY15254	623250	WMWGADAP_1156

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and passed.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.



- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.

7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects. The following samples were diluted due to analyzed sample concentration over the high standard of the calibration curve.

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AY15240	Calcium	x10.15
AY15251	Calcium	x10.15

8. The raw data results include results corrected for dilution.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1156

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY15234	623226	WMWGADAP_1156
AY15235	623226	WMWGADAP_1156
AY15236	623226	WMWGADAP_1156
AY15237	623226	WMWGADAP_1156
AY15238	623226	WMWGADAP_1156
AY15239	623226	WMWGADAP_1156
AY15240	623226	WMWGADAP_1156
AY15241	623226	WMWGADAP_1156
AY15242	623226	WMWGADAP_1156
AY15243	623226	WMWGADAP_1156
AY15244	623227	WMWGADAP_1156
AY15245	623227	WMWGADAP_1156
AY15246	623227	WMWGADAP_1156
AY15247	623227	WMWGADAP_1156
AY15248	623227	WMWGADAP_1156
AY15249	623227	WMWGADAP_1156
AY15250	623227	WMWGADAP_1156
AY15251	623227	WMWGADAP_1156
AY15252	623227	WMWGADAP_1156
AY15253	623227	WMWGADAP_1156
AY15254	623228	WMWGADAP_1156

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.



- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a dilution of 1 to 5 to compensate for any matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1156

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY15234	623346	WMWGADAP_1156
AY15235	623346	WMWGADAP_1156
AY15236	623346	WMWGADAP_1156
AY15237	623346	WMWGADAP_1156
AY15238	623346	WMWGADAP_1156
AY15239	623346	WMWGADAP_1156
AY15240	623346	WMWGADAP_1156
AY15241	623346	WMWGADAP_1156
AY15242	623346	WMWGADAP_1156
AY15243	623346	WMWGADAP_1156
AY15244	623347	WMWGADAP_1156
AY15245	623347	WMWGADAP_1156
AY15246	623347	WMWGADAP_1156
AY15247	623347	WMWGADAP_1156
AY15248	623347	WMWGADAP_1156
AY15249	623347	WMWGADAP_1156
AY15250	623347	WMWGADAP_1156
AY15251	623347	WMWGADAP_1156
AY15252	623347	WMWGADAP_1156
AY15253	623347	WMWGADAP_1156
AY15254	623348	WMWGADAP_1156

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.



- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.
- AY15234 was verified for Mercury in a separate batch. The second result confirmed the first and the original result is reported.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1156

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY15234	623344	WMWGADAP_1156
AY15235	623491	WMWGADAP_1156
AY15236	623491	WMWGADAP_1156
AY15237	623491	WMWGADAP_1156
AY15238	623491	WMWGADAP_1156
AY15239	623491	WMWGADAP_1156
AY15240	623344	WMWGADAP_1156
AY15241	623344	WMWGADAP_1156
AY15242	623344	WMWGADAP_1156
AY15243	623344	WMWGADAP_1156
AY15244	623344	WMWGADAP_1156
AY15245	623344	WMWGADAP_1156
AY15246	623344	WMWGADAP_1156
AY15247	623344	WMWGADAP_1156
AY15248	623344	WMWGADAP_1156
AY15249	623491	WMWGADAP_1156
AY15250	623491	WMWGADAP_1156
AY15251	623491	WMWGADAP_1156
AY15252	623491	WMWGADAP_1156
AY15253	623492	WMWGADAP_1156
AY15254	623491	WMWGADAP_1156

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Case Narrative



General Quality Control Procedures:

- A blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- All samples were between 2.5mg and 200mg residue, except for AY15239, AY15247, and AY15254 which was < 2.5mg residue requirement. Max volume of 150mL filtered.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY15234

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00165	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0338	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	J 0.00134	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	16.6	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000640	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0382	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	0.000661	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00158	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	219	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY15234

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115		102	70 to 130		2.57	20
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115		95.4	70 to 130		3.23	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115		93.9	70 to 130		3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15		96.6	70 to 130		0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115		85.1	70 to 130		4.67	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115		101	70 to 130		8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115		103	70 to 130		3.95	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23		101	70 to 130		0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115		94.7	70 to 130		0.203	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115		98.7	70 to 130		1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75		97.1	70 to 130		0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115		97.1	70 to 130		2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115		83.8	70 to 130		4.58	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115		98.9	70 to 130		3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046		95.7	70 to 130		0.0627	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY15234

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60		1.91	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY15235

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.115	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	39.4	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	144	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY15235

Sample	Analysis	Units	MB	MB			MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike	MS				Limit	Rec	Limit	Prec		
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115	102	70 to 130	2.57	20		
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115	95.4	70 to 130	3.23	20		
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115	93.9	70 to 130	3.19	20		
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15	96.6	70 to 130	0.187	20		
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115	85.1	70 to 130	4.67	20		
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115	101	70 to 130	8.53	20		
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115	103	70 to 130	3.95	20		
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115	98.7	70 to 130	1.30	20		
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75	97.1	70 to 130	0.137	20		
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115	97.1	70 to 130	2.61	20		
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115	83.8	70 to 130	4.58	20		
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115	98.9	70 to 130	3.19	20		
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046	95.7	70 to 130	0.0627	20		
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23	101	70 to 130	0.380	20		
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115	94.7	70 to 130	0.203	20		

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY15235

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
				Limit			Duplicate	LCS	Limit	Limit		Limit
AY15252	Solids, Dissolved	mg/L	1.00	25			418	48.0	40 to 60		0.358	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY15236

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.154	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	4.56	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000304	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	J 0.00341	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	48.7	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY15236

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115		95.4	70 to 130	3.23	20
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115		102	70 to 130	2.57	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23		101	70 to 130	0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115		94.7	70 to 130	0.203	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115		101	70 to 130	8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115		103	70 to 130	3.95	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115		98.7	70 to 130	1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75		97.1	70 to 130	0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115		97.1	70 to 130	2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115		83.8	70 to 130	4.58	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115		93.9	70 to 130	3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15		96.6	70 to 130	0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115		85.1	70 to 130	4.67	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115		98.9	70 to 130	3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046		95.7	70 to 130	0.0627	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY15236

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY15252	Solids, Dissolved	mg/L	1.00	25			418	48.0	40 to 60			0.358	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY15237

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0298	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	3.89	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	44.0	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY15237

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115	95.4	70 to 130	3.23	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115	101	70 to 130	8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115	103	70 to 130	3.95	20
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115	102	70 to 130	2.57	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115	98.9	70 to 130	3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046	95.7	70 to 130	0.0627	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115	93.9	70 to 130	3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15	96.6	70 to 130	0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115	85.1	70 to 130	4.67	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23	101	70 to 130	0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115	94.7	70 to 130	0.203	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115	98.7	70 to 130	1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75	97.1	70 to 130	0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115	97.1	70 to 130	2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115	83.8	70 to 130	4.58	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY15237

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY15252	Solids, Dissolved	mg/L	1.00	25			418	48.0	40 to 60			0.358	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY15238

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00419	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.307	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	J 0.0903	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	37.1	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	194	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY15238

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115	102	70 to 130	2.57	20
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115	95.4	70 to 130	3.23	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115	93.9	70 to 130	3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15	96.6	70 to 130	0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115	85.1	70 to 130	4.67	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115	101	70 to 130	8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115	103	70 to 130	3.95	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115	98.9	70 to 130	3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046	95.7	70 to 130	0.0627	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23	101	70 to 130	0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115	94.7	70 to 130	0.203	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115	98.7	70 to 130	1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75	97.1	70 to 130	0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115	97.1	70 to 130	2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115	83.8	70 to 130	4.58	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY15238

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY15252	Solids, Dissolved	mg/L	1.00	25			418	48.0	40 to 60			0.358	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY15239

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY15239

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115	95.4	70 to 130	3.23	20
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115	102	70 to 130	2.57	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115	101	70 to 130	8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115	103	70 to 130	3.95	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23	101	70 to 130	0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115	94.7	70 to 130	0.203	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115	93.9	70 to 130	3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15	96.6	70 to 130	0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115	85.1	70 to 130	4.67	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115	98.7	70 to 130	1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75	97.1	70 to 130	0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115	97.1	70 to 130	2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115	83.8	70 to 130	4.58	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115	98.9	70 to 130	3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046	95.7	70 to 130	0.0627	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY15239

Sample	Analysis	Units	MB	MB Limit	Spike	LFM	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AY15252	Solids, Dissolved	mg/L	1.00	25			418	48.0	40 to 60			0.358	5

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY15240

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00306	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0479	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	1.25	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		10.15	1.015	5.075	268	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0224	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		100	1250	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY15240

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec	Limit
			MB	Limit						Rec	Limit		
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115	95.4	70 to 130	3.23	20
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115	102	70 to 130	2.57	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115	98.9	70 to 130	3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046	95.7	70 to 130	0.0627	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115	98.7	70 to 130	1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75	97.1	70 to 130	0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115	97.1	70 to 130	2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115	83.8	70 to 130	4.58	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23	101	70 to 130	0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115	94.7	70 to 130	0.203	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115	101	70 to 130	8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115	103	70 to 130	3.95	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115	93.9	70 to 130	3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15	96.6	70 to 130	0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115	85.1	70 to 130	4.67	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY15240

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60		1.91	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY15241

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0604	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	J 0.0571	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	17.8	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	106	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY15241

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115	95.4	70 to 130	3.23	20
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115	102	70 to 130	2.57	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23	101	70 to 130	0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115	94.7	70 to 130	0.203	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115	93.9	70 to 130	3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15	96.6	70 to 130	0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115	85.1	70 to 130	4.67	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115	101	70 to 130	8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115	103	70 to 130	3.95	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115	98.7	70 to 130	1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75	97.1	70 to 130	0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115	97.1	70 to 130	2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115	83.8	70 to 130	4.58	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115	98.9	70 to 130	3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046	95.7	70 to 130	0.0627	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY15241

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60		1.91	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
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 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-6 Dup

Laboratory ID Number: AY15242

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0574	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	J 0.0549	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	17.9	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	104	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-6 Dup

Laboratory ID Number: AY15242

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115	95.4	70 to 130	3.23	20
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115	102	70 to 130	2.57	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115	98.9	70 to 130	3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046	95.7	70 to 130	0.0627	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115	101	70 to 130	8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115	103	70 to 130	3.95	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115	98.7	70 to 130	1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75	97.1	70 to 130	0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115	97.1	70 to 130	2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115	83.8	70 to 130	4.58	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23	101	70 to 130	0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115	94.7	70 to 130	0.203	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115	93.9	70 to 130	3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15	96.6	70 to 130	0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115	85.1	70 to 130	4.67	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-6 Dup

Laboratory ID Number: AY15242

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60	1.91	5

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Expiration: June 30, 2019

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
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 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY15243

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0799	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/3/2018	EPA 200.7		2.03	0.02	0.1	J 0.0940	mg/L
* Calcium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.1	0.5	21.8	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/3/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	129	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY15243

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY15243	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.175	0.181	0.0989	0.085 to 0.115	95.4	70 to 130	3.23	20
AY15243	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.102	0.104	0.108	0.085 to 0.115	102	70 to 130	2.57	20
AY15243	Lithium, Total	mg/L	0.00000277	0.022	0.20	0.201	0.201	0.192	0.17 to 0.23	101	70 to 130	0.380	20
AY15243	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0947	0.0949	0.0947	0.085 to 0.115	94.7	70 to 130	0.203	20
AY15243	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0939	0.0970	0.0995	0.085 to 0.115	93.9	70 to 130	3.19	20
AY15243	Boron, Total	mg/L	0.000328	0.044	1.00	1.06	1.06	0.955	0.85 to 1.15	96.6	70 to 130	0.187	20
AY15243	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0851	0.0892	0.0966	0.085 to 0.115	85.1	70 to 130	4.67	20
AY15243	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.0989	0.102	0.101	0.085 to 0.115	98.9	70 to 130	3.19	20
AY15243	Mercury, Total by CVAA	mg/L	0.0000181	0.0005	0.004	0.00383	0.00383	0.00387	0.0034 to 0.0046	95.7	70 to 130	0.0627	20
AY15243	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.101	0.110	0.107	0.085 to 0.115	101	70 to 130	8.53	20
AY15243	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.103	0.107	0.107	0.085 to 0.115	103	70 to 130	3.95	20
AY15243	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0987	0.1000	0.101	0.085 to 0.115	98.7	70 to 130	1.30	20
AY15243	Calcium, Total	mg/L	-0.00393	0.22	5.00	26.7	26.6	4.92	4.25 to 5.75	97.1	70 to 130	0.137	20
AY15243	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0971	0.0996	0.101	0.085 to 0.115	97.1	70 to 130	2.61	20
AY15243	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0838	0.0877	0.101	0.085 to 0.115	83.8	70 to 130	4.58	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY15243

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60		1.91	5

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY15244

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00265	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.181	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	J 0.0634	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	57.7	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	232	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY15244

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115		96.0	70 to 130	1.21	20
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15		97.9	70 to 130	0.566	20
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115		87.3	70 to 130	0.134	20
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115		95.6	70 to 130	0.648	20
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115		89.3	70 to 130	0.612	20
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046		97.2	70 to 130	0.495	20
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75		88.0	70 to 130	0.300	20
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115		98.2	70 to 130	2.26	20
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115		106	70 to 130	0.840	20
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115		105	70 to 130	1.91	20
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115		106	70 to 130	4.56	20
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115		99.9	70 to 130	2.47	20
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115		95.4	70 to 130	1.31	20
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115		101	70 to 130	0.238	20
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23		106	70 to 130	1.17	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY15244

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60	1.91	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY15245

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.160	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	J 0.0568	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	39.9	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	191	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY15245

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115	96.0	70 to 130	1.21	20
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15	97.9	70 to 130	0.566	20
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115	87.3	70 to 130	0.134	20
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115	105	70 to 130	1.91	20
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115	106	70 to 130	4.56	20
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115	95.6	70 to 130	0.648	20
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115	89.3	70 to 130	0.612	20
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046	97.2	70 to 130	0.495	20
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115	99.9	70 to 130	2.47	20
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115	95.4	70 to 130	1.31	20
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115	101	70 to 130	0.238	20
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23	106	70 to 130	1.17	20
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75	88.0	70 to 130	0.300	20
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115	98.2	70 to 130	2.26	20
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115	106	70 to 130	0.840	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY15245

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60		1.91	5

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Expiration: June 30, 2019

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY15246

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	0.0132	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.208	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	0.444	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	26.2	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0242	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	180	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY15246

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115		96.0	70 to 130	1.21	20
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15		97.9	70 to 130	0.566	20
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115		87.3	70 to 130	0.134	20
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115		99.9	70 to 130	2.47	20
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115		95.4	70 to 130	1.31	20
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115		101	70 to 130	0.238	20
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23		106	70 to 130	1.17	20
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115		95.6	70 to 130	0.648	20
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115		89.3	70 to 130	0.612	20
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046		97.2	70 to 130	0.495	20
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75		88.0	70 to 130	0.300	20
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115		98.2	70 to 130	2.26	20
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115		106	70 to 130	0.840	20
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115		105	70 to 130	1.91	20
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115		106	70 to 130	4.56	20

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Laboratory certification ID: E571114

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 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY15246

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60		1.91	5

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 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY15247

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY15247

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit
				Limit	Spike					Rec	Limit		
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115	96.0	70 to 130	1.21	20
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15	97.9	70 to 130	0.566	20
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115	87.3	70 to 130	0.134	20
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115	105	70 to 130	1.91	20
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115	106	70 to 130	4.56	20
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115	95.6	70 to 130	0.648	20
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115	89.3	70 to 130	0.612	20
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046	97.2	70 to 130	0.495	20
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75	88.0	70 to 130	0.300	20
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115	98.2	70 to 130	2.26	20
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115	106	70 to 130	0.840	20
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115	99.9	70 to 130	2.47	20
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115	95.4	70 to 130	1.31	20
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115	101	70 to 130	0.238	20
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23	106	70 to 130	1.17	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 26-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY15247

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY15248	Solids, Dissolved	mg/L	-5.00	25			187	55.0	40 to 60		1.91	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY15248

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.249	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	0.446	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	36.9	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	J 0.00218	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	7/3/2018	SM 2540C		1		25	180	mg/L
Filter Completion Date	KRC	6/29/2018	SM 2540C		1			6/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY15248

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115	96.0	70 to 130	1.21	20	
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115	99.9	70 to 130	2.47	20	
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115	95.4	70 to 130	1.31	20	
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115	101	70 to 130	0.238	20	
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23	106	70 to 130	1.17	20	
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115	105	70 to 130	1.91	20	
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115	106	70 to 130	4.56	20	
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75	88.0	70 to 130	0.300	20	
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115	98.2	70 to 130	2.26	20	
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115	106	70 to 130	0.840	20	
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115	95.6	70 to 130	0.648	20	
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115	89.3	70 to 130	0.612	20	
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046	97.2	70 to 130	0.495	20	
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15	97.9	70 to 130	0.566	20	
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115	87.3	70 to 130	0.134	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY15248

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec
								Duplicate	LCS			Limit	Limit		Limit
AY15248	Solids, Dissolved	mg/L	-5.00		25			187	55.0		40 to 60			1.91	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY15249

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0453	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	0.982	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	80.8	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0234	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	486	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY15249

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115	96.0	70 to 130	1.21	20
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15	97.9	70 to 130	0.566	20
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115	87.3	70 to 130	0.134	20
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115	99.9	70 to 130	2.47	20
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115	95.4	70 to 130	1.31	20
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115	101	70 to 130	0.238	20
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23	106	70 to 130	1.17	20
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115	105	70 to 130	1.91	20
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115	106	70 to 130	4.56	20
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115	95.6	70 to 130	0.648	20
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115	89.3	70 to 130	0.612	20
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046	97.2	70 to 130	0.495	20
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75	88.0	70 to 130	0.300	20
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115	98.2	70 to 130	2.26	20
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115	106	70 to 130	0.840	20

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY15249

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY15252	Solids, Dissolved	mg/L	1.00	25			418	48.0	40 to 60		0.358	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-3 Dup

Laboratory ID Number: AY15250

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0461	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	0.992	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	81.2	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0238	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	482	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-3 Dup

Laboratory ID Number: AY15250

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115	96.0	70 to 130	1.21	20
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75	88.0	70 to 130	0.300	20
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115	98.2	70 to 130	2.26	20
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115	106	70 to 130	0.840	20
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15	97.9	70 to 130	0.566	20
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115	87.3	70 to 130	0.134	20
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115	105	70 to 130	1.91	20
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115	106	70 to 130	4.56	20
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115	99.9	70 to 130	2.47	20
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115	95.4	70 to 130	1.31	20
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115	101	70 to 130	0.238	20
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23	106	70 to 130	1.17	20
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115	95.6	70 to 130	0.648	20
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115	89.3	70 to 130	0.612	20
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046	97.2	70 to 130	0.495	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-3 Dup

Laboratory ID Number: AY15250

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec	Limit
								Duplicate	LCS			Limit	Limit			
AY15252	Solids, Dissolved	mg/L	1.00		25			418	48.0		40 to 60			0.358		5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY15251

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	1.01	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0578	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	0.619	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		10.15	1.015	5.075	99.4	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0362	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	0.0734	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0302	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	440	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY15251

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115	96.0	70 to 130	1.21	20	
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115	99.9	70 to 130	2.47	20	
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115	95.4	70 to 130	1.31	20	
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115	101	70 to 130	0.238	20	
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23	106	70 to 130	1.17	20	
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115	95.6	70 to 130	0.648	20	
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115	89.3	70 to 130	0.612	20	
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046	97.2	70 to 130	0.495	20	
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115	105	70 to 130	1.91	20	
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115	106	70 to 130	4.56	20	
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75	88.0	70 to 130	0.300	20	
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115	98.2	70 to 130	2.26	20	
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115	106	70 to 130	0.840	20	
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15	97.9	70 to 130	0.566	20	
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115	87.3	70 to 130	0.134	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY15251

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec	Limit
								Duplicate	LCS			Limit	Limit			
AY15252	Solids, Dissolved	mg/L	1.00		25			418	48.0		40 to 60			0.358		5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY15252

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.0466	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	J 0.0539	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	56.3	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000732	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	J 0.00266	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	421	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY15252

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115	96.0	70 to 130	1.21	20
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15	97.9	70 to 130	0.566	20
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115	87.3	70 to 130	0.134	20
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115	99.9	70 to 130	2.47	20
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115	95.4	70 to 130	1.31	20
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115	101	70 to 130	0.238	20
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23	106	70 to 130	1.17	20
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115	95.6	70 to 130	0.648	20
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115	89.3	70 to 130	0.612	20
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046	97.2	70 to 130	0.495	20
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115	105	70 to 130	1.91	20
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115	106	70 to 130	4.56	20
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75	88.0	70 to 130	0.300	20
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115	98.2	70 to 130	2.26	20
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115	106	70 to 130	0.840	20

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY15252

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY15252	Solids, Dissolved	mg/L	1.00	25			418	48.0	40 to 60		0.358	5

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Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY15253

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	J 0.00289	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	0.338	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	0.111	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	73.1	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	333	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY15253

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY15253	Molybdenum, Total	mg/L	0.0000109	0.0044	0.10	0.0960	0.0948	0.0947	0.085 to 0.115	96.0	70 to 130	1.21	20	
AY15253	Calcium, Total	mg/L	-0.00160	0.22	5.00	77.5	77.7	5.01	4.25 to 5.75	88.0	70 to 130	0.300	20	
AY15253	Cobalt, Total	mg/L	0.0000114	0.0044	0.10	0.0982	0.0960	0.101	0.085 to 0.115	98.2	70 to 130	2.26	20	
AY15253	Selenium, Total	mg/L	0.0000642	0.0044	0.10	0.106	0.105	0.107	0.085 to 0.115	106	70 to 130	0.840	20	
AY15253	Beryllium, Total	mg/L	0.0000158	0.00132	0.10	0.0956	0.0950	0.0995	0.085 to 0.115	95.6	70 to 130	0.648	20	
AY15253	Lead, Total	mg/L	0.0000219	0.0022	0.10	0.0893	0.0888	0.0966	0.085 to 0.115	89.3	70 to 130	0.612	20	
AY15253	Mercury, Total by CVAA	mg/L	0.0000183	0.0005	0.004	0.00389	0.00387	0.00385	0.0034 to 0.0046	97.2	70 to 130	0.495	20	
AY15253	Boron, Total	mg/L	0.00120	0.044	1.00	1.09	1.10	0.968	0.85 to 1.15	97.9	70 to 130	0.566	20	
AY15253	Thallium, Total	mg/L	0.0000186	0.00044	0.10	0.0873	0.0872	0.101	0.085 to 0.115	87.3	70 to 130	0.134	20	
AY15253	Antimony, Total	mg/L	0.0000665	0.00132	0.10	0.0999	0.0975	0.101	0.085 to 0.115	99.9	70 to 130	2.47	20	
AY15253	Barium, Total	mg/L	-0.00000790	0.0044	0.10	0.434	0.439	0.0989	0.085 to 0.115	95.4	70 to 130	1.31	20	
AY15253	Chromium, Total	mg/L	0.0000371	0.0044	0.10	0.101	0.101	0.101	0.085 to 0.115	101	70 to 130	0.238	20	
AY15253	Lithium, Total	mg/L	-0.0000471	0.022	0.20	0.212	0.214	0.191	0.17 to 0.23	106	70 to 130	1.17	20	
AY15253	Arsenic, Total	mg/L	0.00000715	0.0022	0.10	0.108	0.106	0.108	0.085 to 0.115	105	70 to 130	1.91	20	
AY15253	Cadmium, Total	mg/L	0.0000253	0.00066	0.10	0.106	0.101	0.107	0.085 to 0.115	106	70 to 130	4.56	20	

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY15253

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY15253	Solids, Dissolved	mg/L	1.00	25			328	48.0	40 to 60		0.756	5

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Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY15254

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	7/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/5/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	7/5/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/5/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	7/2/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/6/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	KRC	7/3/2018	SM 2540C		1			7/03/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY15254

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY15254	Barium, Total	mg/L	0.00000365	0.0044	0.10	0.102	0.0975	0.0980	0.085 to 0.115	102	70 to 130	4.42	20	
AY15254	Antimony, Total	mg/L	0.0000705	0.00132	0.10	0.0992	0.0993	0.102	0.085 to 0.115	99.2	70 to 130	0.137	20	
AY15254	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0940	0.0941	0.0969	0.085 to 0.115	94.0	70 to 130	0.181	20	
AY15254	Lead, Total	mg/L	0.0000262	0.0022	0.10	0.0875	0.0869	0.0943	0.085 to 0.115	87.5	70 to 130	0.627	20	
AY15254	Chromium, Total	mg/L	0.0000182	0.0044	0.10	0.0996	0.0985	0.102	0.085 to 0.115	99.6	70 to 130	1.13	20	
AY15254	Lithium, Total	mg/L	-0.000049	0.022	0.20	0.196	0.197	0.192	0.17 to 0.23	98.0	70 to 130	0.400	20	
AY15254	Boron, Total	mg/L	-0.00036	0.044	1.00	0.974	0.975	0.965	0.85 to 1.15	97.4	70 to 130	0.104	20	
AY15254	Cadmium, Total	mg/L	0.000	0.00066	0.10	0.106	0.108	0.107	0.085 to 0.115	106	70 to 130	1.69	20	
AY15254	Cobalt, Total	mg/L	0.0000146	0.0044	0.10	0.100	0.0959	0.103	0.085 to 0.115	100	70 to 130	4.63	20	
AY15254	Mercury, Total by CVAA	mg/L	0.0000166	0.0005	0.004	0.00387	0.00386	0.00393	0.0034 to 0.0046	96.8	70 to 130	0.277	20	
AY15254	Arsenic, Total	mg/L	0.00000990	0.0022	0.10	0.102	0.100	0.106	0.085 to 0.115	102	70 to 130	2.22	20	
AY15254	Molybdenum, Total	mg/L	0.0000227	0.0044	0.10	0.0942	0.0917	0.0969	0.085 to 0.115	94.2	70 to 130	2.65	20	
AY15254	Thallium, Total	mg/L	0.0000224	0.00044	0.10	0.0859	0.0856	0.100	0.085 to 0.115	85.9	70 to 130	0.297	20	
AY15254	Calcium, Total	mg/L	-0.00333	0.22	5.00	5.01	4.89	4.90	4.25 to 5.75	100	70 to 130	2.24	20	
AY15254	Selenium, Total	mg/L	0.0000421	0.0044	0.10	0.106	0.0995	0.109	0.085 to 0.115	106	70 to 130	6.28	20	

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Laboratory certification ID: E571114

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Comments:

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 Calera, AL 35040
 (205) 664-6032 or 6171
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 27-Jun-18
 Customer ID:
 Delivery Date: 28-Jun-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY15254

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY15252	Solids, Dissolved	mg/L	1.00	25			418	48.0	40 to 60		0.358	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information



Chain of Custody

Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA **06/28/2018 12:00**

Requested Complete Date	Routine		Results To	Dustin Brooks, Greg Dyer		
	Site Representative			Requested By	Greg Dyer	
	Collector				Location	
		Ben Rothschild		Gadsden Ash Pond		

Bottles	1	Metals	500 mL	3	TDS	500 mL	5	N/A	N/A	7	N/A	N/A
	2	Hg	250 mL	4	N/A	N/A	6	N/A	N/A	8	N/A	N/A

Comments

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-1	6/26/18	09:45	3	Groundwater		AY15240
MW-6	06/26/2018	11:30	3	Groundwater		AY15241
MW-6 DUP	06/26/2018	11:30	3	Sample Duplicate		AY15242
MW-7	06/26/2018	12:47	3	Groundwater		AY15243
MW-8	06/26/2018	14:08	3	Groundwater		AY15244
MW-9	06/26/2018	15:10	3	Groundwater		AY15245
MW-4	06/26/2018	16:08	3	Groundwater		AY15246
FB-1	06/26/2018	16:30	3	Field Blank		AY15247
MW-5	06/27/2018	09:38	3	Groundwater		AY15248
MW-3	06/27/2018	10:44	3	Groundwater		AY15249
MW-3 DUP	06/27/2018	10:44	3	Sample Duplicate		AY15250
MW-2	06/27/2018	12:36	3	Groundwater		AY15251
MW-12	06/27/2018	13:35	3	Groundwater		AY15252
MW-11	06/27/2018	14:56	3	Groundwater		AY15253
EB-1	06/27/2018	15:40	3	Equipment Blank		AY15254

Relinquished By	Received By	Date/Time
	Sarah Copeland <small>Digitally signed by Sarah Copeland DN: cn=Sarah Copeland, o.ou, email=sgcopela@southernco.com, c=US Date: 2018.06.28 15:09:49 -05'00'</small>	06/28/2018 15:09

SmarTroll ID **6496-34170-1-1**
 Turbidity ID **4677-23343-4-2**

All metals and radiological bottles have pH < 2
 Cooler Temp **0.6 degrees C**
 Thermometer ID **5408-27568-2-2**
 pH Strip ID **6803-35849-20-10**



Chain of Custody Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA **06/28/2018 12:00**

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer
Site Representative	Gerson Pickett	Requested By	Greg Dyer
Collector	Ben Rothschild	Location	Gadsden Ash Pond

Bottles	1 Radium 1 L	3 N/A N/A	5 N/A N/A	7 N/A N/A
	2 Anions 250 mL	4 N/A N/A	6 N/A N/A	8 N/A N/A

Comments: All samples outsourced to Test America.

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-1	6/26/18	09:45	2	Groundwater		AY15261
MW-6	06/26/2018	11:30	2	Groundwater		AY15262
MW-6 DUP	06/26/2018	11:30	2	Sample Duplicate		AY15263
MW-7	06/26/2018	12:47	2	Groundwater		AY15264
MW-8	06/26/2018	14:08	2	Groundwater		AY15265
MW-9	06/26/2018	15:10	2	Groundwater		AY15266
MW-4	06/26/2018	16:08	2	Groundwater		AY15267
FB-1	06/26/2018	16:30	2	Field Blank		AY15268
MW-5	06/27/2018	09:38	2	Groundwater		AY15269
MW-3	06/27/2018	10:44	2	Groundwater		AY15270
MW-3 DUP	06/27/2018	10:44	2	Sample Duplicate		AY15271
MW-2	06/27/2018	12:36	2	Groundwater		AY15272
MW-12	06/27/2018	13:35	2	Groundwater		AY15273
MW-11	06/27/2018	14:56	2	Groundwater		AY15274
EB-1	06/27/2018	15:40	2	Equipment Blank		AY15275

Relinquished By	Received By	Date/Time
	Sarah Copeland <small>Digitally signed by Sarah Copeland DN: cn=Sarah Copeland, o.ou, email=sgcopela@southernco.com, c=US Date: 2018.06.28 15:14:36 -05'00'</small>	06/28/2018 15:14

SmarTroll ID 6496-34170-1-1
Turbidity ID 4677-23343-4-2

All metals and radiological bottles have pH < 2
Cooler Temp 0.6 degrees C
Thermometer ID 5408-27568-2-2
pH Strip ID 6803-35849-20-10

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: 400-155816-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1156

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

7/24/2018 4:47:38 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.

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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Job ID: 400-155816-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-155816-1

General Chemistry

Method(s) SM 4500 F C: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 404087 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 F C: The sample duplicate precision for the following sample associated with analytical batch 404087 was outside control limits: (400-155816-A-16 DU). The associated Laboratory Control Sample(LCS) met acceptance criteria.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 404506 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: AY15255 MW-14 (400-155816-1), AY15261 MW-1 (400-155816-7), (400-155816-A-7 MS), (400-155816-A-7 MSD). AY15270 MW-3 (400-155816-16), AY15271 MW-3 DUP (400-155816-17), AY15272 MW-2 (400-155816-18), AY15273 MW-12 (400-155816-19), AY15274 MW-11 (400-155816-20), (400-156001-B-3), (400-156001-B-3 MS) and (400-156001-B-3 MSD). Elevated reporting limits (RLs) are provided.

Method(s) SM 4500 SO4 E: Due to the high concentration of Sulfate the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 405017 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 405017 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.

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15255 MW-14

Lab Sample ID: 400-155816-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.18	F1	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	120		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15256 PZ-1

Lab Sample ID: 400-155816-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.6		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.13		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2.2	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15257 PZ-5

Lab Sample ID: 400-155816-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.2		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY15258 PZ-6

Lab Sample ID: 400-155816-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY15259 MW-10

Lab Sample ID: 400-155816-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.6		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.090	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY15260 FB-2

Lab Sample ID: 400-155816-6

No Detections.

Client Sample ID: AY15261 MW-1

Lab Sample ID: 400-155816-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.7		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	670	F1	100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15262 MW-6

Lab Sample ID: 400-155816-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.5		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	11		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15263 MW-6 DUP

Lab Sample ID: 400-155816-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.5		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15263 MW-6 DUP (Continued)

Lab Sample ID: 400-155816-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	10		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15264 MW-7

Lab Sample ID: 400-155816-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.4		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.090	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	11		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15265 MW-8

Lab Sample ID: 400-155816-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.0		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.10		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	7.5		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15266 MW-9

Lab Sample ID: 400-155816-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.4		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.13		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	8.5		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15267 MW-4

Lab Sample ID: 400-155816-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.7		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.22		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY15268 FB-1

Lab Sample ID: 400-155816-14

No Detections.

Client Sample ID: AY15269 MW-5

Lab Sample ID: 400-155816-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	18		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15270 MW-3

Lab Sample ID: 400-155816-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.3		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	230		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15271 MW-3 DUP

Lab Sample ID: 400-155816-17

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15271 MW-3 DUP (Continued)

Lab Sample ID: 400-155816-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	240		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15272 MW-2

Lab Sample ID: 400-155816-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.2		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.28		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	130		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15273 MW-12

Lab Sample ID: 400-155816-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.5		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	240		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15274 MW-11

Lab Sample ID: 400-155816-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.4		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	95		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY15275 EB-1

Lab Sample ID: 400-155816-21

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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

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Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-155816-1	AY15255 MW-14	Water	06/27/18 09:48	07/02/18 09:28
400-155816-2	AY15256 PZ-1	Water	06/27/18 11:30	07/02/18 09:28
400-155816-3	AY15257 PZ-5	Water	06/27/18 12:50	07/02/18 09:28
400-155816-4	AY15258 PZ-6	Water	06/27/18 14:08	07/02/18 09:28
400-155816-5	AY15259 MW-10	Water	06/27/18 15:23	07/02/18 09:28
400-155816-6	AY15260 FB-2	Water	06/27/18 15:35	07/02/18 09:28
400-155816-7	AY15261 MW-1	Water	06/26/18 09:45	07/02/18 09:28
400-155816-8	AY15262 MW-6	Water	06/26/18 11:30	07/02/18 09:28
400-155816-9	AY15263 MW-6 DUP	Water	06/26/18 11:30	07/02/18 09:28
400-155816-10	AY15264 MW-7	Water	06/26/18 12:47	07/02/18 09:28
400-155816-11	AY15265 MW-8	Water	06/26/18 14:08	07/02/18 09:28
400-155816-12	AY15266 MW-9	Water	06/26/18 15:10	07/02/18 09:28
400-155816-13	AY15267 MW-4	Water	06/26/18 16:08	07/02/18 09:28
400-155816-14	AY15268 FB-1	Water	06/26/18 16:30	07/02/18 09:28
400-155816-15	AY15269 MW-5	Water	06/27/18 09:38	07/02/18 09:28
400-155816-16	AY15270 MW-3	Water	06/27/18 10:44	07/02/18 09:28
400-155816-17	AY15271 MW-3 DUP	Water	06/27/18 10:44	07/02/18 09:28
400-155816-18	AY15272 MW-2	Water	06/27/18 12:36	07/02/18 09:28
400-155816-19	AY15273 MW-12	Water	06/27/18 13:35	07/02/18 09:28
400-155816-20	AY15274 MW-11	Water	06/27/18 14:56	07/02/18 09:28
400-155816-21	AY15275 EB-1	Water	06/27/18 15:40	07/02/18 09:28

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15255 MW-14

Lab Sample ID: 400-155816-1

Date Collected: 06/27/18 09:48

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.1		2.0	0.60	mg/L			07/15/18 11:26	1
Fluoride	0.18	F1	0.10	0.032	mg/L			07/11/18 08:24	1
Sulfate	120		50	14	mg/L			07/15/18 10:50	10

Client Sample ID: AY15256 PZ-1

Lab Sample ID: 400-155816-2

Date Collected: 06/27/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		2.0	0.60	mg/L			07/15/18 11:26	1
Fluoride	0.13		0.10	0.032	mg/L			07/11/18 08:34	1
Sulfate	2.2	J	5.0	1.4	mg/L			07/15/18 10:07	1

Client Sample ID: AY15257 PZ-5

Lab Sample ID: 400-155816-3

Date Collected: 06/27/18 12:50

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.2		2.0	0.60	mg/L			07/15/18 11:26	1
Fluoride	0.050	J	0.10	0.032	mg/L			07/11/18 08:36	1
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 10:07	1

Client Sample ID: AY15258 PZ-6

Lab Sample ID: 400-155816-4

Date Collected: 06/27/18 14:08

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		2.0	0.60	mg/L			07/15/18 11:26	1
Fluoride	0.040	J	0.10	0.032	mg/L			07/11/18 08:39	1
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 10:07	1

Client Sample ID: AY15259 MW-10

Lab Sample ID: 400-155816-5

Date Collected: 06/27/18 15:23

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.6		2.0	0.60	mg/L			07/15/18 11:26	1
Fluoride	0.090	J	0.10	0.032	mg/L			07/11/18 08:41	1
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 10:07	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15260 FB-2

Lab Sample ID: 400-155816-6

Date Collected: 06/27/18 15:35

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			07/15/18 11:26	1
Fluoride	<0.032		0.10	0.032	mg/L			07/11/18 08:45	1
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 10:07	1

Client Sample ID: AY15261 MW-1

Lab Sample ID: 400-155816-7

Date Collected: 06/26/18 09:45

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.7		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	0.080	J	0.10	0.032	mg/L			07/09/18 15:18	1
Sulfate	670	F1	100	28	mg/L			07/15/18 08:34	20

Client Sample ID: AY15262 MW-6

Lab Sample ID: 400-155816-8

Date Collected: 06/26/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.5		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	0.050	J	0.10	0.032	mg/L			07/09/18 15:20	1
Sulfate	11		5.0	1.4	mg/L			07/15/18 07:31	1

Client Sample ID: AY15263 MW-6 DUP

Lab Sample ID: 400-155816-9

Date Collected: 06/26/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.5		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	0.050	J	0.10	0.032	mg/L			07/09/18 15:24	1
Sulfate	10		5.0	1.4	mg/L			07/15/18 07:31	1

Client Sample ID: AY15264 MW-7

Lab Sample ID: 400-155816-10

Date Collected: 06/26/18 12:47

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.4		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	0.090	J	0.10	0.032	mg/L			07/09/18 15:27	1
Sulfate	11		5.0	1.4	mg/L			07/15/18 07:31	1

Client Sample ID: AY15265 MW-8

Lab Sample ID: 400-155816-11

Date Collected: 06/26/18 14:08

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.0		2.0	0.60	mg/L			07/15/18 11:23	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15265 MW-8

Lab Sample ID: 400-155816-11

Date Collected: 06/26/18 14:08

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.10		0.10	0.032	mg/L			07/09/18 15:31	1
Sulfate	7.5		5.0	1.4	mg/L			07/15/18 10:00	1

Client Sample ID: AY15266 MW-9

Lab Sample ID: 400-155816-12

Date Collected: 06/26/18 15:10

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.4		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	0.13		0.10	0.032	mg/L			07/09/18 15:34	1
Sulfate	8.5		5.0	1.4	mg/L			07/15/18 10:07	1

Client Sample ID: AY15267 MW-4

Lab Sample ID: 400-155816-13

Date Collected: 06/26/18 16:08

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.7		2.0	0.60	mg/L			07/15/18 11:23	1
Fluoride	0.22		0.10	0.032	mg/L			07/09/18 15:37	1
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 10:00	1

Client Sample ID: AY15268 FB-1

Lab Sample ID: 400-155816-14

Date Collected: 06/26/18 16:30

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			07/15/18 11:23	1
Fluoride	<0.032		0.10	0.032	mg/L			07/11/18 08:48	1
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 10:07	1

Client Sample ID: AY15269 MW-5

Lab Sample ID: 400-155816-15

Date Collected: 06/27/18 09:38

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.1		2.0	0.60	mg/L			07/15/18 11:26	1
Fluoride	0.060	J	0.10	0.032	mg/L			07/11/18 08:51	1
Sulfate	18		5.0	1.4	mg/L			07/15/18 10:11	1

Client Sample ID: AY15270 MW-3

Lab Sample ID: 400-155816-16

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.3		2.0	0.60	mg/L			07/15/18 11:26	1
Fluoride	0.070	J	0.10	0.032	mg/L			07/11/18 08:59	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15270 MW-3

Lab Sample ID: 400-155816-16

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	230		50	14	mg/L			07/15/18 10:50	10

Client Sample ID: AY15271 MW-3 DUP

Lab Sample ID: 400-155816-17

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.1		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	0.060	J	0.10	0.032	mg/L			07/11/18 09:04	1
Sulfate	240		50	14	mg/L			07/15/18 10:50	10

Client Sample ID: AY15272 MW-2

Lab Sample ID: 400-155816-18

Date Collected: 06/27/18 12:36

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.2		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	0.28		0.10	0.032	mg/L			07/11/18 09:06	1
Sulfate	130		50	14	mg/L			07/15/18 10:50	10

Client Sample ID: AY15273 MW-12

Lab Sample ID: 400-155816-19

Date Collected: 06/27/18 13:35

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.5		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	<0.032		0.10	0.032	mg/L			07/11/18 09:09	1
Sulfate	240		50	14	mg/L			07/15/18 10:54	10

Client Sample ID: AY15274 MW-11

Lab Sample ID: 400-155816-20

Date Collected: 06/27/18 14:56

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.4		2.0	0.60	mg/L			07/15/18 11:33	1
Fluoride	0.060	J	0.10	0.032	mg/L			07/11/18 09:12	1
Sulfate	95		25	7.0	mg/L			07/19/18 11:53	5

Client Sample ID: AY15275 EB-1

Lab Sample ID: 400-155816-21

Date Collected: 06/27/18 15:40

Matrix: Water

Date Received: 07/02/18 09:28

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			07/15/18 12:08	1
Fluoride	<0.032		0.10	0.032	mg/L			07/11/18 09:15	1
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 10:11	1

TestAmerica Pensacola

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15255 MW-14

Lab Sample ID: 400-155816-1

Date Collected: 06/27/18 09:48

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	404514	07/15/18 10:50	RRC	TAL PEN

Client Sample ID: AY15256 PZ-1

Lab Sample ID: 400-155816-2

Date Collected: 06/27/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:34	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:07	RRC	TAL PEN

Client Sample ID: AY15257 PZ-5

Lab Sample ID: 400-155816-3

Date Collected: 06/27/18 12:50

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:36	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:07	RRC	TAL PEN

Client Sample ID: AY15258 PZ-6

Lab Sample ID: 400-155816-4

Date Collected: 06/27/18 14:08

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:39	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:07	RRC	TAL PEN

Client Sample ID: AY15259 MW-10

Lab Sample ID: 400-155816-5

Date Collected: 06/27/18 15:23

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:41	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:07	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15260 FB-2

Lab Sample ID: 400-155816-6

Date Collected: 06/27/18 15:35

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:45	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:07	RRC	TAL PEN

Client Sample ID: AY15261 MW-1

Lab Sample ID: 400-155816-7

Date Collected: 06/26/18 09:45

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403882	07/09/18 15:18	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	404506	07/15/18 08:34	RRC	TAL PEN

Client Sample ID: AY15262 MW-6

Lab Sample ID: 400-155816-8

Date Collected: 06/26/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403882	07/09/18 15:20	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404506	07/15/18 07:31	RRC	TAL PEN

Client Sample ID: AY15263 MW-6 DUP

Lab Sample ID: 400-155816-9

Date Collected: 06/26/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403882	07/09/18 15:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404506	07/15/18 07:31	RRC	TAL PEN

Client Sample ID: AY15264 MW-7

Lab Sample ID: 400-155816-10

Date Collected: 06/26/18 12:47

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403882	07/09/18 15:27	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404506	07/15/18 07:31	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15265 MW-8

Lab Sample ID: 400-155816-11

Date Collected: 06/26/18 14:08

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:23	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403882	07/09/18 15:31	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:00	RRC	TAL PEN

Client Sample ID: AY15266 MW-9

Lab Sample ID: 400-155816-12

Date Collected: 06/26/18 15:10

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403882	07/09/18 15:34	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:07	RRC	TAL PEN

Client Sample ID: AY15267 MW-4

Lab Sample ID: 400-155816-13

Date Collected: 06/26/18 16:08

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:23	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	403882	07/09/18 15:37	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:00	RRC	TAL PEN

Client Sample ID: AY15268 FB-1

Lab Sample ID: 400-155816-14

Date Collected: 06/26/18 16:30

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:23	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:48	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:07	RRC	TAL PEN

Client Sample ID: AY15269 MW-5

Lab Sample ID: 400-155816-15

Date Collected: 06/27/18 09:38

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:51	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:11	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15270 MW-3

Lab Sample ID: 400-155816-16

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:26	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 08:59	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	404514	07/15/18 10:50	RRC	TAL PEN

Client Sample ID: AY15271 MW-3 DUP

Lab Sample ID: 400-155816-17

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 09:04	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	404514	07/15/18 10:50	RRC	TAL PEN

Client Sample ID: AY15272 MW-2

Lab Sample ID: 400-155816-18

Date Collected: 06/27/18 12:36

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 09:06	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	404514	07/15/18 10:50	RRC	TAL PEN

Client Sample ID: AY15273 MW-12

Lab Sample ID: 400-155816-19

Date Collected: 06/27/18 13:35

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 09:09	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	404514	07/15/18 10:54	RRC	TAL PEN

Client Sample ID: AY15274 MW-11

Lab Sample ID: 400-155816-20

Date Collected: 06/27/18 14:56

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404516	07/15/18 11:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 09:12	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	405017	07/19/18 11:53	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15275 EB-1

Lab Sample ID: 400-155816-21

Date Collected: 06/27/18 15:40

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	404524	07/15/18 12:08	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	404087	07/11/18 09:15	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	404514	07/15/18 10:11	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

General Chemistry

Analysis Batch: 403882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-7	AY15261 MW-1	Total/NA	Water	SM 4500 F C	
400-155816-8	AY15262 MW-6	Total/NA	Water	SM 4500 F C	
400-155816-9	AY15263 MW-6 DUP	Total/NA	Water	SM 4500 F C	
400-155816-10	AY15264 MW-7	Total/NA	Water	SM 4500 F C	
400-155816-11	AY15265 MW-8	Total/NA	Water	SM 4500 F C	
400-155816-12	AY15266 MW-9	Total/NA	Water	SM 4500 F C	
400-155816-13	AY15267 MW-4	Total/NA	Water	SM 4500 F C	
MB 400-403882/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-403882/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-155634-F-1 MS	Matrix Spike	Dissolved	Water	SM 4500 F C	
400-155634-F-1 MSD	Matrix Spike Duplicate	Dissolved	Water	SM 4500 F C	
400-155634-F-5 DU	Duplicate	Dissolved	Water	SM 4500 F C	

Analysis Batch: 404087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-1	AY15255 MW-14	Total/NA	Water	SM 4500 F C	
400-155816-2	AY15256 PZ-1	Total/NA	Water	SM 4500 F C	
400-155816-3	AY15257 PZ-5	Total/NA	Water	SM 4500 F C	
400-155816-4	AY15258 PZ-6	Total/NA	Water	SM 4500 F C	
400-155816-5	AY15259 MW-10	Total/NA	Water	SM 4500 F C	
400-155816-6	AY15260 FB-2	Total/NA	Water	SM 4500 F C	
400-155816-14	AY15268 FB-1	Total/NA	Water	SM 4500 F C	
400-155816-15	AY15269 MW-5	Total/NA	Water	SM 4500 F C	
400-155816-16	AY15270 MW-3	Total/NA	Water	SM 4500 F C	
400-155816-17	AY15271 MW-3 DUP	Total/NA	Water	SM 4500 F C	
400-155816-18	AY15272 MW-2	Total/NA	Water	SM 4500 F C	
400-155816-19	AY15273 MW-12	Total/NA	Water	SM 4500 F C	
400-155816-20	AY15274 MW-11	Total/NA	Water	SM 4500 F C	
400-155816-21	AY15275 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-404087/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-404087/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-155816-1 MS	AY15255 MW-14	Total/NA	Water	SM 4500 F C	
400-155816-1 MSD	AY15255 MW-14	Total/NA	Water	SM 4500 F C	
400-155816-16 DU	AY15270 MW-3	Total/NA	Water	SM 4500 F C	

Analysis Batch: 404506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-7	AY15261 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-155816-8	AY15262 MW-6	Total/NA	Water	SM 4500 SO4 E	
400-155816-9	AY15263 MW-6 DUP	Total/NA	Water	SM 4500 SO4 E	
400-155816-10	AY15264 MW-7	Total/NA	Water	SM 4500 SO4 E	
MB 400-404506/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-404506/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-404506/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-155816-7 MS	AY15261 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-155816-7 MSD	AY15261 MW-1	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 404514

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-1	AY15255 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-155816-2	AY15256 PZ-1	Total/NA	Water	SM 4500 SO4 E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

General Chemistry (Continued)

Analysis Batch: 404514 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-3	AY15257 PZ-5	Total/NA	Water	SM 4500 SO4 E	
400-155816-4	AY15258 PZ-6	Total/NA	Water	SM 4500 SO4 E	
400-155816-5	AY15259 MW-10	Total/NA	Water	SM 4500 SO4 E	
400-155816-6	AY15260 FB-2	Total/NA	Water	SM 4500 SO4 E	
400-155816-11	AY15265 MW-8	Total/NA	Water	SM 4500 SO4 E	
400-155816-12	AY15266 MW-9	Total/NA	Water	SM 4500 SO4 E	
400-155816-13	AY15267 MW-4	Total/NA	Water	SM 4500 SO4 E	
400-155816-14	AY15268 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-155816-15	AY15269 MW-5	Total/NA	Water	SM 4500 SO4 E	
400-155816-16	AY15270 MW-3	Total/NA	Water	SM 4500 SO4 E	
400-155816-17	AY15271 MW-3 DUP	Total/NA	Water	SM 4500 SO4 E	
400-155816-18	AY15272 MW-2	Total/NA	Water	SM 4500 SO4 E	
400-155816-19	AY15273 MW-12	Total/NA	Water	SM 4500 SO4 E	
400-155816-21	AY15275 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-404514/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-404514/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-404514/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-155816-12 MS	AY15266 MW-9	Total/NA	Water	SM 4500 SO4 E	
400-155816-12 MSD	AY15266 MW-9	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 404516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-1	AY15255 MW-14	Total/NA	Water	SM 4500 Cl- E	
400-155816-2	AY15256 PZ-1	Total/NA	Water	SM 4500 Cl- E	
400-155816-3	AY15257 PZ-5	Total/NA	Water	SM 4500 Cl- E	
400-155816-4	AY15258 PZ-6	Total/NA	Water	SM 4500 Cl- E	
400-155816-5	AY15259 MW-10	Total/NA	Water	SM 4500 Cl- E	
400-155816-6	AY15260 FB-2	Total/NA	Water	SM 4500 Cl- E	
400-155816-7	AY15261 MW-1	Total/NA	Water	SM 4500 Cl- E	
400-155816-8	AY15262 MW-6	Total/NA	Water	SM 4500 Cl- E	
400-155816-9	AY15263 MW-6 DUP	Total/NA	Water	SM 4500 Cl- E	
400-155816-10	AY15264 MW-7	Total/NA	Water	SM 4500 Cl- E	
400-155816-11	AY15265 MW-8	Total/NA	Water	SM 4500 Cl- E	
400-155816-12	AY15266 MW-9	Total/NA	Water	SM 4500 Cl- E	
400-155816-13	AY15267 MW-4	Total/NA	Water	SM 4500 Cl- E	
400-155816-14	AY15268 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-155816-15	AY15269 MW-5	Total/NA	Water	SM 4500 Cl- E	
400-155816-16	AY15270 MW-3	Total/NA	Water	SM 4500 Cl- E	
400-155816-17	AY15271 MW-3 DUP	Total/NA	Water	SM 4500 Cl- E	
400-155816-18	AY15272 MW-2	Total/NA	Water	SM 4500 Cl- E	
400-155816-19	AY15273 MW-12	Total/NA	Water	SM 4500 Cl- E	
400-155816-20	AY15274 MW-11	Total/NA	Water	SM 4500 Cl- E	
MB 400-404516/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-404516/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-155816-3 MS	AY15257 PZ-5	Total/NA	Water	SM 4500 Cl- E	
400-155816-3 MSD	AY15257 PZ-5	Total/NA	Water	SM 4500 Cl- E	
400-155816-11 MS	AY15265 MW-8	Total/NA	Water	SM 4500 Cl- E	
400-155816-11 MSD	AY15265 MW-8	Total/NA	Water	SM 4500 Cl- E	

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
SDG: Gadsden Ash Pond 1156

General Chemistry (Continued)

Analysis Batch: 404524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-21	AY15275 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-404524/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-404524/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-404524/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-155926-B-1 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-155926-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 405017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-20	AY15274 MW-11	Total/NA	Water	SM 4500 SO4 E	
MB 400-405017/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-405017/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-405017/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-156001-B-3 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-156001-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-404516/6
Matrix: Water
Analysis Batch: 404516

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			07/15/18 11:23	1

Lab Sample ID: LCS 400-404516/7
Matrix: Water
Analysis Batch: 404516

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.4		mg/L		105	90 - 110

Lab Sample ID: 400-155816-3 MS
Matrix: Water
Analysis Batch: 404516

Client Sample ID: AY15257 PZ-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	4.2		10.0	14.6		mg/L		104	73 - 120

Lab Sample ID: 400-155816-3 MSD
Matrix: Water
Analysis Batch: 404516

Client Sample ID: AY15257 PZ-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	4.2		10.0	14.3		mg/L		102	73 - 120	2	8

Lab Sample ID: 400-155816-11 MS
Matrix: Water
Analysis Batch: 404516

Client Sample ID: AY15265 MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.0		10.0	16.0		mg/L		110	73 - 120

Lab Sample ID: 400-155816-11 MSD
Matrix: Water
Analysis Batch: 404516

Client Sample ID: AY15265 MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	5.0		10.0	15.9		mg/L		109	73 - 120	0	8

Lab Sample ID: MB 400-404524/6
Matrix: Water
Analysis Batch: 404524

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			07/15/18 12:07	1

Lab Sample ID: LCS 400-404524/7
Matrix: Water
Analysis Batch: 404524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.7		mg/L		106	90 - 110

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Lab Sample ID: MRL 400-404524/3
Matrix: Water
Analysis Batch: 404524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.66	J	mg/L		83	50 - 150

Lab Sample ID: 400-155926-B-1 MS
Matrix: Water
Analysis Batch: 404524

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	24		10.0	33.1		mg/L		94	73 - 120

Lab Sample ID: 400-155926-B-1 MSD
Matrix: Water
Analysis Batch: 404524

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	24		10.0	33.3		mg/L		96	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-403882/3
Matrix: Water
Analysis Batch: 403882

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			07/09/18 14:27	1

Lab Sample ID: LCS 400-403882/4
Matrix: Water
Analysis Batch: 403882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.87		mg/L		97	90 - 110

Lab Sample ID: MB 400-404087/3
Matrix: Water
Analysis Batch: 404087

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			07/11/18 08:10	1

Lab Sample ID: LCS 400-404087/4
Matrix: Water
Analysis Batch: 404087

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.02		mg/L		101	90 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 400-155816-1 MS
Matrix: Water
Analysis Batch: 404087

Client Sample ID: AY15255 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.18	F1	1.00	0.690	F1	mg/L		51	75 - 125

Lab Sample ID: 400-155816-1 MSD
Matrix: Water
Analysis Batch: 404087

Client Sample ID: AY15255 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.18	F1	1.00	0.670	F1	mg/L		49	75 - 125	3	4

Lab Sample ID: 400-155816-16 DU
Matrix: Water
Analysis Batch: 404087

Client Sample ID: AY15270 MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.070	J	0.0600	J F5	mg/L		15	4

Lab Sample ID: 400-155634-F-1 MS
Matrix: Water
Analysis Batch: 403882

Client Sample ID: Matrix Spike
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.61		1.00	1.60		mg/L		99	75 - 125

Lab Sample ID: 400-155634-F-1 MSD
Matrix: Water
Analysis Batch: 403882

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.61		1.00	1.60		mg/L		99	75 - 125	0	4

Lab Sample ID: 400-155634-F-5 DU
Matrix: Water
Analysis Batch: 403882

Client Sample ID: Duplicate
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.74		0.740		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-404506/6
Matrix: Water
Analysis Batch: 404506

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 07:20	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

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

Lab Sample ID: LCS 400-404506/7
Matrix: Water
Analysis Batch: 404506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.2		mg/L		95	90 - 110

Lab Sample ID: MRL 400-404506/3
Matrix: Water
Analysis Batch: 404506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.80	J	mg/L		76	50 - 150

Lab Sample ID: 400-155816-7 MS
Matrix: Water
Analysis Batch: 404506

Client Sample ID: AY15261 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	670	F1	200	643	F1	mg/L		-14	77 - 128

Lab Sample ID: 400-155816-7 MSD
Matrix: Water
Analysis Batch: 404506

Client Sample ID: AY15261 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	670	F1	200	637	F1	mg/L		-17	77 - 128	1	5

Lab Sample ID: MB 400-404514/6
Matrix: Water
Analysis Batch: 404514

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			07/15/18 10:00	1

Lab Sample ID: LCS 400-404514/7
Matrix: Water
Analysis Batch: 404514

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.2		mg/L		94	90 - 110

Lab Sample ID: MRL 400-404514/3
Matrix: Water
Analysis Batch: 404514

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.82	J	mg/L		76	50 - 150

Lab Sample ID: 400-155816-12 MS
Matrix: Water
Analysis Batch: 404514

Client Sample ID: AY15266 MW-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	8.5		10.0	18.6		mg/L		101	77 - 128

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

Lab Sample ID: 400-155816-12 MSD
Matrix: Water
Analysis Batch: 404514

Client Sample ID: AY15266 MW-9
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	8.5		10.0	18.8		mg/L		103	77 - 128	1	5

Lab Sample ID: MB 400-405017/6
Matrix: Water
Analysis Batch: 405017

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			07/19/18 10:54	1

Lab Sample ID: LCS 400-405017/7
Matrix: Water
Analysis Batch: 405017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.4		mg/L		96	90 - 110

Lab Sample ID: MRL 400-405017/3
Matrix: Water
Analysis Batch: 405017

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.87	J	mg/L		77	50 - 150

Lab Sample ID: 400-156001-B-3 MS
Matrix: Water
Analysis Batch: 405017

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	35	F1	50.0	45.6	F1	mg/L		22	77 - 128

Lab Sample ID: 400-156001-B-3 MSD
Matrix: Water
Analysis Batch: 405017

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	35	F1	50.0	44.4	F1	mg/L		20	77 - 128	3	5

TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 475-2671

Chain of Custody Record



COC No: 400-56525-24537.1
 Page: Page 1 of 2
 Job #:

Carrier Tracking Note:
 Lab PM: Whitmire, Cheyenne R
 E-Mail: cheyenne.whitmire@testamericanc.com

Sampler: Nick Pitts
 Phone:
 Client Contact: Sarah Copeland
 Company: Alabama Power General Test Laboratory

Due Date Requested:
 TAT Requested (days):
 Routine
 PO #:
 WO #:
 Project #:
 40007143
 SSOV#:

Address: 744 County Rd 87 GSC #8
 City: Calera
 State, Zip: AL, 35040
 Phone: 205-664-6121 (Tel)
 Email: sgcopela@southemco.com
 Project Name:
 CCR
 Site: Gadsden Ash Pond 1156

Sample Identification	Sample Date	Sample Time	Sample Type (C-comp, G-grab)	Matrix (Water, Soil, Sediment, etc.)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	GM 4500 F	GM 4500 C	GM 4500 SO4 E	9315_Ra226_9320_Ra228_Ra226Ra228_GFPc	Total Number of containers	Special Instructions/Note:
AY15255	6/27/18	0948	G	Water		X	N	X	X	X	X	4	MW-14
AY15256	6/27/18	1130	G	Water		X	X	X	X	X	X	2	PZ-1
AY15257	6/27/18	1250	G	Water		X	X	X	X	X	X	2	PZ-5
AY15258	6/27/18	1408	G	Water		X	X	X	X	X	X	2	PZ-6
AY15259	6/27/18	1523	G	Water		X	X	X	X	X	X	2	MW-10
AY15260	6/27/18	1535	G	Water		X	X	X	X	X	X	2	FB-2 (Field Blank)

Preservation Codes:
 A - HCL
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NaHSO4
 F - MeOH
 G - Amchlor
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDA
 Other:
 M - Hexane
 N - None
 O - AsNaO2
 P - Na2O4S
 Q - Na2SO3
 R - Na2S2O3
 S - H2SO4
 T - TSP Dodecahydrate
 U - Acetone
 V - MCAA
 W - ph 4-5
 X - EDA
 Z - other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements:

Relinquished by: Sarah Copeland
 Date/Time: 7/22/2018, 0930
 Relinquished by:
 Date/Time:
 Relinquished by:
 Date/Time:
 Custody Seal No.:
 Δ Yes Δ No
 Cooler Temperature(s) °C and Other Remarks: 25.4°C, 29.2°C



Chain of Custody Record

Client Information Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6121(Tel) Email: sjcopela@southernco.com Project Name: 40007143 CCR Site: Gadsden Ash Pond 1156		Lab PM: Whitmire, Chyanne R E-Mail: chyanne.whitmire@testamericainc.com		Carrier Tracking Note(s): COC No: 400-56525-24537.1 Page: Page 2 of 2 Job #:									
Sample Information Sampler: Ben Rothschild Phone:		Due Date Requested: TAT Requested (days): Routine		Analysis Requested Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> N Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> N SM 4500 F C SM 4500 CL E SM 4500 S04 E 9315_Ra226, 9320_Ra228, Ra228Ra228, GPPC									
Sample Identification		Sample Date		Sample Time		Sample Type (C-Comp, G-grab)		Matrix (Water, Solid, Other)		Preservation Code:		Special Instructions/Note:	
AY15261	6/26/18	0945	G	Water									
AY15262	6/26/18	1130	G	Water									
AY15263	6/26/18	1130	G	Water									
AY15264	6/26/18	1247	G	Water									
AY15265	6/26/18	1408	G	Water									
AY15266	6/26/18	1510	G	Water									
AY15267	6/26/18	1608	G	Water									
AY15268	6/26/18	1630	G	Water									
AY15269	6/27/18	938	G	Water									
AY15270	6/27/18	1044	G	Water									
AY15271	6/27/18	1044	G	Water									
AY15272	6/27/18	1236	G	Water									
AY15273	6/27/18	1335	G	Water									
AY15274	6/27/18	1456	G	Water									
AY15275	6/27/18	1540	G	Water									
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Date: 7/2/2018 0900		Company: APC									
Empty Kit Relinquished by: Relinquished by: Sarah Copeland		Date/Time: 7/2/2018 0900		Received by:									
Relinquished by:		Date/Time:		Date/Time:									
Relinquished by:		Date/Time:		Date/Time:									
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Company:									
Cooler Temperature(s) °C and Other Remarks:		Date/Time: 7/2/18 0928		Company:									
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:		Method of Shipment:									



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-155816-1
SDG Number: Gadsden Ash Pond 1156

Login Number: 155816

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	25.4°C, 29.2°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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-1
 SDG: Gadsden Ash Pond 1156

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	09-01-18
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
Iowa	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	09-30-18
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	08-31-18
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	06-30-19
Texas	NELAP	6	T104704286-18-14	09-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		P330-16-00172	05-24-19
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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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: 400-155816-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1156

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

7/31/2018 2:24:37 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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
SDG: Gadsden Ash Pond 1156

Job ID: 400-155816-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-155816-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-374257: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: AY15275 EB-1 (400-155816-21). 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 160-374257: Sample aliquots reduced due to limited sample volume. AY15275 EB-1 (400-155816-21)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-374262: Sample aliquots reduced due to limited sample volume. AY15255 MW-14 (400-155816-1), AY15255 MW-14 (400-155816-1[DU]), AY15256 PZ-1 (400-155816-2), AY15257 PZ-5 (400-155816-3), AY15258 PZ-6 (400-155816-4), AY15259 MW-10 (400-155816-5), AY15260 FB-2 (400-155816-6), AY15261 MW-1 (400-155816-7), AY15262 MW-6 (400-155816-8), AY15263 MW-6 DUP (400-155816-9), AY15264 MW-7 (400-155816-10), AY15265 MW-8 (400-155816-11), AY15266 MW-9 (400-155816-12), AY15267 MW-4 (400-155816-13), AY15268 FB-1 (400-155816-14), AY15269 MW-5 (400-155816-15), AY15270 MW-3 (400-155816-16), AY15271 MW-3 DUP (400-155816-17), AY15272 MW-2 (400-155816-18), AY15273 MW-12 (400-155816-19) and AY15274 MW-11 (400-155816-20)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-374247: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: AY15275 EB-1 (400-155816-21). 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 160-374247: Sample aliquots reduced due to limited sample volume. AY15275 EB-1 (400-155816-21)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-374229: Sample aliquots reduced due to limited sample volume. AY15255 MW-14 (400-155816-1), AY15255 MW-14 (400-155816-1[DU]), AY15256 PZ-1 (400-155816-2), AY15257 PZ-5 (400-155816-3), AY15258 PZ-6 (400-155816-4), AY15259 MW-10 (400-155816-5), AY15260 FB-2 (400-155816-6), AY15261 MW-1 (400-155816-7), AY15262 MW-6 (400-155816-8), AY15263 MW-6 DUP (400-155816-9), AY15264 MW-7 (400-155816-10), AY15265 MW-8 (400-155816-11), AY15266 MW-9 (400-155816-12), AY15267 MW-4 (400-155816-13), AY15268 FB-1 (400-155816-14), AY15269 MW-5 (400-155816-15), AY15270 MW-3 (400-155816-16), AY15271 MW-3 DUP (400-155816-17), AY15272 MW-2 (400-155816-18), AY15273 MW-12 (400-155816-19) and AY15274 MW-11 (400-155816-20)

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
SDG: Gadsden Ash Pond 1156

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
SDG: Gadsden Ash Pond 1156

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-155816-1	AY15255 MW-14	Water	06/27/18 09:48	07/02/18 09:28
400-155816-2	AY15256 PZ-1	Water	06/27/18 11:30	07/02/18 09:28
400-155816-3	AY15257 PZ-5	Water	06/27/18 12:50	07/02/18 09:28
400-155816-4	AY15258 PZ-6	Water	06/27/18 14:08	07/02/18 09:28
400-155816-5	AY15259 MW-10	Water	06/27/18 15:23	07/02/18 09:28
400-155816-6	AY15260 FB-2	Water	06/27/18 15:35	07/02/18 09:28
400-155816-7	AY15261 MW-1	Water	06/26/18 09:45	07/02/18 09:28
400-155816-8	AY15262 MW-6	Water	06/26/18 11:30	07/02/18 09:28
400-155816-9	AY15263 MW-6 DUP	Water	06/26/18 11:30	07/02/18 09:28
400-155816-10	AY15264 MW-7	Water	06/26/18 12:47	07/02/18 09:28
400-155816-11	AY15265 MW-8	Water	06/26/18 14:08	07/02/18 09:28
400-155816-12	AY15266 MW-9	Water	06/26/18 15:10	07/02/18 09:28
400-155816-13	AY15267 MW-4	Water	06/26/18 16:08	07/02/18 09:28
400-155816-14	AY15268 FB-1	Water	06/26/18 16:30	07/02/18 09:28
400-155816-15	AY15269 MW-5	Water	06/27/18 09:38	07/02/18 09:28
400-155816-16	AY15270 MW-3	Water	06/27/18 10:44	07/02/18 09:28
400-155816-17	AY15271 MW-3 DUP	Water	06/27/18 10:44	07/02/18 09:28
400-155816-18	AY15272 MW-2	Water	06/27/18 12:36	07/02/18 09:28
400-155816-19	AY15273 MW-12	Water	06/27/18 13:35	07/02/18 09:28
400-155816-20	AY15274 MW-11	Water	06/27/18 14:56	07/02/18 09:28
400-155816-21	AY15275 EB-1	Water	06/27/18 15:40	07/02/18 09:28

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15255 MW-14

Lab Sample ID: 400-155816-1

Date Collected: 06/27/18 09:48

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.126	U	0.106	0.106	1.00	0.155	pCi/L	07/06/18 08:59	07/30/18 16:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/06/18 08:59	07/30/18 16:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.490		0.289	0.293	1.00	0.436	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	89.3		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.616		0.308	0.312	5.00	0.436	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15256 PZ-1

Lab Sample ID: 400-155816-2

Date Collected: 06/27/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0995	U	0.107	0.108	1.00	0.171	pCi/L	07/06/18 08:59	07/30/18 16:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/06/18 08:59	07/30/18 16:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0889	U	0.328	0.328	1.00	0.566	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	89.7		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.188	U	0.345	0.345	5.00	0.566	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15257 PZ-5

Lab Sample ID: 400-155816-3

Date Collected: 06/27/18 12:50

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0878	U	0.0955	0.0958	1.00	0.151	pCi/L	07/06/18 08:59	07/30/18 16:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/06/18 08:59	07/30/18 16:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.171	U	0.255	0.255	1.00	0.428	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	92.0		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.259	U	0.272	0.272	5.00	0.428	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15258 PZ-6

Lab Sample ID: 400-155816-4

Date Collected: 06/27/18 14:08

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0394	U	0.106	0.106	1.00	0.195	pCi/L	07/06/18 08:59	07/30/18 16:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/06/18 08:59	07/30/18 16:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.191	U	0.277	0.278	1.00	0.465	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	89.3		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.231	U	0.297	0.298	5.00	0.465	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15259 MW-10

Lab Sample ID: 400-155816-5

Date Collected: 06/27/18 15:23

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.195		0.120	0.121	1.00	0.152	pCi/L	07/06/18 08:59	07/30/18 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/06/18 08:59	07/30/18 16:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.483	U	0.320	0.323	1.00	0.496	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	87.9		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.678		0.342	0.345	5.00	0.496	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15260 FB-2

Lab Sample ID: 400-155816-6

Date Collected: 06/27/18 15:35

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0201	U	0.0795	0.0795	1.00	0.178	pCi/L	07/06/18 08:59	07/30/18 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					07/06/18 08:59	07/30/18 16:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.412	U	0.283	0.285	1.00	0.569	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	85.2		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.432	U	0.294	0.296	5.00	0.569	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15261 MW-1

Lab Sample ID: 400-155816-7

Date Collected: 06/26/18 09:45

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.143	U	0.115	0.115	1.00	0.165	pCi/L	07/06/18 08:59	07/30/18 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					07/06/18 08:59	07/30/18 16:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0193	U	0.317	0.317	1.00	0.560	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	88.2		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.162	U	0.337	0.337	5.00	0.560	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15262 MW-6

Lab Sample ID: 400-155816-8

Date Collected: 06/26/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0184	U	0.0688	0.0688	1.00	0.160	pCi/L	07/06/18 08:59	07/30/18 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					07/06/18 08:59	07/30/18 16:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.264	U	0.341	0.341	1.00	0.566	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	71.8		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.245	U	0.348	0.348	5.00	0.566	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15263 MW-6 DUP

Lab Sample ID: 400-155816-9

Date Collected: 06/26/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0646	U	0.0923	0.0925	1.00	0.157	pCi/L	07/06/18 08:59	07/30/18 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/06/18 08:59	07/30/18 16:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.00520	U	0.334	0.334	1.00	0.590	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	89.3		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0594	U	0.347	0.347	5.00	0.590	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15264 MW-7

Lab Sample ID: 400-155816-10

Date Collected: 06/26/18 12:47

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0297	U	0.0891	0.0891	1.00	0.169	pCi/L	07/06/18 08:59	07/30/18 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					07/06/18 08:59	07/30/18 16:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.557		0.338	0.342	1.00	0.519	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	90.5		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.587		0.350	0.353	5.00	0.519	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15265 MW-8

Lab Sample ID: 400-155816-11

Date Collected: 06/26/18 14:08

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.197		0.127	0.128	1.00	0.165	pCi/L	07/06/18 08:59	07/30/18 16:10	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					07/06/18 08:59	07/30/18 16:10	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.239	U	0.320	0.321	1.00	0.533	pCi/L	07/06/18 13:12	07/26/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					07/06/18 13:12	07/26/18 16:47	1
Y Carrier	87.9		40 - 110					07/06/18 13:12	07/26/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.436	U	0.344	0.346	5.00	0.533	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15266 MW-9

Lab Sample ID: 400-155816-12

Date Collected: 06/26/18 15:10

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0758	U	0.106	0.106	1.00	0.180	pCi/L	07/06/18 08:59	07/30/18 16:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					07/06/18 08:59	07/30/18 16:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.354	U	0.289	0.291	1.00	0.459	pCi/L	07/06/18 13:12	07/26/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					07/06/18 13:12	07/26/18 16:48	1
Y Carrier	89.0		40 - 110					07/06/18 13:12	07/26/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.430	U	0.308	0.310	5.00	0.459	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15267 MW-4

Lab Sample ID: 400-155816-13

Date Collected: 06/26/18 16:08

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.414		0.147	0.152	1.00	0.127	pCi/L	07/06/18 08:59	07/30/18 16:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/06/18 08:59	07/30/18 16:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.617		0.304	0.310	1.00	0.445	pCi/L	07/06/18 13:12	07/26/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/06/18 13:12	07/26/18 16:48	1
Y Carrier	89.7		40 - 110					07/06/18 13:12	07/26/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.03		0.338	0.345	5.00	0.445	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15268 FB-1

Lab Sample ID: 400-155816-14

Date Collected: 06/26/18 16:30

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0303	U	0.0724	0.0725	1.00	0.137	pCi/L	07/06/18 08:59	07/30/18 16:11	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/06/18 08:59	07/30/18 16:11	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.403	U	0.274	0.277	1.00	0.423	pCi/L	07/06/18 13:12	07/26/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/06/18 13:12	07/26/18 16:48	1
Y Carrier	92.3		40 - 110					07/06/18 13:12	07/26/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.433		0.283	0.286	5.00	0.423	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15269 MW-5

Lab Sample ID: 400-155816-15

Date Collected: 06/27/18 09:38

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.109	U	0.0929	0.0934	1.00	0.132	pCi/L	07/06/18 08:59	07/30/18 16:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/06/18 08:59	07/30/18 16:12	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.436	U	0.289	0.292	1.00	0.447	pCi/L	07/06/18 13:12	07/26/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					07/06/18 13:12	07/26/18 16:48	1
Y Carrier	91.6		40 - 110					07/06/18 13:12	07/26/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.546		0.304	0.307	5.00	0.447	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15270 MW-3

Lab Sample ID: 400-155816-16

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0467	U	0.0713	0.0714	1.00	0.124	pCi/L	07/06/18 08:59	07/30/18 16:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					07/06/18 08:59	07/30/18 16:12	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.316	U	0.288	0.289	1.00	0.463	pCi/L	07/06/18 13:12	07/26/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					07/06/18 13:12	07/26/18 16:48	1
Y Carrier	90.8		40 - 110					07/06/18 13:12	07/26/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.363	U	0.297	0.298	5.00	0.463	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15271 MW-3 DUP

Lab Sample ID: 400-155816-17

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.102	U	0.0893	0.0898	1.00	0.128	pCi/L	07/06/18 08:59	07/30/18 16:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/06/18 08:59	07/30/18 16:12	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.502	U	0.335	0.338	1.00	0.521	pCi/L	07/06/18 13:12	07/26/18 16:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/06/18 13:12	07/26/18 16:49	1
Y Carrier	83.0		40 - 110					07/06/18 13:12	07/26/18 16:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.604		0.347	0.350	5.00	0.521	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15272 MW-2

Lab Sample ID: 400-155816-18

Date Collected: 06/27/18 12:36

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.195		0.112	0.113	1.00	0.129	pCi/L	07/06/18 08:59	07/30/18 16:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					07/06/18 08:59	07/30/18 16:12	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0783	U	0.240	0.240	1.00	0.443	pCi/L	07/06/18 13:12	07/26/18 16:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					07/06/18 13:12	07/26/18 16:49	1
Y Carrier	92.7		40 - 110					07/06/18 13:12	07/26/18 16:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.117	U	0.265	0.265	5.00	0.443	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15273 MW-12

Lab Sample ID: 400-155816-19

Date Collected: 06/27/18 13:35

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0802	U	0.0885	0.0888	1.00	0.141	pCi/L	07/06/18 08:59	07/30/18 16:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/06/18 08:59	07/30/18 16:12	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.102	U	0.256	0.256	1.00	0.441	pCi/L	07/06/18 13:12	07/26/18 16:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/06/18 13:12	07/26/18 16:49	1
Y Carrier	92.3		40 - 110					07/06/18 13:12	07/26/18 16:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.183	U	0.271	0.271	5.00	0.441	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15274 MW-11

Lab Sample ID: 400-155816-20

Date Collected: 06/27/18 14:56

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.392		0.146	0.150	1.00	0.135	pCi/L	07/06/18 08:59	07/30/18 16:12	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					07/06/18 08:59	07/30/18 16:12	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.145	U	0.234	0.234	1.00	0.395	pCi/L	07/06/18 13:12	07/26/18 16:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					07/06/18 13:12	07/26/18 16:49	1
Y Carrier	91.2		40 - 110					07/06/18 13:12	07/26/18 16:49	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.537		0.276	0.278	5.00	0.395	pCi/L		07/31/18 11:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15275 EB-1

Lab Sample ID: 400-155816-21

Date Collected: 06/27/18 15:40

Matrix: Water

Date Received: 07/02/18 09:28

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0926	U	0.0789	0.0793	1.00	0.215	pCi/L	07/06/18 11:14	07/30/18 05:49	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					07/06/18 11:14	07/30/18 05:49	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.377	U	0.292	0.294	1.00	0.457	pCi/L	07/06/18 11:34	07/26/18 12:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.5		40 - 110					07/06/18 11:34	07/26/18 12:57	1
Y Carrier	83.0		40 - 110					07/06/18 11:34	07/26/18 12:57	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.284	U	0.302	0.305	5.00	0.457	pCi/L		07/31/18 11:31	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
SDG: Gadsden Ash Pond 1156

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15255 MW-14

Date Collected: 06/27/18 09:48

Date Received: 07/02/18 09:28

Lab Sample ID: 400-155816-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:09	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15256 PZ-1

Date Collected: 06/27/18 11:30

Date Received: 07/02/18 09:28

Lab Sample ID: 400-155816-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:09	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15257 PZ-5

Date Collected: 06/27/18 12:50

Date Received: 07/02/18 09:28

Lab Sample ID: 400-155816-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:09	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15258 PZ-6

Date Collected: 06/27/18 14:08

Date Received: 07/02/18 09:28

Lab Sample ID: 400-155816-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:09	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15259 MW-10

Lab Sample ID: 400-155816-5

Date Collected: 06/27/18 15:23

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15260 FB-2

Lab Sample ID: 400-155816-6

Date Collected: 06/27/18 15:35

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15261 MW-1

Lab Sample ID: 400-155816-7

Date Collected: 06/26/18 09:45

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15262 MW-6

Lab Sample ID: 400-155816-8

Date Collected: 06/26/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15263 MW-6 DUP

Lab Sample ID: 400-155816-9

Date Collected: 06/26/18 11:30

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15264 MW-7

Lab Sample ID: 400-155816-10

Date Collected: 06/26/18 12:47

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15265 MW-8

Lab Sample ID: 400-155816-11

Date Collected: 06/26/18 14:08

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 16:10	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:47	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15266 MW-9

Lab Sample ID: 400-155816-12

Date Collected: 06/26/18 15:10

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15267 MW-4

Lab Sample ID: 400-155816-13

Date Collected: 06/26/18 16:08

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15268 FB-1

Lab Sample ID: 400-155816-14

Date Collected: 06/26/18 16:30

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:11	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378088	07/26/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15269 MW-5

Lab Sample ID: 400-155816-15

Date Collected: 06/27/18 09:38

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:12	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378089	07/26/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15270 MW-3

Lab Sample ID: 400-155816-16

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:12	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378089	07/26/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15271 MW-3 DUP

Lab Sample ID: 400-155816-17

Date Collected: 06/27/18 10:44

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:12	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378089	07/26/18 16:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15272 MW-2

Lab Sample ID: 400-155816-18

Date Collected: 06/27/18 12:36

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:12	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378089	07/26/18 16:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15273 MW-12

Lab Sample ID: 400-155816-19

Date Collected: 06/27/18 13:35

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:12	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378089	07/26/18 16:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Client Sample ID: AY15274 MW-11

Lab Sample ID: 400-155816-20

Date Collected: 06/27/18 14:56

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374229	07/06/18 08:59	JLC	TAL SL
Total/NA	Analysis	9315		1	378823	07/30/18 16:12	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374262	07/06/18 13:12	JLC	TAL SL
Total/NA	Analysis	9320		1	378089	07/26/18 16:49	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
SDG: Gadsden Ash Pond 1156

Client Sample ID: AY15275 EB-1

Lab Sample ID: 400-155816-21

Date Collected: 06/27/18 15:40

Matrix: Water

Date Received: 07/02/18 09:28

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			374247	07/06/18 11:14	JLC	TAL SL
Total/NA	Analysis	9315		1	378617	07/30/18 05:49	RTM	TAL SL
Total/NA	Prep	PrecSep_0			374257	07/06/18 11:34	JLC	TAL SL
Total/NA	Analysis	9320		1	378091	07/26/18 12:57	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	379373	07/31/18 11:31	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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Rad

Prep Batch: 374229

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-1	AY15255 MW-14	Total/NA	Water	PrecSep-21	
400-155816-2	AY15256 PZ-1	Total/NA	Water	PrecSep-21	
400-155816-3	AY15257 PZ-5	Total/NA	Water	PrecSep-21	
400-155816-4	AY15258 PZ-6	Total/NA	Water	PrecSep-21	
400-155816-5	AY15259 MW-10	Total/NA	Water	PrecSep-21	
400-155816-6	AY15260 FB-2	Total/NA	Water	PrecSep-21	
400-155816-7	AY15261 MW-1	Total/NA	Water	PrecSep-21	
400-155816-8	AY15262 MW-6	Total/NA	Water	PrecSep-21	
400-155816-9	AY15263 MW-6 DUP	Total/NA	Water	PrecSep-21	
400-155816-10	AY15264 MW-7	Total/NA	Water	PrecSep-21	
400-155816-11	AY15265 MW-8	Total/NA	Water	PrecSep-21	
400-155816-12	AY15266 MW-9	Total/NA	Water	PrecSep-21	
400-155816-13	AY15267 MW-4	Total/NA	Water	PrecSep-21	
400-155816-14	AY15268 FB-1	Total/NA	Water	PrecSep-21	
400-155816-15	AY15269 MW-5	Total/NA	Water	PrecSep-21	
400-155816-16	AY15270 MW-3	Total/NA	Water	PrecSep-21	
400-155816-17	AY15271 MW-3 DUP	Total/NA	Water	PrecSep-21	
400-155816-18	AY15272 MW-2	Total/NA	Water	PrecSep-21	
400-155816-19	AY15273 MW-12	Total/NA	Water	PrecSep-21	
400-155816-20	AY15274 MW-11	Total/NA	Water	PrecSep-21	
MB 160-374229/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-374229/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-155816-1 DU	AY15255 MW-14	Total/NA	Water	PrecSep-21	

Prep Batch: 374247

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-21	AY15275 EB-1	Total/NA	Water	PrecSep-21	
MB 160-374247/6-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-374247/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-374247/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 374257

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-21	AY15275 EB-1	Total/NA	Water	PrecSep_0	
MB 160-374257/6-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-374257/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-374257/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

Prep Batch: 374262

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-1	AY15255 MW-14	Total/NA	Water	PrecSep_0	
400-155816-2	AY15256 PZ-1	Total/NA	Water	PrecSep_0	
400-155816-3	AY15257 PZ-5	Total/NA	Water	PrecSep_0	
400-155816-4	AY15258 PZ-6	Total/NA	Water	PrecSep_0	
400-155816-5	AY15259 MW-10	Total/NA	Water	PrecSep_0	
400-155816-6	AY15260 FB-2	Total/NA	Water	PrecSep_0	
400-155816-7	AY15261 MW-1	Total/NA	Water	PrecSep_0	
400-155816-8	AY15262 MW-6	Total/NA	Water	PrecSep_0	
400-155816-9	AY15263 MW-6 DUP	Total/NA	Water	PrecSep_0	
400-155816-10	AY15264 MW-7	Total/NA	Water	PrecSep_0	
400-155816-11	AY15265 MW-8	Total/NA	Water	PrecSep_0	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
SDG: Gadsden Ash Pond 1156

Rad (Continued)

Prep Batch: 374262 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-155816-12	AY15266 MW-9	Total/NA	Water	PrecSep_0	
400-155816-13	AY15267 MW-4	Total/NA	Water	PrecSep_0	
400-155816-14	AY15268 FB-1	Total/NA	Water	PrecSep_0	
400-155816-15	AY15269 MW-5	Total/NA	Water	PrecSep_0	
400-155816-16	AY15270 MW-3	Total/NA	Water	PrecSep_0	
400-155816-17	AY15271 MW-3 DUP	Total/NA	Water	PrecSep_0	
400-155816-18	AY15272 MW-2	Total/NA	Water	PrecSep_0	
400-155816-19	AY15273 MW-12	Total/NA	Water	PrecSep_0	
400-155816-20	AY15274 MW-11	Total/NA	Water	PrecSep_0	
MB 160-374262/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-374262/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-155816-1 DU	AY15255 MW-14	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-374229/23-A
Matrix: Water
Analysis Batch: 378823

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374229

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.05564	U	0.0502	0.0505	1.00	0.151	pCi/L	07/06/18 08:59	07/30/18 16:12	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/06/18 08:59	07/30/18 16:12	1

Lab Sample ID: LCS 160-374229/1-A
Matrix: Water
Analysis Batch: 378617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374229

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	13.83		1.49	1.00	0.150	pCi/L	91	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	104		40 - 110						

Lab Sample ID: 400-155816-1 DU
Matrix: Water
Analysis Batch: 378617

Client Sample ID: AY15255 MW-14
Prep Type: Total/NA
Prep Batch: 374229

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.126	U	0.2145		0.123	1.00	0.145	pCi/L	0.39	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	100		40 - 110							

Lab Sample ID: MB 160-374247/6-A
Matrix: Water
Analysis Batch: 378617

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374247

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.06866	U	0.0980	0.0982	1.00	0.167	pCi/L	07/06/18 11:15	07/30/18 05:49	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					07/06/18 11:15	07/30/18 05:49	1

Lab Sample ID: LCS 160-374247/1-A
Matrix: Water
Analysis Batch: 378617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374247

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	12.90		1.43	1.00	0.134	pCi/L	85	68 - 137

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

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

Lab Sample ID: LCS 160-374247/1-A
Matrix: Water
Analysis Batch: 378617

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374247

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.1		40 - 110

Lab Sample ID: LCSD 160-374247/2-A
Matrix: Water
Analysis Batch: 378617

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374247

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	15.1	12.95		1.43	1.00	0.169	pCi/L	86	68 - 137	0.02	1

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	95.6		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-374257/6-A
Matrix: Water
Analysis Batch: 378091

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374257

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4505		0.263	0.266	1.00	0.392	pCi/L	07/06/18 11:34	07/26/18 12:57	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110	07/06/18 11:34	07/26/18 12:57	1
Y Carrier	90.8		40 - 110	07/06/18 11:34	07/26/18 12:57	1

Lab Sample ID: LCS 160-374257/1-A
Matrix: Water
Analysis Batch: 378091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374257

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	10.8	10.52		1.26	1.00	0.457	pCi/L	97	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.1		40 - 110
Y Carrier	79.6		40 - 110

Lab Sample ID: LCSD 160-374257/2-A
Matrix: Water
Analysis Batch: 378091

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374257

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	10.8	10.69		1.30	1.00	0.508	pCi/L	99	56 - 140	0.07	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

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

Lab Sample ID: LCSD 160-374257/2-A
Matrix: Water
Analysis Batch: 378091

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374257

Carrier	LCSD %Yield	LCSD Qualifier	Limits
Ba Carrier	95.6		40 - 110
Y Carrier	80.0		40 - 110

Lab Sample ID: MB 160-374262/23-A
Matrix: Water
Analysis Batch: 378089

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374262

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1265	U	0.321	0.321	1.00	0.550	pCi/L	07/06/18 13:12	07/26/18 16:49	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110	07/06/18 13:12	07/26/18 16:49	1
Y Carrier	89.3		40 - 110	07/06/18 13:12	07/26/18 16:49	1

Lab Sample ID: LCS 160-374262/1-A
Matrix: Water
Analysis Batch: 378088

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374262

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	10.8	9.928		1.17	1.00	0.456	pCi/L	92	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	92.3		40 - 110

Lab Sample ID: 400-155816-1 DU
Matrix: Water
Analysis Batch: 378088

Client Sample ID: AY15255 MW-14
Prep Type: Total/NA
Prep Batch: 374262

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.490		0.2451	U	0.280	1.00	0.460	pCi/L	0.43	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	100		40 - 110
Y Carrier	90.8		40 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-155816-1 DU
 Matrix: Water
 Analysis Batch: 379373

Client Sample ID: AY15255 MW-14
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.616		0.4596	U	0.306	5.00	0.460	pCi/L	0.25	

- 1
- 2
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- 8
- 9
- 10
- 11
- 12
- 13

TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 475-2671

Chain of Custody Record



COC No: 400-56525-24537.1
 Page: Page 1 of 2
 Job #:

Carrier Tracking Note:
 Lab PM: Whitmire, Cheyenne R
 E-Mail: cheyenne.whitmire@testamericanc.com

Sampler: Nick Pitts
 Phone:

Client Information
 Client Contact: Sarah Copeland
 Company: Alabama Power General Test Laboratory

Address: 744 County Rd 87, GSC #8
 City: Calera
 State, Zip: AL, 35040
 Phone: 205-664-6121 (Tel)
 Email: sgcopela@southemco.com
 Project Name: CCR
 Site: Gadsden Ash Pond 1156

Due Date Requested:
 TAT Requested (days):
 Routine
 PO #:
 WO #:
 Project #:
 40007143
 SSOW #:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Soil, Sediment, etc)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	GM 4500 F	GM 4500 C	GM 4500 SO4 E	9315_Ra226, 9320_Ra228, Ra226Ra228_GFPc	Total Number of containers	Special Instructions/Note:
AY15255	6/27/18	0948	G	Water		X	N	X	X	X	X	4	MW-14
AY15256	6/27/18	1130	G	Water		X	X	X	X	X	X	2	PZ-1
AY15257	6/27/18	1250	G	Water		X	X	X	X	X	X	2	PZ-5
AY15258	6/27/18	1408	G	Water		X	X	X	X	X	X	2	PZ-6
AY15259	6/27/18	1523	G	Water		X	X	X	X	X	X	2	MW-10
AY15260	6/27/18	1535	G	Water		X	X	X	X	X	X	2	FB-2 (Field Blank)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements:

Relinquished by: Sarah Copeland Date/Time: 7/22/2018, 0930 Company: APC
 Relinquished by: Date/Time: Company:
 Relinquished by: Date/Time: Company:

Empty Kit Relinquished by: Date: _____ Time: _____ Method of Shipment:
 Relinquished by: Sarah Copeland Date/Time: 7/22/2018, 0930 Company: APC
 Relinquished by: Date/Time: Company:
 Relinquished by: Date/Time: Company:

Custody Seals Intact: Yes No
 Cooler Temperature(s) °C and Other Remarks: 25.4°C, 29.2°C



Chain of Custody Record

Client Information Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6121(Tel) Email: sjcopela@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1156		Client Information Lab PM: Whitmire, Chyenne R E-Mail: chyenne.whitmire@testamericainc.com Carrier Tracking Note:		COC No: 400-56525-24537.1 Page: Page 2 of 2 Job #:	
Due Date Requested: TAT Requested (days): Routine		Analysis Requested Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> N Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> N SM 4500 F C SM 4500 CL E SM 4500 SO4 E 9315_Ra226, 9320_Ra228, Ra228Ra228, GPPC			
Sample Identification		Special Instructions/Note:			
AY15261	6/26/18	0945	G	Water	MW-1
AY15262	6/26/18	1130	G	Water	MW-6
AY15263	6/26/18	1130	G	Water	MW-6 Dup (Sample Duplicate)
AY15264	6/26/18	1247	G	Water	MW-7
AY15265	6/26/18	1408	G	Water	MW-8
AY15266	6/26/18	1510	G	Water	MW-9
AY15267	6/26/18	1608	G	Water	MW-4
AY15268	6/26/18	1630	G	Water	FB-1 (Field Blank)
AY15269	6/27/18	938	G	Water	MW-5
AY15270	6/27/18	1044	G	Water	MW-3
AY15271	6/27/18	1044	G	Water	MW-3 Dup (Sample Duplicate)
AY15272	6/27/18	1236	G	Water	MW-2
AY15273	6/27/18	1335	G	Water	MW-12
AY15274	6/27/18	1456	G	Water	MW-11
AY15275	6/27/18	1540	G	Water	EB-1 (Equipment Blank)
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Total Number of Containers: 2 Special Instructions/Note:			
Empty Kit Relinquished by: Relinquished by: Sarah Copeland Relinquished by: Relinquished by:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/OC Requirements:			
Date: 7/2/2018 0900 Date/Time: 7/2/2018 0900 Date/Time: Date/Time:		Method of Shipment: Received by: <i>[Signature]</i> Company: APC Received by: Company: Received by: Company:			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Δ Yes Δ No		Cooler Temperature(s) °C and Other Remarks:			



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-155816-2
SDG Number: Gadsden Ash Pond 1156

Login Number: 155816

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	25.4°C, 29.2°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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-155816-2
SDG Number: Gadsden Ash Pond 1156

Login Number: 155816
List Number: 2
Creator: Press, Nicholas B

List Source: TestAmerica St. Louis
List Creation: 07/03/18 02:17 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	17.0
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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

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	09-01-18
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
Iowa	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	09-30-18
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	08-31-18
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	06-30-19
Texas	NELAP	6	T104704286-18-14	09-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-18
USDA	Federal		P330-16-00172	05-24-19
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	09-30-18 *
Michigan	State Program	5	9005	06-30-18 *
Missouri	State Program	7	780	06-30-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-155816-2
 SDG: Gadsden Ash Pond 1156

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	07-31-18 *
New Jersey	NELAP	2	MO002	06-30-19
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	07-31-18
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	08-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1157
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks & Greg Dyer
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:

Laura Midkiff

Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2018.08.24 15:47:49 -05'00'

Supervision:

T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.08.24 15:56:25 -05'00'



Metals ICP

Gadsden Ash Pond

WMWGADAP_1157

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY17097	624762	WMWGADAP_1157
AY17098	624762	WMWGADAP_1157
AY17099	624762	WMWGADAP_1157
AY17100	624762	WMWGADAP_1157
AY17101	624762	WMWGADAP_1157
AY17102	624762	WMWGADAP_1157
AY17103	624762	WMWGADAP_1157

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and passed.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.



- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for any potential matrix effects.
 8. The raw data results include results corrected for dilution.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1157

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY17097	624864	WMWGADAP_1157
AY17098	624864	WMWGADAP_1157
AY17099	624864	WMWGADAP_1157
AY17100	624864	WMWGADAP_1157
AY17101	624864	WMWGADAP_1157
AY17102	624864	WMWGADAP_1157
AY17103	624864	WMWGADAP_1157

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed at a dilution of 1 to 5 to compensate for any matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1157

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY17097	624959	WMWGADAP_1157
AY17098	624959	WMWGADAP_1157
AY17099	624959	WMWGADAP_1157
AY17100	624959	WMWGADAP_1157
AY17101	624959	WMWGADAP_1157
AY17102	624959	WMWGADAP_1157
AY17103	624959	WMWGADAP_1157

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1157

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY17097	624590	WMWGADAP_1157
AY17098	624590	WMWGADAP_1157
AY17099	624590	WMWGADAP_1157
AY17100	624590	WMWGADAP_1157
AY17101	624590	WMWGADAP_1157
AY17102	624590	WMWGADAP_1157
AY17103	624590	WMWGADAP_1157

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- All samples were between 2.5mg and 200mg residue with the exception of AY17101 & AY17103, which were below the 2.5mg residue requirement. Max volume of 150mL filtered.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY17097

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	J 0.00117	mg/L
* Barium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	0.0300	mg/L
* Beryllium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	J 0.00133	mg/L
* Boron, Total	GAS	7/23/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.1	0.5	15.3	mg/L
* Cadmium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000679	mg/L
* Antimony, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	0.0366	mg/L
* Chromium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	8/1/2018	EPA 245.1		1	0.00025	0.0005	J 0.000398	mg/L
* Lithium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	J 0.00152	mg/L
* Selenium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/25/2018	SM 2540C		1		25	195	mg/L
Filter Completion Date	KRC	7/20/2018	SM 2540C		1			7/20/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY17097

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit				Limit	Rec	Limit	Prec		
AY17103	Mercury, Total by CVAA	mg/L	0.0000558	0.0005	0.004	0.00393	0.00398	0.00384	0.0034 to 0.0046	98.3	70 to 130	1.24	20
AY17103	Boron, Total	mg/L	0.0000532	0.044	1.00	0.936	0.932	0.953	0.85 to 1.15	93.6	70 to 130	0.420	20
AY17103	Chromium, Total	mg/L	0.0000300	0.0044	0.10	0.0986	0.0983	0.101	0.085 to 0.115	98.6	70 to 130	0.286	20
AY17103	Antimony, Total	mg/L	0.000104	0.00132	0.10	0.102	0.100	0.105	0.085 to 0.115	102	70 to 130	1.13	20
AY17103	Arsenic, Total	mg/L	0.0000150	0.0022	0.10	0.0984	0.0987	0.105	0.085 to 0.115	98.4	70 to 130	0.273	20
AY17103	Beryllium, Total	mg/L	0.0000120	0.00132	0.10	0.105	0.105	0.109	0.085 to 0.115	105	70 to 130	0.109	20
AY17103	Calcium, Total	mg/L	-0.0124	0.22	5.00	5.13	4.86	4.93	4.25 to 5.75	103	70 to 130	5.33	20
AY17103	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.102	0.104	0.103	0.085 to 0.115	102	70 to 130	1.31	20
AY17103	Lithium, Total	mg/L	0.0000324	0.022	0.20	0.189	0.189	0.187	0.17 to 0.23	94.6	70 to 130	0.187	20
AY17103	Molybdenum, Total	mg/L	0.0000138	0.0044	0.10	0.0937	0.0934	0.0966	0.085 to 0.115	93.7	70 to 130	0.297	20
AY17103	Cadmium, Total	mg/L	-0.000000070	0.00066	0.10	0.107	0.108	0.112	0.085 to 0.115	107	70 to 130	0.862	20
AY17103	Cobalt, Total	mg/L	0.00000400	0.0044	0.10	0.107	0.106	0.109	0.085 to 0.115	107	70 to 130	0.419	20
AY17103	Selenium, Total	mg/L	0.0000229	0.0044	0.10	0.0985	0.0899	0.107	0.085 to 0.115	98.5	70 to 130	9.11	20
AY17103	Thallium, Total	mg/L	0.0000154	0.00044	0.10	0.101	0.103	0.102	0.085 to 0.115	101	70 to 130	1.40	20
AY17103	Barium, Total	mg/L	0.0000336	0.0044	0.10	0.101	0.0992	0.103	0.085 to 0.115	101	70 to 130	1.84	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY17097

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY17099	Solids, Dissolved	mg/L	7.00	25			155	52.0	40 to 60		0.977	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY17098

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	0.116	mg/L
* Beryllium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/23/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.1	0.5	38.4	mg/L
* Cadmium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	8/1/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/25/2018	SM 2540C		1		25	156	mg/L
Filter Completion Date	KRC	7/20/2018	SM 2540C		1			7/20/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY17098

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY17103	Mercury, Total by CVAA	mg/L	0.0000558	0.0005	0.004	0.00393	0.00398	0.00384	0.0034 to 0.0046		98.3	70 to 130	1.24	20
AY17103	Barium, Total	mg/L	0.0000336	0.0044	0.10	0.101	0.0992	0.103	0.085 to 0.115		101	70 to 130	1.84	20
AY17103	Cadmium, Total	mg/L	-0.000000070	0.00066	0.10	0.107	0.108	0.112	0.085 to 0.115		107	70 to 130	0.862	20
AY17103	Cobalt, Total	mg/L	0.00000400	0.0044	0.10	0.107	0.106	0.109	0.085 to 0.115		107	70 to 130	0.419	20
AY17103	Selenium, Total	mg/L	0.0000229	0.0044	0.10	0.0985	0.0899	0.107	0.085 to 0.115		98.5	70 to 130	9.11	20
AY17103	Thallium, Total	mg/L	0.0000154	0.00044	0.10	0.101	0.103	0.102	0.085 to 0.115		101	70 to 130	1.40	20
AY17103	Boron, Total	mg/L	0.0000532	0.044	1.00	0.936	0.932	0.953	0.85 to 1.15		93.6	70 to 130	0.420	20
AY17103	Chromium, Total	mg/L	0.0000300	0.0044	0.10	0.0986	0.0983	0.101	0.085 to 0.115		98.6	70 to 130	0.286	20
AY17103	Antimony, Total	mg/L	0.000104	0.00132	0.10	0.102	0.100	0.105	0.085 to 0.115		102	70 to 130	1.13	20
AY17103	Arsenic, Total	mg/L	0.0000150	0.0022	0.10	0.0984	0.0987	0.105	0.085 to 0.115		98.4	70 to 130	0.273	20
AY17103	Beryllium, Total	mg/L	0.0000120	0.00132	0.10	0.105	0.105	0.109	0.085 to 0.115		105	70 to 130	0.109	20
AY17103	Calcium, Total	mg/L	-0.0124	0.22	5.00	5.13	4.86	4.93	4.25 to 5.75		103	70 to 130	5.33	20
AY17103	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.102	0.104	0.103	0.085 to 0.115		102	70 to 130	1.31	20
AY17103	Lithium, Total	mg/L	0.0000324	0.022	0.20	0.189	0.189	0.187	0.17 to 0.23		94.6	70 to 130	0.187	20
AY17103	Molybdenum, Total	mg/L	0.0000138	0.0044	0.10	0.0937	0.0934	0.0966	0.085 to 0.115		93.7	70 to 130	0.297	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY17098

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY17099	Solids, Dissolved	mg/L	7.00	25			155	52.0	40 to 60		0.977	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY17099

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	0.120	mg/L
* Beryllium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/23/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.1	0.5	38.8	mg/L
* Cadmium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	8/1/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/25/2018	SM 2540C		1		25	152	mg/L
Filter Completion Date	KRC	7/20/2018	SM 2540C		1			7/20/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY17099

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY17103	Mercury, Total by CVAA	mg/L	0.0000558	0.0005	0.004	0.00393	0.00398	0.00384	0.0034 to 0.0046		98.3	70 to 130	1.24	20
AY17103	Barium, Total	mg/L	0.0000336	0.0044	0.10	0.101	0.0992	0.103	0.085 to 0.115		101	70 to 130	1.84	20
AY17103	Boron, Total	mg/L	0.0000532	0.044	1.00	0.936	0.932	0.953	0.85 to 1.15		93.6	70 to 130	0.420	20
AY17103	Chromium, Total	mg/L	0.0000300	0.0044	0.10	0.0986	0.0983	0.101	0.085 to 0.115		98.6	70 to 130	0.286	20
AY17103	Antimony, Total	mg/L	0.000104	0.00132	0.10	0.102	0.100	0.105	0.085 to 0.115		102	70 to 130	1.13	20
AY17103	Arsenic, Total	mg/L	0.0000150	0.0022	0.10	0.0984	0.0987	0.105	0.085 to 0.115		98.4	70 to 130	0.273	20
AY17103	Beryllium, Total	mg/L	0.0000120	0.00132	0.10	0.105	0.105	0.109	0.085 to 0.115		105	70 to 130	0.109	20
AY17103	Cadmium, Total	mg/L	-0.000000070	0.00066	0.10	0.107	0.108	0.112	0.085 to 0.115		107	70 to 130	0.862	20
AY17103	Cobalt, Total	mg/L	0.00000400	0.0044	0.10	0.107	0.106	0.109	0.085 to 0.115		107	70 to 130	0.419	20
AY17103	Selenium, Total	mg/L	0.0000229	0.0044	0.10	0.0985	0.0899	0.107	0.085 to 0.115		98.5	70 to 130	9.11	20
AY17103	Thallium, Total	mg/L	0.0000154	0.00044	0.10	0.101	0.103	0.102	0.085 to 0.115		101	70 to 130	1.40	20
AY17103	Calcium, Total	mg/L	-0.0124	0.22	5.00	5.13	4.86	4.93	4.25 to 5.75		103	70 to 130	5.33	20
AY17103	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.102	0.104	0.103	0.085 to 0.115		102	70 to 130	1.31	20
AY17103	Lithium, Total	mg/L	0.0000324	0.022	0.20	0.189	0.189	0.187	0.17 to 0.23		94.6	70 to 130	0.187	20
AY17103	Molybdenum, Total	mg/L	0.0000138	0.0044	0.10	0.0937	0.0934	0.0966	0.085 to 0.115		93.7	70 to 130	0.297	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

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 Calera, AL 35040
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY17099

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY17099	Solids, Dissolved	mg/L	7.00	25			155	52.0	40 to 60		0.977	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY17100

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	0.0312	mg/L
* Beryllium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/23/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.1	0.5	3.80	mg/L
* Cadmium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	8/1/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/25/2018	SM 2540C		1		25	42.7	mg/L
Filter Completion Date	KRC	7/20/2018	SM 2540C		1			7/20/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY17100

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			MB	Limit					Limit	Rec	Limit	Prec		
AY17103	Barium, Total	mg/L	0.0000336	0.0044	0.10	0.101	0.0992	0.103	0.085 to 0.115		101	70 to 130	1.84	20
AY17103	Mercury, Total by CVAA	mg/L	0.0000558	0.0005	0.004	0.00393	0.00398	0.00384	0.0034 to 0.0046		98.3	70 to 130	1.24	20
AY17103	Boron, Total	mg/L	0.0000532	0.044	1.00	0.936	0.932	0.953	0.85 to 1.15		93.6	70 to 130	0.420	20
AY17103	Chromium, Total	mg/L	0.0000300	0.0044	0.10	0.0986	0.0983	0.101	0.085 to 0.115		98.6	70 to 130	0.286	20
AY17103	Cadmium, Total	mg/L	-0.000000070	0.00066	0.10	0.107	0.108	0.112	0.085 to 0.115		107	70 to 130	0.862	20
AY17103	Cobalt, Total	mg/L	0.00000400	0.0044	0.10	0.107	0.106	0.109	0.085 to 0.115		107	70 to 130	0.419	20
AY17103	Selenium, Total	mg/L	0.0000229	0.0044	0.10	0.0985	0.0899	0.107	0.085 to 0.115		98.5	70 to 130	9.11	20
AY17103	Thallium, Total	mg/L	0.0000154	0.00044	0.10	0.101	0.103	0.102	0.085 to 0.115		101	70 to 130	1.40	20
AY17103	Calcium, Total	mg/L	-0.0124	0.22	5.00	5.13	4.86	4.93	4.25 to 5.75		103	70 to 130	5.33	20
AY17103	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.102	0.104	0.103	0.085 to 0.115		102	70 to 130	1.31	20
AY17103	Lithium, Total	mg/L	0.0000324	0.022	0.20	0.189	0.189	0.187	0.17 to 0.23		94.6	70 to 130	0.187	20
AY17103	Molybdenum, Total	mg/L	0.0000138	0.0044	0.10	0.0937	0.0934	0.0966	0.085 to 0.115		93.7	70 to 130	0.297	20
AY17103	Antimony, Total	mg/L	0.000104	0.00132	0.10	0.102	0.100	0.105	0.085 to 0.115		102	70 to 130	1.13	20
AY17103	Arsenic, Total	mg/L	0.0000150	0.0022	0.10	0.0984	0.0987	0.105	0.085 to 0.115		98.4	70 to 130	0.273	20
AY17103	Beryllium, Total	mg/L	0.0000120	0.00132	0.10	0.105	0.105	0.109	0.085 to 0.115		105	70 to 130	0.109	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY17100

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Prec	
AY17099	Solids, Dissolved	mg/L	7.00	25			155	52.0	40 to 60			0.977	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY17101

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/23/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	8/1/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/25/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	KRC	7/20/2018	SM 2540C		1			7/20/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY17101

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY17103	Mercury, Total by CVAA	mg/L	0.0000558	0.0005	0.004	0.00393	0.00398	0.00384	0.0034 to 0.0046	98.3	70 to 130	1.24	20
AY17103	Barium, Total	mg/L	0.0000336	0.0044	0.10	0.101	0.0992	0.103	0.085 to 0.115	101	70 to 130	1.84	20
AY17103	Boron, Total	mg/L	0.0000532	0.044	1.00	0.936	0.932	0.953	0.85 to 1.15	93.6	70 to 130	0.420	20
AY17103	Chromium, Total	mg/L	0.0000300	0.0044	0.10	0.0986	0.0983	0.101	0.085 to 0.115	98.6	70 to 130	0.286	20
AY17103	Calcium, Total	mg/L	-0.0124	0.22	5.00	5.13	4.86	4.93	4.25 to 5.75	103	70 to 130	5.33	20
AY17103	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.102	0.104	0.103	0.085 to 0.115	102	70 to 130	1.31	20
AY17103	Lithium, Total	mg/L	0.0000324	0.022	0.20	0.189	0.189	0.187	0.17 to 0.23	94.6	70 to 130	0.187	20
AY17103	Molybdenum, Total	mg/L	0.0000138	0.0044	0.10	0.0937	0.0934	0.0966	0.085 to 0.115	93.7	70 to 130	0.297	20
AY17103	Antimony, Total	mg/L	0.000104	0.00132	0.10	0.102	0.100	0.105	0.085 to 0.115	102	70 to 130	1.13	20
AY17103	Arsenic, Total	mg/L	0.0000150	0.0022	0.10	0.0984	0.0987	0.105	0.085 to 0.115	98.4	70 to 130	0.273	20
AY17103	Beryllium, Total	mg/L	0.0000120	0.00132	0.10	0.105	0.105	0.109	0.085 to 0.115	105	70 to 130	0.109	20
AY17103	Cadmium, Total	mg/L	-0.000000070	0.00066	0.10	0.107	0.108	0.112	0.085 to 0.115	107	70 to 130	0.862	20
AY17103	Cobalt, Total	mg/L	0.00000400	0.0044	0.10	0.107	0.106	0.109	0.085 to 0.115	107	70 to 130	0.419	20
AY17103	Selenium, Total	mg/L	0.0000229	0.0044	0.10	0.0985	0.0899	0.107	0.085 to 0.115	98.5	70 to 130	9.11	20
AY17103	Thallium, Total	mg/L	0.0000154	0.00044	0.10	0.101	0.103	0.102	0.085 to 0.115	101	70 to 130	1.40	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY17101

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY17099	Solids, Dissolved	mg/L	7.00	25			155	52.0	40 to 60		0.977	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY17102

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	0.150	mg/L
* Beryllium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/23/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.1	0.5	3.92	mg/L
* Cadmium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	J 0.00341	mg/L
* Chromium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	8/1/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/25/2018	SM 2540C		1		25	46.0	mg/L
Filter Completion Date	KRC	7/20/2018	SM 2540C		1			7/20/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY17102

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY17103	Mercury, Total by CVAA	mg/L	0.0000558	0.0005	0.004	0.00393	0.00398	0.00384	0.0034 to 0.0046		98.3	70 to 130	1.24	20
AY17103	Barium, Total	mg/L	0.0000336	0.0044	0.10	0.101	0.0992	0.103	0.085 to 0.115		101	70 to 130	1.84	20
AY17103	Antimony, Total	mg/L	0.000104	0.00132	0.10	0.102	0.100	0.105	0.085 to 0.115		102	70 to 130	1.13	20
AY17103	Arsenic, Total	mg/L	0.0000150	0.0022	0.10	0.0984	0.0987	0.105	0.085 to 0.115		98.4	70 to 130	0.273	20
AY17103	Beryllium, Total	mg/L	0.0000120	0.00132	0.10	0.105	0.105	0.109	0.085 to 0.115		105	70 to 130	0.109	20
AY17103	Cadmium, Total	mg/L	-0.000000070	0.00066	0.10	0.107	0.108	0.112	0.085 to 0.115		107	70 to 130	0.862	20
AY17103	Cobalt, Total	mg/L	0.00000400	0.0044	0.10	0.107	0.106	0.109	0.085 to 0.115		107	70 to 130	0.419	20
AY17103	Selenium, Total	mg/L	0.0000229	0.0044	0.10	0.0985	0.0899	0.107	0.085 to 0.115		98.5	70 to 130	9.11	20
AY17103	Thallium, Total	mg/L	0.0000154	0.00044	0.10	0.101	0.103	0.102	0.085 to 0.115		101	70 to 130	1.40	20
AY17103	Calcium, Total	mg/L	-0.0124	0.22	5.00	5.13	4.86	4.93	4.25 to 5.75		103	70 to 130	5.33	20
AY17103	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.102	0.104	0.103	0.085 to 0.115		102	70 to 130	1.31	20
AY17103	Lithium, Total	mg/L	0.0000324	0.022	0.20	0.189	0.189	0.187	0.17 to 0.23		94.6	70 to 130	0.187	20
AY17103	Molybdenum, Total	mg/L	0.0000138	0.0044	0.10	0.0937	0.0934	0.0966	0.085 to 0.115		93.7	70 to 130	0.297	20
AY17103	Boron, Total	mg/L	0.0000532	0.044	1.00	0.936	0.932	0.953	0.85 to 1.15		93.6	70 to 130	0.420	20
AY17103	Chromium, Total	mg/L	0.0000300	0.0044	0.10	0.0986	0.0983	0.101	0.085 to 0.115		98.6	70 to 130	0.286	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY17102

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY17099	Solids, Dissolved	mg/L	7.00	25			155	52.0	40 to 60		0.977	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY17103

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	7/23/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	8/1/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	7/23/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	7/31/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	7/31/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	7/25/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	KRC	7/20/2018	SM 2540C		1			7/20/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY17103

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY17103	Mercury, Total by CVAA	mg/L	0.0000558	0.0005	0.004	0.00393	0.00398	0.00384	0.0034 to 0.0046		98.3	70 to 130	1.24	20
AY17103	Barium, Total	mg/L	0.0000336	0.0044	0.10	0.101	0.0992	0.103	0.085 to 0.115		101	70 to 130	1.84	20
AY17103	Antimony, Total	mg/L	0.000104	0.00132	0.10	0.102	0.100	0.105	0.085 to 0.115		102	70 to 130	1.13	20
AY17103	Arsenic, Total	mg/L	0.0000150	0.0022	0.10	0.0984	0.0987	0.105	0.085 to 0.115		98.4	70 to 130	0.273	20
AY17103	Beryllium, Total	mg/L	0.0000120	0.00132	0.10	0.105	0.105	0.109	0.085 to 0.115		105	70 to 130	0.109	20
AY17103	Boron, Total	mg/L	0.0000532	0.044	1.00	0.936	0.932	0.953	0.85 to 1.15		93.6	70 to 130	0.420	20
AY17103	Chromium, Total	mg/L	0.0000300	0.0044	0.10	0.0986	0.0983	0.101	0.085 to 0.115		98.6	70 to 130	0.286	20
AY17103	Calcium, Total	mg/L	-0.0124	0.22	5.00	5.13	4.86	4.93	4.25 to 5.75		103	70 to 130	5.33	20
AY17103	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.102	0.104	0.103	0.085 to 0.115		102	70 to 130	1.31	20
AY17103	Lithium, Total	mg/L	0.0000324	0.022	0.20	0.189	0.189	0.187	0.17 to 0.23		94.6	70 to 130	0.187	20
AY17103	Molybdenum, Total	mg/L	0.0000138	0.0044	0.10	0.0937	0.0934	0.0966	0.085 to 0.115		93.7	70 to 130	0.297	20
AY17103	Cadmium, Total	mg/L	-0.000000070	0.00066	0.10	0.107	0.108	0.112	0.085 to 0.115		107	70 to 130	0.862	20
AY17103	Cobalt, Total	mg/L	0.00000400	0.0044	0.10	0.107	0.106	0.109	0.085 to 0.115		107	70 to 130	0.419	20
AY17103	Selenium, Total	mg/L	0.0000229	0.0044	0.10	0.0985	0.0899	0.107	0.085 to 0.115		98.5	70 to 130	9.11	20
AY17103	Thallium, Total	mg/L	0.0000154	0.00044	0.10	0.101	0.103	0.102	0.085 to 0.115		101	70 to 130	1.40	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 18-Jul-18
 Customer ID:
 Delivery Date: 19-Jul-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY17103

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY17099	Solids, Dissolved	mg/L	7.00	25			155	52.0	40 to 60		0.977	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information

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: 400-156777-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1157

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

8/8/2018 10:53:34 AM

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

Job ID: 400-156777-1

Laboratory: TestAmerica Pensacola

Narrative

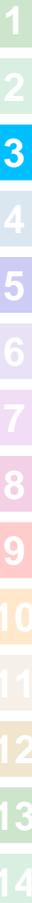
Job Narrative 400-156777-1

General Chemistry

Method(s) SM 4500 SO4 E: Due to the concentration of Sulfate in the parent sample the sample, matrix spike, and matrix spike duplicate were all diluted after the spike at a 5x dilution and the spike amounts were adjusted accordingly. (400-156777-B-1 MS) and (400-156777-B-1 MSD)

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 406894 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision 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: AY17104 MW-14 (400-156777-1), (400-156777-B-1 MS) and (400-156777-B-1 MSD). Elevated reporting limits (RLs) are provided.



Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17104 MW-14

Lab Sample ID: 400-156777-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.23		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	120	F2	25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY17105 PZ-1

Lab Sample ID: 400-156777-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.8		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.11		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2.5	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY17106 PZ-1 DUP

Lab Sample ID: 400-156777-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.7		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.12		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2.3	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY17107 PZ-6

Lab Sample ID: 400-156777-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.3		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY17108 FB-1

Lab Sample ID: 400-156777-5

No Detections.

Client Sample ID: AY17109 PZ-5

Lab Sample ID: 400-156777-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY17110 EB-1

Lab Sample ID: 400-156777-7

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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

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Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-156777-1	AY17104 MW-14	Water	07/18/18 10:46	07/23/18 14:30
400-156777-2	AY17105 PZ-1	Water	07/18/18 12:09	07/23/18 14:30
400-156777-3	AY17106 PZ-1 DUP	Water	07/18/18 12:09	07/23/18 14:30
400-156777-4	AY17107 PZ-6	Water	07/18/18 13:36	07/23/18 14:30
400-156777-5	AY17108 FB-1	Water	07/18/18 14:05	07/23/18 14:30
400-156777-6	AY17109 PZ-5	Water	07/18/18 14:52	07/23/18 14:30
400-156777-7	AY17110 EB-1	Water	07/18/18 15:20	07/23/18 14:30

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
 SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17104 MW-14

Lab Sample ID: 400-156777-1

Date Collected: 07/18/18 10:46

Matrix: Water

Date Received: 07/23/18 14:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.4		2.0	0.60	mg/L			08/02/18 09:19	1
Fluoride	0.23		0.10	0.032	mg/L			07/29/18 14:32	1
Sulfate	120	F2	25	7.0	mg/L			08/05/18 10:19	5

Client Sample ID: AY17105 PZ-1

Lab Sample ID: 400-156777-2

Date Collected: 07/18/18 12:09

Matrix: Water

Date Received: 07/23/18 14:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.8		2.0	0.60	mg/L			08/02/18 09:20	1
Fluoride	0.11		0.10	0.032	mg/L			07/29/18 14:34	1
Sulfate	2.5	J	5.0	1.4	mg/L			08/05/18 09:59	1

Client Sample ID: AY17106 PZ-1 DUP

Lab Sample ID: 400-156777-3

Date Collected: 07/18/18 12:09

Matrix: Water

Date Received: 07/23/18 14:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.7		2.0	0.60	mg/L			08/02/18 09:22	1
Fluoride	0.12		0.10	0.032	mg/L			07/29/18 14:37	1
Sulfate	2.3	J	5.0	1.4	mg/L			08/05/18 09:59	1

Client Sample ID: AY17107 PZ-6

Lab Sample ID: 400-156777-4

Date Collected: 07/18/18 13:36

Matrix: Water

Date Received: 07/23/18 14:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.3		2.0	0.60	mg/L			08/02/18 09:22	1
Fluoride	0.040	J	0.10	0.032	mg/L			07/29/18 14:40	1
Sulfate	<1.4		5.0	1.4	mg/L			08/05/18 09:59	1

Client Sample ID: AY17108 FB-1

Lab Sample ID: 400-156777-5

Date Collected: 07/18/18 14:05

Matrix: Water

Date Received: 07/23/18 14:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			08/02/18 09:22	1
Fluoride	<0.032		0.10	0.032	mg/L			07/29/18 15:03	1
Sulfate	<1.4		5.0	1.4	mg/L			08/05/18 09:59	1

Client Sample Results

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17109 PZ-5

Date Collected: 07/18/18 14:52

Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		2.0	0.60	mg/L			08/02/18 09:22	1
Fluoride	0.040	J	0.10	0.032	mg/L			07/29/18 14:56	1
Sulfate	<1.4		5.0	1.4	mg/L			08/05/18 09:59	1

Client Sample ID: AY17110 EB-1

Date Collected: 07/18/18 15:20

Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-7

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			08/02/18 09:22	1
Fluoride	<0.032		0.10	0.032	mg/L			07/29/18 15:05	1
Sulfate	<1.4		5.0	1.4	mg/L			08/05/18 09:59	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17104 MW-14
Date Collected: 07/18/18 10:46
Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	406637	08/02/18 09:19	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	406083	07/29/18 14:32	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	406894	08/05/18 10:19	RRC	TAL PEN

Client Sample ID: AY17105 PZ-1
Date Collected: 07/18/18 12:09
Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	406637	08/02/18 09:20	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	406083	07/29/18 14:34	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	406894	08/05/18 09:59	RRC	TAL PEN

Client Sample ID: AY17106 PZ-1 DUP
Date Collected: 07/18/18 12:09
Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	406637	08/02/18 09:22	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	406083	07/29/18 14:37	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	406894	08/05/18 09:59	RRC	TAL PEN

Client Sample ID: AY17107 PZ-6
Date Collected: 07/18/18 13:36
Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	406637	08/02/18 09:22	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	406083	07/29/18 14:40	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	406894	08/05/18 09:59	RRC	TAL PEN

Client Sample ID: AY17108 FB-1
Date Collected: 07/18/18 14:05
Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	406637	08/02/18 09:22	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	406083	07/29/18 15:03	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	406894	08/05/18 09:59	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17109 PZ-5

Lab Sample ID: 400-156777-6

Date Collected: 07/18/18 14:52

Matrix: Water

Date Received: 07/23/18 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	406637	08/02/18 09:22	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	406083	07/29/18 14:56	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	406894	08/05/18 09:59	RRC	TAL PEN

Client Sample ID: AY17110 EB-1

Lab Sample ID: 400-156777-7

Date Collected: 07/18/18 15:20

Matrix: Water

Date Received: 07/23/18 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	406637	08/02/18 09:22	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	406083	07/29/18 15:05	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	406894	08/05/18 09:59	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
SDG: Gadsden Ash Pond 1157

General Chemistry

Analysis Batch: 406083

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156777-1	AY17104 MW-14	Total/NA	Water	SM 4500 F C	
400-156777-2	AY17105 PZ-1	Total/NA	Water	SM 4500 F C	
400-156777-3	AY17106 PZ-1 DUP	Total/NA	Water	SM 4500 F C	
400-156777-4	AY17107 PZ-6	Total/NA	Water	SM 4500 F C	
400-156777-5	AY17108 FB-1	Total/NA	Water	SM 4500 F C	
400-156777-6	AY17109 PZ-5	Total/NA	Water	SM 4500 F C	
400-156777-7	AY17110 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-406083/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-406083/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
240-98921-J-15 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
240-98921-J-15 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-156777-B-6 DU	400-156777-B-6 DU	Total/NA	Water	SM 4500 F C	

Analysis Batch: 406637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156777-1	AY17104 MW-14	Total/NA	Water	SM 4500 CI- E	
400-156777-2	AY17105 PZ-1	Total/NA	Water	SM 4500 CI- E	
400-156777-3	AY17106 PZ-1 DUP	Total/NA	Water	SM 4500 CI- E	
400-156777-4	AY17107 PZ-6	Total/NA	Water	SM 4500 CI- E	
400-156777-5	AY17108 FB-1	Total/NA	Water	SM 4500 CI- E	
400-156777-6	AY17109 PZ-5	Total/NA	Water	SM 4500 CI- E	
400-156777-7	AY17110 EB-1	Total/NA	Water	SM 4500 CI- E	
MB 400-406637/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-406637/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
MRL 400-406637/3	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
400-156777-1 MS	AY17104 MW-14	Total/NA	Water	SM 4500 CI- E	
400-156777-1 MSD	AY17104 MW-14	Total/NA	Water	SM 4500 CI- E	

Analysis Batch: 406894

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156777-1	AY17104 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-156777-2	AY17105 PZ-1	Total/NA	Water	SM 4500 SO4 E	
400-156777-3	AY17106 PZ-1 DUP	Total/NA	Water	SM 4500 SO4 E	
400-156777-4	AY17107 PZ-6	Total/NA	Water	SM 4500 SO4 E	
400-156777-5	AY17108 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-156777-6	AY17109 PZ-5	Total/NA	Water	SM 4500 SO4 E	
400-156777-7	AY17110 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-406894/17	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-406894/18	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-406894/14	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-156777-1 MS	AY17104 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-156777-1 MSD	AY17104 MW-14	Total/NA	Water	SM 4500 SO4 E	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
 SDG: Gadsden Ash Pond 1157

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-406637/6
Matrix: Water
Analysis Batch: 406637

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			08/02/18 09:19	1

Lab Sample ID: LCS 400-406637/7
Matrix: Water
Analysis Batch: 406637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	30.9		mg/L		103	90 - 110

Lab Sample ID: MRL 400-406637/3
Matrix: Water
Analysis Batch: 406637

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.85	J	mg/L		92	50 - 150

Lab Sample ID: 400-156777-1 MS
Matrix: Water
Analysis Batch: 406637

Client Sample ID: AY17104 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.4		10.0	14.8		mg/L		114	73 - 120

Lab Sample ID: 400-156777-1 MSD
Matrix: Water
Analysis Batch: 406637

Client Sample ID: AY17104 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.4		10.0	14.9		mg/L		115	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-406083/3
Matrix: Water
Analysis Batch: 406083

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			07/29/18 14:04	1

Lab Sample ID: LCS 400-406083/4
Matrix: Water
Analysis Batch: 406083

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.87		mg/L		97	90 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
 SDG: Gadsden Ash Pond 1157

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 240-98921-J-15 MS
Matrix: Water
Analysis Batch: 406083

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	1.3		1.00	2.20		mg/L		95	75 - 125

Lab Sample ID: 240-98921-J-15 MSD
Matrix: Water
Analysis Batch: 406083

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	1.3		1.00	2.29		mg/L		104	75 - 125	4	4

Lab Sample ID: 400-156777-B-6 DU
Matrix: Water
Analysis Batch: 406083

Client Sample ID: 400-156777-B-6 DU
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride			0.0400	J	mg/L			

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-406894/17
Matrix: Water
Analysis Batch: 406894

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			08/05/18 09:52	1

Lab Sample ID: LCS 400-406894/18
Matrix: Water
Analysis Batch: 406894

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.6		mg/L		97	90 - 110

Lab Sample ID: MRL 400-406894/14
Matrix: Water
Analysis Batch: 406894

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.40	J	mg/L		88	50 - 150

Lab Sample ID: 400-156777-1 MS
Matrix: Water
Analysis Batch: 406894

Client Sample ID: AY17104 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	120	F2	10.0	121	4	mg/L		39	77 - 128

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
 SDG: Gadsden Ash Pond 1157

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

Lab Sample ID: 400-156777-1 MSD
 Matrix: Water
 Analysis Batch: 406894

Client Sample ID: AY17104 MW-14
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	120	F2	10.0	111	4 F2	mg/L		-62	77 - 128	9	5

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Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-156777-1
SDG Number: Gadsden Ash Pond 1157

Login Number: 156777

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	0.5°C IR-8
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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-1
 SDG: Gadsden Ash Pond 1157

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	09-01-18
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
Iowa	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	09-30-18
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	08-31-18
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	06-30-19
Texas	NELAP	6	T104704286-18-14	09-30-18
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-16-00172	05-24-19
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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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: 400-156777-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1157

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Sarah Copeland



Authorized for release by:

8/23/2018 3:29:12 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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
SDG: Gadsden Ash Pond 1157

Job ID: 400-156777-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-156777-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-378367: Sample aliquots reduced due to limited sample volume. AY17104 MW-14 (400-156777-1), AY17104 MW-14 (400-156777-1[DU]), AY17105 PZ-1 (400-156777-2), AY17106 PZ-1 DUP (400-156777-3), AY17107 PZ-6 (400-156777-4), AY17108 FB-1 (400-156777-5), AY17109 PZ-5 (400-156777-6) and AY17110 EB-1 (400-156777-7)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-378224: Sample aliquots reduced due to limited sample volume. AY17104 MW-14 (400-156777-1), AY17104 MW-14 (400-156777-1[DU]), AY17105 PZ-1 (400-156777-2), AY17106 PZ-1 DUP (400-156777-3), AY17107 PZ-6 (400-156777-4), AY17108 FB-1 (400-156777-5), AY17109 PZ-5 (400-156777-6) and AY17110 EB-1 (400-156777-7)



Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
SDG: Gadsden Ash Pond 1157

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
SDG: Gadsden Ash Pond 1157

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-156777-1	AY17104 MW-14	Water	07/18/18 10:46	07/23/18 14:30
400-156777-2	AY17105 PZ-1	Water	07/18/18 12:09	07/23/18 14:30
400-156777-3	AY17106 PZ-1 DUP	Water	07/18/18 12:09	07/23/18 14:30
400-156777-4	AY17107 PZ-6	Water	07/18/18 13:36	07/23/18 14:30
400-156777-5	AY17108 FB-1	Water	07/18/18 14:05	07/23/18 14:30
400-156777-6	AY17109 PZ-5	Water	07/18/18 14:52	07/23/18 14:30
400-156777-7	AY17110 EB-1	Water	07/18/18 15:20	07/23/18 14:30

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17104 MW-14

Lab Sample ID: 400-156777-1

Date Collected: 07/18/18 10:46

Matrix: Water

Date Received: 07/23/18 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.328		0.110	0.114	1.00	0.0831	pCi/L	07/27/18 09:57	08/20/18 09:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/27/18 09:57	08/20/18 09:41	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.531		0.285	0.290	1.00	0.420	pCi/L	07/27/18 14:10	08/07/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					07/27/18 14:10	08/07/18 16:48	1
Y Carrier	88.2		40 - 110					07/27/18 14:10	08/07/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.859		0.305	0.312	5.00	0.420	pCi/L		08/23/18 00:46	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17105 PZ-1

Lab Sample ID: 400-156777-2

Date Collected: 07/18/18 12:09

Matrix: Water

Date Received: 07/23/18 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.277		0.104	0.107	1.00	0.0907	pCi/L	07/27/18 09:57	08/20/18 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/27/18 09:57	08/20/18 09:42	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0373	U	0.245	0.245	1.00	0.434	pCi/L	07/27/18 14:10	08/07/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/27/18 14:10	08/07/18 16:48	1
Y Carrier	91.2		40 - 110					07/27/18 14:10	08/07/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.314	U	0.266	0.267	5.00	0.434	pCi/L		08/23/18 00:46	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17106 PZ-1 DUP

Lab Sample ID: 400-156777-3

Date Collected: 07/18/18 12:09

Matrix: Water

Date Received: 07/23/18 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.268		0.105	0.108	1.00	0.101	pCi/L	07/27/18 09:57	08/20/18 09:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					07/27/18 09:57	08/20/18 09:42	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0740	U	0.253	0.253	1.00	0.473	pCi/L	07/27/18 14:10	08/07/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					07/27/18 14:10	08/07/18 16:48	1
Y Carrier	88.2		40 - 110					07/27/18 14:10	08/07/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.194	U	0.274	0.275	5.00	0.473	pCi/L		08/23/18 00:46	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17107 PZ-6

Lab Sample ID: 400-156777-4

Date Collected: 07/18/18 13:36

Matrix: Water

Date Received: 07/23/18 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.245		0.101	0.103	1.00	0.105	pCi/L	07/27/18 09:57	08/20/18 09:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/27/18 09:57	08/20/18 09:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.431		0.255	0.258	1.00	0.381	pCi/L	07/27/18 14:10	08/07/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/27/18 14:10	08/07/18 16:48	1
Y Carrier	93.5		40 - 110					07/27/18 14:10	08/07/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.676		0.274	0.278	5.00	0.381	pCi/L		08/23/18 00:46	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17108 FB-1

Lab Sample ID: 400-156777-5

Date Collected: 07/18/18 14:05

Matrix: Water

Date Received: 07/23/18 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.207		0.0927	0.0945	1.00	0.0988	pCi/L	07/27/18 09:57	08/20/18 09:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/27/18 09:57	08/20/18 09:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0297	U	0.204	0.204	1.00	0.382	pCi/L	07/27/18 14:10	08/07/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					07/27/18 14:10	08/07/18 16:48	1
Y Carrier	87.1		40 - 110					07/27/18 14:10	08/07/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.177	U	0.224	0.225	5.00	0.382	pCi/L		08/23/18 00:46	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17109 PZ-5

Lab Sample ID: 400-156777-6

Date Collected: 07/18/18 14:52

Matrix: Water

Date Received: 07/23/18 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.333		0.111	0.115	1.00	0.0986	pCi/L	07/27/18 09:57	08/20/18 09:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					07/27/18 09:57	08/20/18 09:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.101	U	0.239	0.239	1.00	0.413	pCi/L	07/27/18 14:10	08/07/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					07/27/18 14:10	08/07/18 16:48	1
Y Carrier	92.0		40 - 110					07/27/18 14:10	08/07/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.434		0.264	0.265	5.00	0.413	pCi/L		08/23/18 00:46	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17110 EB-1

Lab Sample ID: 400-156777-7

Date Collected: 07/18/18 15:20

Matrix: Water

Date Received: 07/23/18 14:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.120		0.0790	0.0798	1.00	0.105	pCi/L	07/27/18 09:57	08/20/18 09:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/27/18 09:57	08/20/18 09:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.157	U	0.238	0.238	1.00	0.401	pCi/L	07/27/18 14:10	08/07/18 16:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					07/27/18 14:10	08/07/18 16:48	1
Y Carrier	93.8		40 - 110					07/27/18 14:10	08/07/18 16:48	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.276	U	0.251	0.251	5.00	0.401	pCi/L		08/23/18 00:46	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
SDG: Gadsden Ash Pond 1157

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17104 MW-14

Date Collected: 07/18/18 10:46

Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			378224	07/27/18 09:57	JLC	TAL SL
Total/NA	Analysis	9315		1	384032	08/20/18 09:41	CDR	TAL SL
Total/NA	Prep	PrecSep_0			378367	07/27/18 14:10	JLC	TAL SL
Total/NA	Analysis	9320		1	380757	08/07/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	384691	08/23/18 00:46	MAR	TAL SL

Client Sample ID: AY17105 PZ-1

Date Collected: 07/18/18 12:09

Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			378224	07/27/18 09:57	JLC	TAL SL
Total/NA	Analysis	9315		1	384032	08/20/18 09:42	CDR	TAL SL
Total/NA	Prep	PrecSep_0			378367	07/27/18 14:10	JLC	TAL SL
Total/NA	Analysis	9320		1	380757	08/07/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	384691	08/23/18 00:46	MAR	TAL SL

Client Sample ID: AY17106 PZ-1 DUP

Date Collected: 07/18/18 12:09

Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			378224	07/27/18 09:57	JLC	TAL SL
Total/NA	Analysis	9315		1	384032	08/20/18 09:42	CDR	TAL SL
Total/NA	Prep	PrecSep_0			378367	07/27/18 14:10	JLC	TAL SL
Total/NA	Analysis	9320		1	380757	08/07/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	384691	08/23/18 00:46	MAR	TAL SL

Client Sample ID: AY17107 PZ-6

Date Collected: 07/18/18 13:36

Date Received: 07/23/18 14:30

Lab Sample ID: 400-156777-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			378224	07/27/18 09:57	JLC	TAL SL
Total/NA	Analysis	9315		1	384032	08/20/18 09:43	CDR	TAL SL
Total/NA	Prep	PrecSep_0			378367	07/27/18 14:10	JLC	TAL SL
Total/NA	Analysis	9320		1	380757	08/07/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	384691	08/23/18 00:46	MAR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
SDG: Gadsden Ash Pond 1157

Client Sample ID: AY17108 FB-1

Lab Sample ID: 400-156777-5

Date Collected: 07/18/18 14:05

Matrix: Water

Date Received: 07/23/18 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			378224	07/27/18 09:57	JLC	TAL SL
Total/NA	Analysis	9315		1	384032	08/20/18 09:43	CDR	TAL SL
Total/NA	Prep	PrecSep_0			378367	07/27/18 14:10	JLC	TAL SL
Total/NA	Analysis	9320		1	380757	08/07/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	384691	08/23/18 00:46	MAR	TAL SL

Client Sample ID: AY17109 PZ-5

Lab Sample ID: 400-156777-6

Date Collected: 07/18/18 14:52

Matrix: Water

Date Received: 07/23/18 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			378224	07/27/18 09:57	JLC	TAL SL
Total/NA	Analysis	9315		1	384032	08/20/18 09:43	CDR	TAL SL
Total/NA	Prep	PrecSep_0			378367	07/27/18 14:10	JLC	TAL SL
Total/NA	Analysis	9320		1	380757	08/07/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	384691	08/23/18 00:46	MAR	TAL SL

Client Sample ID: AY17110 EB-1

Lab Sample ID: 400-156777-7

Date Collected: 07/18/18 15:20

Matrix: Water

Date Received: 07/23/18 14:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			378224	07/27/18 09:57	JLC	TAL SL
Total/NA	Analysis	9315		1	384032	08/20/18 09:43	CDR	TAL SL
Total/NA	Prep	PrecSep_0			378367	07/27/18 14:10	JLC	TAL SL
Total/NA	Analysis	9320		1	380757	08/07/18 16:48	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	384691	08/23/18 00:46	MAR	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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
SDG: Gadsden Ash Pond 1157

Rad

Prep Batch: 378224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156777-1	AY17104 MW-14	Total/NA	Water	PrecSep-21	
400-156777-2	AY17105 PZ-1	Total/NA	Water	PrecSep-21	
400-156777-3	AY17106 PZ-1 DUP	Total/NA	Water	PrecSep-21	
400-156777-4	AY17107 PZ-6	Total/NA	Water	PrecSep-21	
400-156777-5	AY17108 FB-1	Total/NA	Water	PrecSep-21	
400-156777-6	AY17109 PZ-5	Total/NA	Water	PrecSep-21	
400-156777-7	AY17110 EB-1	Total/NA	Water	PrecSep-21	
MB 160-378224/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-378224/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-156777-1 DU	AY17104 MW-14	Total/NA	Water	PrecSep-21	

Prep Batch: 378367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-156777-1	AY17104 MW-14	Total/NA	Water	PrecSep_0	
400-156777-2	AY17105 PZ-1	Total/NA	Water	PrecSep_0	
400-156777-3	AY17106 PZ-1 DUP	Total/NA	Water	PrecSep_0	
400-156777-4	AY17107 PZ-6	Total/NA	Water	PrecSep_0	
400-156777-5	AY17108 FB-1	Total/NA	Water	PrecSep_0	
400-156777-6	AY17109 PZ-5	Total/NA	Water	PrecSep_0	
400-156777-7	AY17110 EB-1	Total/NA	Water	PrecSep_0	
MB 160-378367/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-378367/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-156777-1 DU	AY17104 MW-14	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-378224/22-A
Matrix: Water
Analysis Batch: 383785

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378224

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2869		0.115	0.118	1.00	0.114	pCi/L	07/27/18 09:57	08/20/18 09:52	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					07/27/18 09:57	08/20/18 09:52	1

Lab Sample ID: LCS 160-378224/1-A
Matrix: Water
Analysis Batch: 384032

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378224

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	13.75		1.40	1.00	0.120	pCi/L	91	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	104		40 - 110						

Lab Sample ID: 400-156777-1 DU
Matrix: Water
Analysis Batch: 384032

Client Sample ID: AY17104 MW-14
Prep Type: Total/NA
Prep Batch: 378224

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.328		0.3958		0.124	1.00	0.0871	pCi/L	0.28	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	105		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-378367/22-A
Matrix: Water
Analysis Batch: 380758

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 378367

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.2663	U	0.258	0.259	1.00	0.504	pCi/L	07/27/18 14:10	08/07/18 16:50	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					07/27/18 14:10	08/07/18 16:50	1
Y Carrier	92.3		40 - 110					07/27/18 14:10	08/07/18 16:50	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

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

Lab Sample ID: LCS 160-378367/1-A
Matrix: Water
Analysis Batch: 380757

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 378367

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	14.9	15.24		1.67	1.00	0.433	pCi/L	103	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	89.3		40 - 110

Lab Sample ID: 400-156777-1 DU
Matrix: Water
Analysis Batch: 380757

Client Sample ID: AY17104 MW-14
Prep Type: Total/NA
Prep Batch: 378367

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.531		0.5288		0.269	1.00	0.381	pCi/L	0	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	105		40 - 110
Y Carrier	89.0		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-156777-1 DU
Matrix: Water
Analysis Batch: 384691

Client Sample ID: AY17104 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.859		0.9245		0.296	5.00	0.381	pCi/L	0.11	

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-156777-2
SDG Number: Gadsden Ash Pond 1157

Login Number: 156777

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	0.5°C IR-8
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-156777-2
SDG Number: Gadsden Ash Pond 1157

Login Number: 156777
List Number: 2
Creator: Carter, Kevin M

List Source: TestAmerica St. Louis
List Creation: 07/25/18 09:47 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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	18.6
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").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
 SDG: Gadsden Ash Pond 1157

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	09-01-18
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
Iowa	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	08-31-18
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	06-30-19
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 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-156777-2
SDG: Gadsden Ash Pond 1157

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	06-30-18 *
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	08-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1159
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks & Greg Dyer
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control: Laura Midkiff

Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2018.09.27 07:38:12 -0500

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.09.28 08:43:54 -0500



Metals ICP

Gadsden Ash Pond

WMWGADAP_1159

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY18839	625742	WMWGADAP_1159
AY18840	625742	WMWGADAP_1159
AY18841	625742	WMWGADAP_1159
AY18842	625742	WMWGADAP_1159
AY18843	625742	WMWGADAP_1159
AY18844	625742	WMWGADAP_1159
AY18845	625742	WMWGADAP_1159
AY18846	625742	WMWGADAP_1159
AY18847	625742	WMWGADAP_1159
AY18848	625742	WMWGADAP_1159
AY18849	625743	WMWGADAP_1159
AY18850	625743	WMWGADAP_1159
AY18851	625743	WMWGADAP_1159
AY18852	625743	WMWGADAP_1159
AY18853	625743	WMWGADAP_1159
AY18854	625743	WMWGADAP_1159
AY18855	625743	WMWGADAP_1159
AY18856	625743	WMWGADAP_1159
AY18857	625743	WMWGADAP_1159
AY18858	625743	WMWGADAP_1159
AY18859	625744	WMWGADAP_1159

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects. The following samples were diluted due to analyzed sample concentration over the high standard of the calibration curve.

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AY18842	Calcium	x10.15
AY18843	Calcium	x10.15
AY18844	Calcium	x10.15
AY18845	Calcium	x10.15

8. The raw data results include results corrected for dilution .



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1159

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY18839	626287	WMWGADAP_1159
AY18840	626287	WMWGADAP_1159
AY18841	626287	WMWGADAP_1159
AY18842	626287	WMWGADAP_1159
AY18843	626287	WMWGADAP_1159
AY18844	626287	WMWGADAP_1159
AY18845	626287	WMWGADAP_1159
AY18846	626287	WMWGADAP_1159
AY18847	626287	WMWGADAP_1159
AY18848	626287	WMWGADAP_1159
AY18849	626288	WMWGADAP_1159
AY18850	626288	WMWGADAP_1159
AY18851	626288	WMWGADAP_1159
AY18852	626288	WMWGADAP_1159
AY18853	626288	WMWGADAP_1159
AY18854	626288	WMWGADAP_1159
AY18855	626288	WMWGADAP_1159
AY18856	626288	WMWGADAP_1159
AY18857	626288	WMWGADAP_1159
AY18858	626288	WMWGADAP_1159
AY18859	626289	WMWGADAP_1159

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.

Matrix Specific Quality Control Procedures

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a dilution of 1 to 5 to compensate for any matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1159

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY18839	626012	WMWGADAP_1159
AY18840	626012	WMWGADAP_1159
AY18841	626012	WMWGADAP_1159
AY18842	626012	WMWGADAP_1159
AY18843	626012	WMWGADAP_1159
AY18844	626012	WMWGADAP_1159
AY18845	626012	WMWGADAP_1159
AY18846	626012	WMWGADAP_1159
AY18847	626012	WMWGADAP_1159
AY18848	626012	WMWGADAP_1159
AY18849	626013	WMWGADAP_1159
AY18850	626013	WMWGADAP_1159
AY18851	626013	WMWGADAP_1159
AY18852	626013	WMWGADAP_1159
AY18853	626013	WMWGADAP_1159
AY18854	626013	WMWGADAP_1159
AY18855	626013	WMWGADAP_1159
AY18856	626013	WMWGADAP_1159
AY18857	626013	WMWGADAP_1159
AY18858	626013	WMWGADAP_1159
AY18859	626014	WMWGADAP_1159

4. All of the above samples were analyzed by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.

Matrix Specific Quality Control Procedures

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1159

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY18839	625761	WMWGADAP_1159
AY18840	625761	WMWGADAP_1159
AY18841	625761	WMWGADAP_1159
AY18842	625761	WMWGADAP_1159
AY18843	625761	WMWGADAP_1159
AY18844	625761	WMWGADAP_1159
AY18845	625761	WMWGADAP_1159
AY18846	625762	WMWGADAP_1159
AY18847	625762	WMWGADAP_1159
AY18848	625762	WMWGADAP_1159
AY18849	625762	WMWGADAP_1159
AY18850	625762	WMWGADAP_1159
AY18851	625762	WMWGADAP_1159
AY18852	625762	WMWGADAP_1159
AY18853	625762	WMWGADAP_1159
AY18854	625762	WMWGADAP_1159
AY18855	625762	WMWGADAP_1159
AY18856	626091	WMWGADAP_1159
AY18857	626091	WMWGADAP_1159
AY18858	626091	WMWGADAP_1159
AY18859	626091	WMWGADAP_1159

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Case Narrative



General Quality Control Procedures:

- A blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- All samples were between 2.5mg and 200mg residue, except for AY18841, AY18850, & AY18859 which was < 2.5mg residue requirement. Max volume was filtered.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY18839

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0274	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	J 0.00129	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.1	0.5	13.8	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000536	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0308	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	J 0.00042	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	J 0.00143	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	175	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY18839

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115	91.6	70 to 130	1.06	20
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115	99.3	70 to 130	0.641	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115	84.6	70 to 130	1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115	98.3	70 to 130	0.272	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15	95.1	70 to 130	0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75	98.3	70 to 130	1.22	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115	97.4	70 to 130	0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046	95.5	70 to 130	3.09	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115	96.1	70 to 130	1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23	84.8	70 to 130	16.3	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115	95.2	70 to 130	1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115	86.6	70 to 130	1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115	96.1	70 to 130	1.79	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115	82.9	70 to 130	0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115	87.3	70 to 130	0.938	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY18839

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY18845	Solids, Dissolved	mg/L	2.00	25			482	56.0	40 to 60			0.516	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY18840

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	0.0130	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.189	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	0.474	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.1	0.5	27.5	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0205	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	182	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY18840

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115	99.3	70 to 130	0.641	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115	91.6	70 to 130	1.06	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115	97.4	70 to 130	0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046	95.5	70 to 130	3.09	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115	95.2	70 to 130	1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115	86.6	70 to 130	1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115	96.1	70 to 130	1.79	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115	82.9	70 to 130	0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115	87.3	70 to 130	0.938	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115	84.6	70 to 130	1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115	98.3	70 to 130	0.272	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115	96.1	70 to 130	1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23	84.8	70 to 130	16.3	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15	95.1	70 to 130	0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75	98.3	70 to 130	1.22	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY18840

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18845	Solids, Dissolved	mg/L	2.00	25			482	56.0	40 to 60		0.516	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY18841

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY18841

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115		99.3	70 to 130		0.641	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115		91.6	70 to 130		1.06	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115		97.4	70 to 130		0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046		95.5	70 to 130		3.09	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115		95.2	70 to 130		1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115		86.6	70 to 130		1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115		96.1	70 to 130		1.79	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115		82.9	70 to 130		0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115		87.3	70 to 130		0.938	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115		84.6	70 to 130		1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115		98.3	70 to 130		0.272	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15		95.1	70 to 130		0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75		98.3	70 to 130		1.22	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115		96.1	70 to 130		1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23		84.8	70 to 130		16.3	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 06-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY18841

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18845	Solids, Dissolved	mg/L	2.00	25			482	56.0	40 to 60		0.516	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY18842

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	J 0.00336	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0402	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	1.21	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		10.15	1.015	5.075	259	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0193	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		50	1220	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY18842

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			MB	Limit					Limit	Rec	Limit	Prec		
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115		99.3	70 to 130	0.641	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115		91.6	70 to 130	1.06	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115		97.4	70 to 130	0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046		95.5	70 to 130	3.09	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15		95.1	70 to 130	0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75		98.3	70 to 130	1.22	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115		95.2	70 to 130	1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115		86.6	70 to 130	1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115		96.1	70 to 130	1.79	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115		82.9	70 to 130	0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115		87.3	70 to 130	0.938	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115		96.1	70 to 130	1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23		84.8	70 to 130	16.3	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115		84.6	70 to 130	1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115		98.3	70 to 130	0.272	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY18842

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18845	Solids, Dissolved	mg/L	2.00	25			482	56.0	40 to 60		0.516	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-1 DUP

Laboratory ID Number: AY18843

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	J 0.00340	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0391	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	1.22	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		10.15	1.015	5.075	263	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0190	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		50	1220	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-1 DUP

Laboratory ID Number: AY18843

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115	99.3	70 to 130	0.641	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115	91.6	70 to 130	1.06	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15	95.1	70 to 130	0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75	98.3	70 to 130	1.22	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115	97.4	70 to 130	0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046	95.5	70 to 130	3.09	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115	84.6	70 to 130	1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115	98.3	70 to 130	0.272	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115	82.9	70 to 130	0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115	87.3	70 to 130	0.938	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115	95.2	70 to 130	1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115	86.6	70 to 130	1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115	96.1	70 to 130	1.79	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115	96.1	70 to 130	1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23	84.8	70 to 130	16.3	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-1 DUP

Laboratory ID Number: AY18843

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18845	Solids, Dissolved	mg/L	2.00	25			482	56.0	40 to 60		0.516	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY18844

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	0.988	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0566	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	0.697	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		10.15	1.015	5.075	107	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0332	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	0.0764	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0209	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	485	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY18844

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115		99.3	70 to 130		0.641	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115		91.6	70 to 130		1.06	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15		95.1	70 to 130		0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75		98.3	70 to 130		1.22	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115		95.2	70 to 130		1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115		86.6	70 to 130		1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115		96.1	70 to 130		1.79	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115		96.1	70 to 130		1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23		84.8	70 to 130		16.3	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115		84.6	70 to 130		1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115		98.3	70 to 130		0.272	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115		97.4	70 to 130		0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046		95.5	70 to 130		3.09	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115		82.9	70 to 130		0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115		87.3	70 to 130		0.938	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY18844

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Prec	Prec	Limit
								Duplicate	LCS			Rec	Limit	Prec	Limit
AY18845	Solids, Dissolved	mg/L	2.00		25			482	56.0		40 to 60			0.516	5

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY18845

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0431	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	1.00	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		10.15	1.015	5.075	88.5	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0223	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	487	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY18845

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115	99.3	70 to 130	0.641	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115	84.6	70 to 130	1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115	98.3	70 to 130	0.272	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115	91.6	70 to 130	1.06	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15	95.1	70 to 130	0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75	98.3	70 to 130	1.22	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115	82.9	70 to 130	0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115	87.3	70 to 130	0.938	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115	97.4	70 to 130	0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046	95.5	70 to 130	3.09	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115	96.1	70 to 130	1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23	84.8	70 to 130	16.3	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115	95.2	70 to 130	1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115	86.6	70 to 130	1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115	96.1	70 to 130	1.79	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY18845

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18845	Solids, Dissolved	mg/L	2.00	25			482	56.0	40 to 60		0.516	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY18846

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0906	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.1	0.5	36.7	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	140	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY18846

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115	99.3	70 to 130	0.641	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115	97.4	70 to 130	0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046	95.5	70 to 130	3.09	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115	91.6	70 to 130	1.06	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115	82.9	70 to 130	0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115	87.3	70 to 130	0.938	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15	95.1	70 to 130	0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75	98.3	70 to 130	1.22	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115	84.6	70 to 130	1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115	98.3	70 to 130	0.272	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115	96.1	70 to 130	1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23	84.8	70 to 130	16.3	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115	95.2	70 to 130	1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115	86.6	70 to 130	1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115	96.1	70 to 130	1.79	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY18846

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60		0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY18847

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.216	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	0.442	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.1	0.5	37.6	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	183	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY18847

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115	99.3	70 to 130	0.641	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115	91.6	70 to 130	1.06	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115	95.2	70 to 130	1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115	86.6	70 to 130	1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115	96.1	70 to 130	1.79	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115	82.9	70 to 130	0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115	87.3	70 to 130	0.938	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115	84.6	70 to 130	1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115	98.3	70 to 130	0.272	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115	96.1	70 to 130	1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23	84.8	70 to 130	16.3	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15	95.1	70 to 130	0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75	98.3	70 to 130	1.22	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115	97.4	70 to 130	0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046	95.5	70 to 130	3.09	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY18847

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Prec	
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60	0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY18848

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0542	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	J 0.0571	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.1	0.5	18.3	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	71.3	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY18848

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AY18848	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.0993	0.0999	0.111	0.085 to 0.115	99.3	70 to 130	0.641	20
AY18848	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0916	0.0926	0.110	0.085 to 0.115	91.6	70 to 130	1.06	20
AY18848	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.139	0.141	0.103	0.085 to 0.115	84.6	70 to 130	1.92	20
AY18848	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.0983	0.0981	0.112	0.085 to 0.115	98.3	70 to 130	0.272	20
AY18848	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0974	0.0973	0.113	0.085 to 0.115	97.4	70 to 130	0.106	20
AY18848	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00382	0.00394	0.00398	0.0034 to 0.0046	95.5	70 to 130	3.09	20
AY18848	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0961	0.0971	0.113	0.085 to 0.115	96.1	70 to 130	1.07	20
AY18848	Lithium, Total	mg/L	-0.0000937	0.022	0.20	0.170	0.200	0.195	0.17 to 0.23	84.8	70 to 130	16.3	20
AY18848	Boron, Total	mg/L	0.00117	0.044	1.00	1.01	1.00	0.956	0.85 to 1.15	95.1	70 to 130	0.818	20
AY18848	Calcium, Total	mg/L	-0.00198	0.22	5.00	23.2	22.9	5.02	4.25 to 5.75	98.3	70 to 130	1.22	20
AY18848	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0829	0.0836	0.0977	0.085 to 0.115	82.9	70 to 130	0.912	20
AY18848	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0873	0.0881	0.104	0.085 to 0.115	87.3	70 to 130	0.938	20
AY18848	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0952	0.0964	0.107	0.085 to 0.115	95.2	70 to 130	1.21	20
AY18848	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0866	0.0883	0.0978	0.085 to 0.115	86.6	70 to 130	1.97	20
AY18848	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0961	0.0979	0.109	0.085 to 0.115	96.1	70 to 130	1.79	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY18848

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60		0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY18849

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	J 0.00365	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.250	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	0.106	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	37.4	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	195	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY18849

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046	101	70 to 130	1.72	20
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115	87.8	70 to 130	2.36	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115	82.5	70 to 130	1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115	95.1	70 to 130	0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23	99.8	70 to 130	0.439	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115	86.4	70 to 130	0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15	96.5	70 to 130	0.104	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115	101	70 to 130	5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115	91.3	70 to 130	1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75	97.9	70 to 130	0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115	93.6	70 to 130	0.0520	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115	96.8	70 to 130	0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115	85.2	70 to 130	1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115	99.6	70 to 130	4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115	102	70 to 130	3.94	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY18849

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60		0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY18850

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY18850

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046	101	70 to 130	1.72	20
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115	87.8	70 to 130	2.36	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115	82.5	70 to 130	1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115	95.1	70 to 130	0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23	99.8	70 to 130	0.439	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115	86.4	70 to 130	0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15	96.5	70 to 130	0.104	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115	96.8	70 to 130	0.352	20
AY18858	Cobalt, Total	mg/L	-0.00000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115	85.2	70 to 130	1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115	99.6	70 to 130	4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115	102	70 to 130	3.94	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115	101	70 to 130	5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115	91.3	70 to 130	1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75	97.9	70 to 130	0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115	93.6	70 to 130	0.0520	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 07-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY18850

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60		0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY18851

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0791	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	0.103	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	25.4	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	142	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY18851

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115	87.8	70 to 130	2.36	20
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046	101	70 to 130	1.72	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115	101	70 to 130	5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115	91.3	70 to 130	1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75	97.9	70 to 130	0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115	93.6	70 to 130	0.0520	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115	82.5	70 to 130	1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115	95.1	70 to 130	0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23	99.8	70 to 130	0.439	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115	96.8	70 to 130	0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115	85.2	70 to 130	1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115	99.6	70 to 130	4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115	102	70 to 130	3.94	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115	86.4	70 to 130	0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15	96.5	70 to 130	0.104	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY18851

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60		0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY18852

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	J 0.00203	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.134	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	J 0.0659	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	51.2	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	208	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY18852

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046		101	70 to 130		1.72	20
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115		87.8	70 to 130		2.36	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115		82.5	70 to 130		1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115		95.1	70 to 130		0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23		99.8	70 to 130		0.439	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115		86.4	70 to 130		0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15		96.5	70 to 130		0.104	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115		101	70 to 130		5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115		91.3	70 to 130		1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75		97.9	70 to 130		0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115		93.6	70 to 130		0.0520	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115		96.8	70 to 130		0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115		85.2	70 to 130		1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115		99.6	70 to 130		4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115		102	70 to 130		3.94	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY18852

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60		0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-8 DUP

Laboratory ID Number: AY18853

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	J 0.00218	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.137	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	J 0.0644	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	52.0	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	215	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-8 DUP

Laboratory ID Number: AY18853

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115	87.8	70 to 130	2.36	20
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046	101	70 to 130	1.72	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115	82.5	70 to 130	1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115	95.1	70 to 130	0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23	99.8	70 to 130	0.439	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115	86.4	70 to 130	0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15	96.5	70 to 130	0.104	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115	101	70 to 130	5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115	91.3	70 to 130	1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75	97.9	70 to 130	0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115	93.6	70 to 130	0.0520	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115	96.8	70 to 130	0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115	85.2	70 to 130	1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115	99.6	70 to 130	4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115	102	70 to 130	3.94	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-8 DUP

Laboratory ID Number: AY18853

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60		0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY18854

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.161	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	J 0.0524	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	42.3	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	192	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY18854

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046	101	70 to 130	1.72	20
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115	87.8	70 to 130	2.36	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115	82.5	70 to 130	1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115	95.1	70 to 130	0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23	99.8	70 to 130	0.439	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115	101	70 to 130	5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115	91.3	70 to 130	1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75	97.9	70 to 130	0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115	93.6	70 to 130	0.0520	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115	96.8	70 to 130	0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115	85.2	70 to 130	1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115	99.6	70 to 130	4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115	102	70 to 130	3.94	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115	86.4	70 to 130	0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15	96.5	70 to 130	0.104	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY18854

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60	0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY18855

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	J 0.00265	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.307	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	0.135	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	76.0	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/13/2018	SM 2540C		1		25	346	mg/L
Filter Completion Date	KRC	8/9/2018	SM 2540C		1			8/9/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY18855

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit	
				Limit	Spike				Limit	Rec	Limit	Prec			
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046		101	70 to 130		1.72	20
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115		87.8	70 to 130		2.36	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115		82.5	70 to 130		1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115		95.1	70 to 130		0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23		99.8	70 to 130		0.439	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115		86.4	70 to 130		0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15		96.5	70 to 130		0.104	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115		101	70 to 130		5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115		91.3	70 to 130		1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75		97.9	70 to 130		0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115		93.6	70 to 130		0.0520	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115		96.8	70 to 130		0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115		85.2	70 to 130		1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115		99.6	70 to 130		4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115		102	70 to 130		3.94	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY18855

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY18855	Solids, Dissolved	mg/L	2.00	25			348	56.0	40 to 60		0.288	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY18856

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0448	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	J 0.0637	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	65.7	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000587	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	J 0.00251	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/15/2018	SM 2540C		1		25	479	mg/L
Filter Completion Date	KRC	8/14/2018	SM 2540C		1			8/14/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY18856

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046	101	70 to 130	1.72	20
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115	87.8	70 to 130	2.36	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115	82.5	70 to 130	1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115	95.1	70 to 130	0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23	99.8	70 to 130	0.439	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115	101	70 to 130	5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115	91.3	70 to 130	1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75	97.9	70 to 130	0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115	93.6	70 to 130	0.0520	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115	86.4	70 to 130	0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15	96.5	70 to 130	0.104	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115	96.8	70 to 130	0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115	85.2	70 to 130	1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115	99.6	70 to 130	4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115	102	70 to 130	3.94	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY18856

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY18856	Solids, Dissolved	mg/L	4.00	25			474	52.0	40 to 60			0.525	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY18857

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.0265	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	3.89	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/15/2018	SM 2540C		1		25	46.0	mg/L
Filter Completion Date	KRC	8/14/2018	SM 2540C		1			08/14/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY18857

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046		101	70 to 130		1.72	20
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115		87.8	70 to 130		2.36	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115		82.5	70 to 130		1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115		95.1	70 to 130		0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23		99.8	70 to 130		0.439	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115		86.4	70 to 130		0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15		96.5	70 to 130		0.104	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115		101	70 to 130		5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115		91.3	70 to 130		1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75		97.9	70 to 130		0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115		93.6	70 to 130		0.0520	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115		96.8	70 to 130		0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115		85.2	70 to 130		1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115		99.6	70 to 130		4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115		102	70 to 130		3.94	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY18857

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18856	Solids, Dissolved	mg/L	4.00	25			474	52.0	40 to 60		0.525	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

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 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY18858

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	0.119	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/13/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.1	0.5	3.74	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	J 0.00221	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/13/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/15/2018	SM 2540C		1		25	48.0	mg/L
Filter Completion Date	KRC	8/14/2018	SM 2540C		1			08/14/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY18858

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit	
				Limit	Spike				Limit	Rec	Limit	Prec			
AY18858	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00404	0.00411	0.00397	0.0034 to 0.0046		101	70 to 130		1.72	20
AY18858	Molybdenum, Total	mg/L	0.0000126	0.0044	0.10	0.0878	0.0857	0.0978	0.085 to 0.115		87.8	70 to 130		2.36	20
AY18858	Antimony, Total	mg/L	0.0000748	0.00176	0.10	0.0825	0.0814	0.0977	0.085 to 0.115		82.5	70 to 130		1.28	20
AY18858	Arsenic, Total	mg/L	0.0000133	0.0022	0.10	0.0951	0.0957	0.113	0.085 to 0.115		95.1	70 to 130		0.681	20
AY18858	Lithium, Total	mg/L	-0.000179	0.022	0.20	0.200	0.199	0.197	0.17 to 0.23		99.8	70 to 130		0.439	20
AY18858	Barium, Total	mg/L	0.0000107	0.0044	0.10	0.205	0.204	0.103	0.085 to 0.115		86.4	70 to 130		0.640	20
AY18858	Boron, Total	mg/L	0.00111	0.044	1.00	0.965	0.966	0.965	0.85 to 1.15		96.5	70 to 130		0.104	20
AY18858	Beryllium, Total	mg/L	0.0000191	0.00132	0.10	0.101	0.0960	0.112	0.085 to 0.115		101	70 to 130		5.29	20
AY18858	Cadmium, Total	mg/L	0.00000357	0.00066	0.10	0.0913	0.0930	0.110	0.085 to 0.115		91.3	70 to 130		1.79	20
AY18858	Calcium, Total	mg/L	-0.0000979	0.22	5.00	8.64	8.63	5.00	4.25 to 5.75		97.9	70 to 130		0.0980	20
AY18858	Selenium, Total	mg/L	0.0000584	0.0044	0.10	0.0936	0.0937	0.109	0.085 to 0.115		93.6	70 to 130		0.0520	20
AY18858	Chromium, Total	mg/L	0.0000304	0.0044	0.10	0.0968	0.0972	0.107	0.085 to 0.115		96.8	70 to 130		0.352	20
AY18858	Cobalt, Total	mg/L	-0.000000509	0.0044	0.10	0.0874	0.0884	0.104	0.085 to 0.115		85.2	70 to 130		1.14	20
AY18858	Lead, Total	mg/L	0.00000543	0.0022	0.10	0.0996	0.0956	0.113	0.085 to 0.115		99.6	70 to 130		4.11	20
AY18858	Thallium, Total	mg/L	0.00000662	0.00044	0.10	0.102	0.0978	0.111	0.085 to 0.115		102	70 to 130		3.94	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY18858

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18858	Solids, Dissolved	mg/L	4.00	25			474	52.0	40 to 60		0.525	5

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY18859

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	8/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Chromium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	8/15/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	8/14/2018	EPA 200.7		2.03	0.01	0.05	U Not Detected	mg/L
* Molybdenum, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	8/17/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	8/17/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	KRC	8/15/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	KRC	8/14/2018	SM 2540C		1			08/14/2018	Date

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY18859

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY18859	Molybdenum, Total	mg/L	0.0000134	0.0044	0.10	0.0865	0.0862	0.0975	0.085 to 0.115	86.5	70 to 130	0.362	20
AY18859	Cadmium, Total	mg/L	0.00000369	0.00066	0.10	0.0926	0.0910	0.103	0.085 to 0.115	92.6	70 to 130	1.68	20
AY18859	Selenium, Total	mg/L	0.0000723	0.0044	0.10	0.0897	0.0874	0.104	0.085 to 0.115	89.7	70 to 130	2.50	20
AY18859	Antimony, Total	mg/L	0.0000662	0.00176	0.10	0.0833	0.0820	0.0947	0.085 to 0.115	83.3	70 to 130	1.63	20
AY18859	Arsenic, Total	mg/L	0.0000161	0.0022	0.10	0.0953	0.0947	0.110	0.085 to 0.115	95.3	70 to 130	0.661	20
AY18859	Barium, Total	mg/L	-0.00000164	0.0044	0.10	0.0877	0.0854	0.0977	0.085 to 0.115	87.7	70 to 130	2.67	20
AY18859	Beryllium, Total	mg/L	0.0000176	0.00132	0.10	0.103	0.0995	0.108	0.085 to 0.115	103	70 to 130	3.26	20
AY18859	Cobalt, Total	mg/L	-0.000000938	0.0044	0.10	0.0867	0.0852	0.102	0.085 to 0.115	86.7	70 to 130	1.82	20
AY18859	Lithium, Total	mg/L	-0.000268	0.022	0.20	0.202	0.201	0.197	0.17 to 0.23	101	70 to 130	0.470	20
AY18859	Thallium, Total	mg/L	0.00000618	0.00044	0.10	0.101	0.0992	0.109	0.085 to 0.115	101	70 to 130	2.18	20
AY18859	Boron, Total	mg/L	0.000975	0.044	1.00	0.971	0.982	0.968	0.85 to 1.15	97.1	70 to 130	1.17	20
AY18859	Calcium, Total	mg/L	-0.000906	0.22	5.00	5.00	5.02	4.95	4.25 to 5.75	100	70 to 130	0.408	20
AY18859	Chromium, Total	mg/L	0.0000245	0.0044	0.10	0.0963	0.0959	0.105	0.085 to 0.115	96.3	70 to 130	0.459	20
AY18859	Lead, Total	mg/L	0.00000523	0.0022	0.10	0.0994	0.0971	0.111	0.085 to 0.115	99.4	70 to 130	2.36	20
AY18859	Mercury, Total by CVAA	mg/L	0.00012	0.0005	0.004	0.00401	0.00403	0.00409	0.0034 to 0.0046	100	70 to 130	0.498	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 08-Aug-18
 Customer ID:
 Delivery Date: 09-Aug-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY18859

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY18856	Solids, Dissolved	mg/L	4.00	25			474	52.0	40 to 60		0.525	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information



Chain of Custody

Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA **08/08/2018 19:30**

Requested Complete Date Site Representative Collector	Routine	Results To Requested By Location	Dustin Brooks, Greg Dyer
	Gerson Pickett		Greg Dyer
	Ben Rothschild		Gadsden Ash Pond

Bottles	1	Metals	500 mL	3	TDS	500 mL	5	N/A	N/A	7	N/A	N/A
	2	Hg	250 mL	4	N/A	N/A	6	N/A	N/A	8	N/A	N/A

Comments: Groundwater Samples secured in APCO Shipping Lab located in GSC Building 8. Secured samples at 1930 on 08AUG18. Samples were received from secure location on 08/09/17 at 10:30AM. LBM 08/09/18

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-14	8/6/18	15:34	3	Groundwater		AY18839
MW-4	08/06/2018	16:37	3	Groundwater		AY18840
FB-1	08/06/2018	16:55	3	Field Blank		AY18841
MW-1	08/07/2018	08:40	3	Groundwater		AY18842
MW-1 DUP	08/07/2018	08:40	3	Sample Duplicate		AY18843
MW-2	08/07/2018	10:17	3	Groundwater		AY18844
MW-3	08/07/2018	11:07	3	Groundwater		AY18845
PZ-1	08/07/2018	12:24	3	Groundwater		AY18846
MW-5	08/07/2018	13:29	3	Groundwater		AY18847
MW-6	08/07/2018	14:31	3	Groundwater		AY18848
MW-10	08/07/2018	15:42	3	Groundwater		AY18849
FB-2	08/07/2018	15:55	3	Field Blank		AY18850
MW-7	08/08/2018	09:54	3	Groundwater		AY18851
MW-8	08/08/2018	10:54	3	Groundwater		AY18852
MW-8 DUP	08/08/2018	10:54	3	Sample Duplicate		AY18853
MW-9	08/08/2018	12:10	3	Groundwater		AY18854
MW-11	08/08/2018	13:50	3	Groundwater		AY18855
MW-12	08/08/2018	14:41	3	Groundwater		AY18856
PZ-6	08/08/2018	15:49	3	Groundwater		AY18857
PZ-5	08/08/2018	16:45	3	Groundwater		AY18858
EB-1	08/08/2018	17:15	3	Equipment Blank		AY18859

Relinquished By	Received By	Date/Time
	Laura Midkiff <small>Digitally signed by Laura Midkiff DN: cn=Laura Midkiff, o=Alabama Power Company, ou=Environmental Affairs, email=lmidkiff@southernco.com, c=US Date: 2018.08.09 10:30:09 -05'00'</small>	08/09/2018 10:30

SmarTroll ID **6496-34170-1-1**
Turbidity ID **4677-23343-4-2**

All metals and radiological bottles have pH < 2
Cooler Temp **0.5 degrees C**
Thermometer ID **5408-27568-2-2**
pH Strip ID **6803-35841-20-2; 6803-35842-20-3**



Chain of Custody

Groundwater

APC General Testing Laboratory

 Field Complete
 Lab Complete

 Outside Lab

 Lab ETA **08/08/2018 19:30**

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer
Site Representative	Gerson Pickett	Requested By	Greg Dyer
Collector	Ben Rothschild	Location	Gadsden Ash Pond

Bottles	1 Radium	1 L	3 N/A	N/A	5 N/A	N/A	7 N/A	N/A
	2 Anions	250 mL	4 N/A	N/A	6 N/A	N/A	8 N/A	N/A

Comments	Radium Duplicate Collected at MW-3 and MW-12. Groundwater Samples secured in APCO Shipping Lab located in GSC Building 8. Secured samples at 1930 on 08AUG18. Samples were received from secure location on 08/09/17 at 10:30AM. LBM
----------	--

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-14	8/6/18	15:34	2	Groundwater		AY18860
MW-4	08/06/2018	16:37	2	Groundwater		AY18861
FB-1	08/06/2018	16:55	2	Field Blank		AY18862
MW-1	08/07/2018	08:40	2	Groundwater		AY18863
MW-1 DUP	08/07/2018	08:40	2	Sample Duplicate		AY18864
MW-2	08/07/2018	10:17	2	Groundwater		AY18865
MW-3	08/07/2018	11:07	4	Groundwater		AY18866
PZ-1	08/07/2018	12:24	2	Groundwater		AY18867
MW-5	08/07/2018	13:29	2	Groundwater		AY18868
MW-6	08/07/2018	14:31	2	Groundwater		AY18869
MW-10	08/07/2018	15:42	2	Groundwater		AY18870
FB-2	08/07/2018	15:55	2	Field Blank		AY18871
MW-7	08/08/2018	09:54	2	Groundwater		AY18872
MW-8	08/08/2018	10:54	2	Groundwater		AY18873
MW-8 DUP	08/08/2018	10:54	2	Sample Duplicate		AY18874
MW-9	08/08/2018	12:10	2	Groundwater		AY18875
MW-11	08/08/2018	13:50	2	Groundwater		AY18876
MW-12	08/08/2018	14:41	4	Groundwater		AY18877
PZ-6	08/08/2018	15:49	2	Groundwater		AY18878
PZ-5	08/08/2018	16:45	2	Groundwater		AY18879
EB-1	08/08/2018	17:15	2	Equipment Blank		AY18880

Relinquished By	Received By	Date/Time
	Laura Midkiff <small>Digitally signed by Laura Midkiff DN: cn=Laura Midkiff, o=Alabama Power Company, ou=Environmental Affairs, email=lmidkiff@southernco.com, c=US Date: 2018.08.09 10:30:15 -0500</small>	08/09/2018 10:30

SmarTroll ID **6496-34170-1-1**
 Turbidity ID **4677-23343-4-2**

All metals and radiological bottles have pH < 2
 Cooler Temp **0.5 degrees C**
 Thermometer ID **5408-27568-2-2**
 pH Strip ID **6803-35841-20-2; 6803-35842-20-3**

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: 400-157681-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1159

Client Project/Site: CCR Plant Gadsden

Revision: 1

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

9/17/2018 3:20:49 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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results through

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Job ID: 400-157681-1

Laboratory: TestAmerica Pensacola

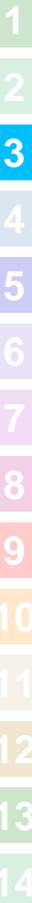
Narrative

**Job Narrative
400-157681-1**

General Chemistry

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AY18860 MW-14 (400-157681-1), AY18863 MW-1 (400-157681-4), AY18864 MW-1 DUP (400-157681-5), AY18865 MW-2 (400-157681-6), AY18866 MW-3 (400-157681-7), AY18876 MW-11 (400-157681-17) and AY18877 MW-12 (400-157681-18). Elevated reporting limits (RLs) are provided.

Revised report: Client would like project name corrected to Gadsden Ash Pond 1159 from Gadsden Ash Pond 1158.



Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18860 MW-14

Lab Sample ID: 400-157681-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.8		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.23		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	110		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18861 MW-4

Lab Sample ID: 400-157681-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.22		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY18862 FB-1

Lab Sample ID: 400-157681-3

No Detections.

Client Sample ID: AY18863 MW-1

Lab Sample ID: 400-157681-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.3		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	660		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18864 MW-1 DUP

Lab Sample ID: 400-157681-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.5		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	670		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18865 MW-2

Lab Sample ID: 400-157681-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.6		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.24		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	150		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18866 MW-3

Lab Sample ID: 400-157681-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.6		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.090	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	200		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18867 PZ-1

Lab Sample ID: 400-157681-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.3		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.11		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY18868 MW-5

Lab Sample ID: 400-157681-9

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18868 MW-5 (Continued)

Lab Sample ID: 400-157681-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.9		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	20		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18869 MW-6

Lab Sample ID: 400-157681-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.0		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.050	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	12		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18870 MW-10

Lab Sample ID: 400-157681-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.1		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY18871 FB-2

Lab Sample ID: 400-157681-12

No Detections.

Client Sample ID: AY18872 MW-7

Lab Sample ID: 400-157681-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.7		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.10		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	13		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18873 MW-8

Lab Sample ID: 400-157681-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.8		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.10		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	7.3		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18874 MW-8 DUP

Lab Sample ID: 400-157681-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.6		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.10		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	6.8		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18875 MW-9

Lab Sample ID: 400-157681-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.5		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.12		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	6.7		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18876 MW-11

Lab Sample ID: 400-157681-17

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18876 MW-11 (Continued)

Lab Sample ID: 400-157681-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.2		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	110		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18877 MW-12

Lab Sample ID: 400-157681-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.3		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	260		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY18878 PZ-6

Lab Sample ID: 400-157681-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.8		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY18879 PZ-5

Lab Sample ID: 400-157681-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.3		2.0	0.60	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY18880 EB-1

Lab Sample ID: 400-157681-21

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-157681-1	AY18860 MW-14	Water	08/06/18 15:34	08/13/18 16:10
400-157681-2	AY18861 MW-4	Water	08/06/18 16:37	08/13/18 16:10
400-157681-3	AY18862 FB-1	Water	08/06/18 16:55	08/13/18 16:10
400-157681-4	AY18863 MW-1	Water	08/07/18 08:40	08/13/18 16:10
400-157681-5	AY18864 MW-1 DUP	Water	08/07/18 08:40	08/13/18 16:10
400-157681-6	AY18865 MW-2	Water	08/07/18 10:17	08/13/18 16:10
400-157681-7	AY18866 MW-3	Water	08/07/18 11:07	08/13/18 16:10
400-157681-8	AY18867 PZ-1	Water	08/07/18 12:24	08/13/18 16:10
400-157681-9	AY18868 MW-5	Water	08/07/18 13:29	08/13/18 16:10
400-157681-10	AY18869 MW-6	Water	08/07/18 14:31	08/13/18 16:10
400-157681-11	AY18870 MW-10	Water	08/07/18 15:42	08/13/18 16:10
400-157681-12	AY18871 FB-2	Water	08/07/18 15:55	08/13/18 16:10
400-157681-13	AY18872 MW-7	Water	08/08/18 09:54	08/13/18 16:10
400-157681-14	AY18873 MW-8	Water	08/08/18 10:54	08/13/18 16:10
400-157681-15	AY18874 MW-8 DUP	Water	08/08/18 10:54	08/13/18 16:10
400-157681-16	AY18875 MW-9	Water	08/08/18 12:10	08/13/18 16:10
400-157681-17	AY18876 MW-11	Water	08/08/18 13:50	08/13/18 16:10
400-157681-18	AY18877 MW-12	Water	08/08/18 14:41	08/13/18 16:10
400-157681-19	AY18878 PZ-6	Water	08/08/18 15:49	08/13/18 16:10
400-157681-20	AY18879 PZ-5	Water	08/08/18 16:45	08/13/18 16:10
400-157681-21	AY18880 EB-1	Water	08/08/18 17:15	08/13/18 16:10

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18860 MW-14

Lab Sample ID: 400-157681-1

Date Collected: 08/06/18 15:34

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.8		2.0	0.60	mg/L			08/27/18 11:11	1
Fluoride	0.23		0.10	0.032	mg/L			08/16/18 16:03	1
Sulfate	110		25	7.0	mg/L			08/27/18 15:48	5

Client Sample ID: AY18861 MW-4

Lab Sample ID: 400-157681-2

Date Collected: 08/06/18 16:37

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	11		2.0	0.60	mg/L			08/27/18 11:11	1
Fluoride	0.22		0.10	0.032	mg/L			08/16/18 16:06	1
Sulfate	<1.4		5.0	1.4	mg/L			08/27/18 15:33	1

Client Sample ID: AY18862 FB-1

Lab Sample ID: 400-157681-3

Date Collected: 08/06/18 16:55

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			08/28/18 13:01	1
Fluoride	<0.032		0.10	0.032	mg/L			08/16/18 16:10	1
Sulfate	<1.4		5.0	1.4	mg/L			08/27/18 15:29	1

Client Sample ID: AY18863 MW-1

Lab Sample ID: 400-157681-4

Date Collected: 08/07/18 08:40

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.3		2.0	0.60	mg/L			08/28/18 13:01	1
Fluoride	0.070	J	0.10	0.032	mg/L			08/16/18 16:31	1
Sulfate	660		100	28	mg/L			08/27/18 15:48	20

Client Sample ID: AY18864 MW-1 DUP

Lab Sample ID: 400-157681-5

Date Collected: 08/07/18 08:40

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.5		2.0	0.60	mg/L			08/28/18 13:01	1
Fluoride	0.070	J	0.10	0.032	mg/L			08/16/18 16:36	1
Sulfate	670		100	28	mg/L			08/27/18 15:53	20

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18865 MW-2

Lab Sample ID: 400-157681-6

Date Collected: 08/07/18 10:17

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.6		2.0	0.60	mg/L			08/28/18 13:01	1
Fluoride	0.24		0.10	0.032	mg/L			08/16/18 16:39	1
Sulfate	150		100	28	mg/L			08/27/18 15:53	20

Client Sample ID: AY18866 MW-3

Lab Sample ID: 400-157681-7

Date Collected: 08/07/18 11:07

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.6		2.0	0.60	mg/L			08/28/18 13:01	1
Fluoride	0.090	J	0.10	0.032	mg/L			08/16/18 16:41	1
Sulfate	200		100	28	mg/L			08/27/18 15:53	20

Client Sample ID: AY18867 PZ-1

Lab Sample ID: 400-157681-8

Date Collected: 08/07/18 12:24

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.3		2.0	0.60	mg/L			08/28/18 13:01	1
Fluoride	0.11		0.10	0.032	mg/L			08/16/18 16:43	1
Sulfate	<1.4		5.0	1.4	mg/L			08/27/18 15:33	1

Client Sample ID: AY18868 MW-5

Lab Sample ID: 400-157681-9

Date Collected: 08/07/18 13:29

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.9		2.0	0.60	mg/L			08/28/18 13:01	1
Fluoride	0.060	J	0.10	0.032	mg/L			08/16/18 16:45	1
Sulfate	20		5.0	1.4	mg/L			08/28/18 17:29	1

Client Sample ID: AY18869 MW-6

Lab Sample ID: 400-157681-10

Date Collected: 08/07/18 14:31

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.0		2.0	0.60	mg/L			08/28/18 13:01	1
Fluoride	0.050	J	0.10	0.032	mg/L			08/16/18 16:48	1
Sulfate	12		5.0	1.4	mg/L			08/28/18 16:52	1

Client Sample ID: AY18870 MW-10

Lab Sample ID: 400-157681-11

Date Collected: 08/07/18 15:42

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.1		2.0	0.60	mg/L			08/28/18 13:04	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18870 MW-10

Lab Sample ID: 400-157681-11

Date Collected: 08/07/18 15:42

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.040	J	0.10	0.032	mg/L			08/16/18 16:51	1
Sulfate	<1.4		5.0	1.4	mg/L			08/28/18 16:58	1

Client Sample ID: AY18871 FB-2

Lab Sample ID: 400-157681-12

Date Collected: 08/07/18 15:55

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			08/28/18 13:04	1
Fluoride	<0.032		0.10	0.032	mg/L			08/16/18 16:54	1
Sulfate	<1.4		5.0	1.4	mg/L			08/28/18 16:58	1

Client Sample ID: AY18872 MW-7

Lab Sample ID: 400-157681-13

Date Collected: 08/08/18 09:54

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.7		2.0	0.60	mg/L			08/28/18 13:04	1
Fluoride	0.10		0.10	0.032	mg/L			08/24/18 14:32	1
Sulfate	13		5.0	1.4	mg/L			08/28/18 16:58	1

Client Sample ID: AY18873 MW-8

Lab Sample ID: 400-157681-14

Date Collected: 08/08/18 10:54

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.8		2.0	0.60	mg/L			08/28/18 13:04	1
Fluoride	0.10		0.10	0.032	mg/L			08/24/18 14:40	1
Sulfate	7.3		5.0	1.4	mg/L			08/28/18 16:58	1

Client Sample ID: AY18874 MW-8 DUP

Lab Sample ID: 400-157681-15

Date Collected: 08/08/18 10:54

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.6		2.0	0.60	mg/L			08/28/18 13:04	1
Fluoride	0.10		0.10	0.032	mg/L			08/24/18 14:43	1
Sulfate	6.8		5.0	1.4	mg/L			08/28/18 16:59	1

Client Sample ID: AY18875 MW-9

Lab Sample ID: 400-157681-16

Date Collected: 08/08/18 12:10

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.5		2.0	0.60	mg/L			08/28/18 13:04	1
Fluoride	0.12		0.10	0.032	mg/L			08/24/18 14:45	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18875 MW-9

Lab Sample ID: 400-157681-16

Date Collected: 08/08/18 12:10

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	6.7		5.0	1.4	mg/L			08/28/18 16:59	1

Client Sample ID: AY18876 MW-11

Lab Sample ID: 400-157681-17

Date Collected: 08/08/18 13:50

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.2		2.0	0.60	mg/L			08/28/18 13:10	1
Fluoride	0.060	J	0.10	0.032	mg/L			08/24/18 14:47	1
Sulfate	110		25	7.0	mg/L			08/28/18 17:34	5

Client Sample ID: AY18877 MW-12

Lab Sample ID: 400-157681-18

Date Collected: 08/08/18 14:41

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.3		2.0	0.60	mg/L			08/28/18 13:10	1
Fluoride	<0.032		0.10	0.032	mg/L			08/24/18 14:50	1
Sulfate	260		100	28	mg/L			08/28/18 17:34	20

Client Sample ID: AY18878 PZ-6

Lab Sample ID: 400-157681-19

Date Collected: 08/08/18 15:49

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.8		2.0	0.60	mg/L			08/28/18 13:10	1
Fluoride	0.040	J	0.10	0.032	mg/L			08/24/18 14:52	1
Sulfate	<1.4		5.0	1.4	mg/L			08/28/18 17:03	1

Client Sample ID: AY18879 PZ-5

Lab Sample ID: 400-157681-20

Date Collected: 08/08/18 16:45

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.3		2.0	0.60	mg/L			08/28/18 13:10	1
Fluoride	0.040	J	0.10	0.032	mg/L			08/24/18 14:55	1
Sulfate	<1.4		5.0	1.4	mg/L			08/28/18 17:03	1

Client Sample ID: AY18880 EB-1

Lab Sample ID: 400-157681-21

Date Collected: 08/08/18 17:15

Matrix: Water

Date Received: 08/13/18 16:10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			08/28/18 13:10	1
Fluoride	<0.032		0.10	0.032	mg/L			08/28/18 12:31	1
Sulfate	<1.4		5.0	1.4	mg/L			08/28/18 17:03	1

TestAmerica Pensacola

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18860 MW-14

Lab Sample ID: 400-157681-1

Date Collected: 08/06/18 15:34

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409378	08/27/18 11:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:03	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	409395	08/27/18 15:48	RRC	TAL PEN

Client Sample ID: AY18861 MW-4

Lab Sample ID: 400-157681-2

Date Collected: 08/06/18 16:37

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409378	08/27/18 11:11	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:06	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409395	08/27/18 15:33	RRC	TAL PEN

Client Sample ID: AY18862 FB-1

Lab Sample ID: 400-157681-3

Date Collected: 08/06/18 16:55

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:10	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409395	08/27/18 15:29	RRC	TAL PEN

Client Sample ID: AY18863 MW-1

Lab Sample ID: 400-157681-4

Date Collected: 08/07/18 08:40

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:31	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	409395	08/27/18 15:48	RRC	TAL PEN

Client Sample ID: AY18864 MW-1 DUP

Lab Sample ID: 400-157681-5

Date Collected: 08/07/18 08:40

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:36	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	409395	08/27/18 15:53	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18865 MW-2

Lab Sample ID: 400-157681-6

Date Collected: 08/07/18 10:17

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:39	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	409395	08/27/18 15:53	RRC	TAL PEN

Client Sample ID: AY18866 MW-3

Lab Sample ID: 400-157681-7

Date Collected: 08/07/18 11:07

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:41	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	409395	08/27/18 15:53	RRC	TAL PEN

Client Sample ID: AY18867 PZ-1

Lab Sample ID: 400-157681-8

Date Collected: 08/07/18 12:24

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:43	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409395	08/27/18 15:33	RRC	TAL PEN

Client Sample ID: AY18868 MW-5

Lab Sample ID: 400-157681-9

Date Collected: 08/07/18 13:29

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:45	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 17:29	RRC	TAL PEN

Client Sample ID: AY18869 MW-6

Lab Sample ID: 400-157681-10

Date Collected: 08/07/18 14:31

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:01	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:48	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 16:52	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18870 MW-10

Lab Sample ID: 400-157681-11

Date Collected: 08/07/18 15:42

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:04	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:51	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 16:58	RRC	TAL PEN

Client Sample ID: AY18871 FB-2

Lab Sample ID: 400-157681-12

Date Collected: 08/07/18 15:55

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:04	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	408287	08/16/18 16:54	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 16:58	RRC	TAL PEN

Client Sample ID: AY18872 MW-7

Lab Sample ID: 400-157681-13

Date Collected: 08/08/18 09:54

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:04	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409192	08/24/18 14:32	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 16:58	RRC	TAL PEN

Client Sample ID: AY18873 MW-8

Lab Sample ID: 400-157681-14

Date Collected: 08/08/18 10:54

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:04	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409192	08/24/18 14:40	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 16:58	RRC	TAL PEN

Client Sample ID: AY18874 MW-8 DUP

Lab Sample ID: 400-157681-15

Date Collected: 08/08/18 10:54

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:04	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409192	08/24/18 14:43	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 16:59	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18875 MW-9

Lab Sample ID: 400-157681-16

Date Collected: 08/08/18 12:10

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:04	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409192	08/24/18 14:45	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 16:59	RRC	TAL PEN

Client Sample ID: AY18876 MW-11

Lab Sample ID: 400-157681-17

Date Collected: 08/08/18 13:50

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409192	08/24/18 14:47	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	409578	08/28/18 17:34	RRC	TAL PEN

Client Sample ID: AY18877 MW-12

Lab Sample ID: 400-157681-18

Date Collected: 08/08/18 14:41

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409192	08/24/18 14:50	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	409578	08/28/18 17:34	RRC	TAL PEN

Client Sample ID: AY18878 PZ-6

Lab Sample ID: 400-157681-19

Date Collected: 08/08/18 15:49

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409192	08/24/18 14:52	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 17:03	RRC	TAL PEN

Client Sample ID: AY18879 PZ-5

Lab Sample ID: 400-157681-20

Date Collected: 08/08/18 16:45

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409192	08/24/18 14:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 17:03	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18880 EB-1

Lab Sample ID: 400-157681-21

Date Collected: 08/08/18 17:15

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	409518	08/28/18 13:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	409490	08/28/18 12:31	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	409578	08/28/18 17:03	RRC	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

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

General Chemistry

Analysis Batch: 408287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-1	AY18860 MW-14	Total/NA	Water	SM 4500 F C	
400-157681-2	AY18861 MW-4	Total/NA	Water	SM 4500 F C	
400-157681-3	AY18862 FB-1	Total/NA	Water	SM 4500 F C	
400-157681-4	AY18863 MW-1	Total/NA	Water	SM 4500 F C	
400-157681-5	AY18864 MW-1 DUP	Total/NA	Water	SM 4500 F C	
400-157681-6	AY18865 MW-2	Total/NA	Water	SM 4500 F C	
400-157681-7	AY18866 MW-3	Total/NA	Water	SM 4500 F C	
400-157681-8	AY18867 PZ-1	Total/NA	Water	SM 4500 F C	
400-157681-9	AY18868 MW-5	Total/NA	Water	SM 4500 F C	
400-157681-10	AY18869 MW-6	Total/NA	Water	SM 4500 F C	
400-157681-11	AY18870 MW-10	Total/NA	Water	SM 4500 F C	
400-157681-12	AY18871 FB-2	Total/NA	Water	SM 4500 F C	
MB 400-408287/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-408287/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
240-99554-C-3 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
240-99554-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-157681-4 DU	AY18863 MW-1	Total/NA	Water	SM 4500 F C	

Analysis Batch: 409192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-13	AY18872 MW-7	Total/NA	Water	SM 4500 F C	
400-157681-14	AY18873 MW-8	Total/NA	Water	SM 4500 F C	
400-157681-15	AY18874 MW-8 DUP	Total/NA	Water	SM 4500 F C	
400-157681-16	AY18875 MW-9	Total/NA	Water	SM 4500 F C	
400-157681-17	AY18876 MW-11	Total/NA	Water	SM 4500 F C	
400-157681-18	AY18877 MW-12	Total/NA	Water	SM 4500 F C	
400-157681-19	AY18878 PZ-6	Total/NA	Water	SM 4500 F C	
400-157681-20	AY18879 PZ-5	Total/NA	Water	SM 4500 F C	
MB 400-409192/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-409192/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-157681-13 MS	AY18872 MW-7	Total/NA	Water	SM 4500 F C	
400-157681-13 MSD	AY18872 MW-7	Total/NA	Water	SM 4500 F C	
400-158111-M-1 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 409378

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-1	AY18860 MW-14	Total/NA	Water	SM 4500 Cl- E	
400-157681-2	AY18861 MW-4	Total/NA	Water	SM 4500 Cl- E	
MB 400-409378/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-409378/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-409378/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-158013-B-1 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-158013-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 409395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-1	AY18860 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-157681-2	AY18861 MW-4	Total/NA	Water	SM 4500 SO4 E	
400-157681-3	AY18862 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-157681-4	AY18863 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-157681-5	AY18864 MW-1 DUP	Total/NA	Water	SM 4500 SO4 E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

General Chemistry (Continued)

Analysis Batch: 409395 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-6	AY18865 MW-2	Total/NA	Water	SM 4500 SO4 E	
400-157681-7	AY18866 MW-3	Total/NA	Water	SM 4500 SO4 E	
400-157681-8	AY18867 PZ-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-409395/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-409395/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-409395/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-157681-3 MS	AY18862 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-157681-3 MSD	AY18862 FB-1	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 409490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-21	AY18880 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-409490/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-409490/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-158277-H-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-158277-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 409518

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-3	AY18862 FB-1	Total/NA	Water	SM 4500 CI- E	
400-157681-4	AY18863 MW-1	Total/NA	Water	SM 4500 CI- E	
400-157681-5	AY18864 MW-1 DUP	Total/NA	Water	SM 4500 CI- E	
400-157681-6	AY18865 MW-2	Total/NA	Water	SM 4500 CI- E	
400-157681-7	AY18866 MW-3	Total/NA	Water	SM 4500 CI- E	
400-157681-8	AY18867 PZ-1	Total/NA	Water	SM 4500 CI- E	
400-157681-9	AY18868 MW-5	Total/NA	Water	SM 4500 CI- E	
400-157681-10	AY18869 MW-6	Total/NA	Water	SM 4500 CI- E	
400-157681-11	AY18870 MW-10	Total/NA	Water	SM 4500 CI- E	
400-157681-12	AY18871 FB-2	Total/NA	Water	SM 4500 CI- E	
400-157681-13	AY18872 MW-7	Total/NA	Water	SM 4500 CI- E	
400-157681-14	AY18873 MW-8	Total/NA	Water	SM 4500 CI- E	
400-157681-15	AY18874 MW-8 DUP	Total/NA	Water	SM 4500 CI- E	
400-157681-16	AY18875 MW-9	Total/NA	Water	SM 4500 CI- E	
400-157681-17	AY18876 MW-11	Total/NA	Water	SM 4500 CI- E	
400-157681-18	AY18877 MW-12	Total/NA	Water	SM 4500 CI- E	
400-157681-19	AY18878 PZ-6	Total/NA	Water	SM 4500 CI- E	
400-157681-20	AY18879 PZ-5	Total/NA	Water	SM 4500 CI- E	
400-157681-21	AY18880 EB-1	Total/NA	Water	SM 4500 CI- E	
MB 400-409518/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-409518/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
MRL 400-409518/3	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	
400-157681-3 MS	AY18862 FB-1	Total/NA	Water	SM 4500 CI- E	
400-157681-3 MSD	AY18862 FB-1	Total/NA	Water	SM 4500 CI- E	

Analysis Batch: 409578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-9	AY18868 MW-5	Total/NA	Water	SM 4500 SO4 E	
400-157681-10	AY18869 MW-6	Total/NA	Water	SM 4500 SO4 E	
400-157681-11	AY18870 MW-10	Total/NA	Water	SM 4500 SO4 E	
400-157681-12	AY18871 FB-2	Total/NA	Water	SM 4500 SO4 E	
400-157681-13	AY18872 MW-7	Total/NA	Water	SM 4500 SO4 E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
SDG: Gadsden Ash Pond 1159

General Chemistry (Continued)

Analysis Batch: 409578 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-14	AY18873 MW-8	Total/NA	Water	SM 4500 SO4 E	
400-157681-15	AY18874 MW-8 DUP	Total/NA	Water	SM 4500 SO4 E	
400-157681-16	AY18875 MW-9	Total/NA	Water	SM 4500 SO4 E	
400-157681-17	AY18876 MW-11	Total/NA	Water	SM 4500 SO4 E	
400-157681-18	AY18877 MW-12	Total/NA	Water	SM 4500 SO4 E	
400-157681-19	AY18878 PZ-6	Total/NA	Water	SM 4500 SO4 E	
400-157681-20	AY18879 PZ-5	Total/NA	Water	SM 4500 SO4 E	
400-157681-21	AY18880 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-409578/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-409578/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-409578/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-157681-9 MS	AY18868 MW-5	Total/NA	Water	SM 4500 SO4 E	
400-157681-9 MSD	AY18868 MW-5	Total/NA	Water	SM 4500 SO4 E	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-409378/6
Matrix: Water
Analysis Batch: 409378

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			08/27/18 10:04	1

Lab Sample ID: LCS 400-409378/7
Matrix: Water
Analysis Batch: 409378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.2		mg/L		104	90 - 110

Lab Sample ID: MRL 400-409378/3
Matrix: Water
Analysis Batch: 409378

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.73	J	mg/L		87	50 - 150

Lab Sample ID: 400-158013-B-1 MS
Matrix: Water
Analysis Batch: 409378

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	8.3	F2 F1	10.0	15.1	F1	mg/L		68	73 - 120

Lab Sample ID: 400-158013-B-1 MSD
Matrix: Water
Analysis Batch: 409378

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	8.3	F2 F1	10.0	19.2	F2	mg/L		108	73 - 120	24	8

Lab Sample ID: MB 400-409518/6
Matrix: Water
Analysis Batch: 409518

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<0.60		2.0	0.60	mg/L			08/28/18 08:55	1

Lab Sample ID: LCS 400-409518/7
Matrix: Water
Analysis Batch: 409518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.2		mg/L		104	90 - 110

Lab Sample ID: MRL 400-409518/3
Matrix: Water
Analysis Batch: 409518

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.34	J	mg/L		67	50 - 150

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Lab Sample ID: 400-157681-3 MS
Matrix: Water
Analysis Batch: 409518

Client Sample ID: AY18862 FB-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	<0.60		10.0	10.8		mg/L		108	73 - 120

Lab Sample ID: 400-157681-3 MSD
Matrix: Water
Analysis Batch: 409518

Client Sample ID: AY18862 FB-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	<0.60		10.0	10.9		mg/L		109	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-408287/3
Matrix: Water
Analysis Batch: 408287

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			08/16/18 15:28	1

Lab Sample ID: LCS 400-408287/4
Matrix: Water
Analysis Batch: 408287

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.18		mg/L		105	90 - 110

Lab Sample ID: 240-99554-C-3 MS
Matrix: Water
Analysis Batch: 408287

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.19		1.00	1.25		mg/L		106	75 - 125

Lab Sample ID: 240-99554-C-3 MSD
Matrix: Water
Analysis Batch: 408287

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.19		1.00	1.25		mg/L		106	75 - 125	0	4

Lab Sample ID: 400-157681-4 DU
Matrix: Water
Analysis Batch: 408287

Client Sample ID: AY18863 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.070	J	0.0700	J	mg/L		0	4

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: MB 400-409192/3
Matrix: Water
Analysis Batch: 409192

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			08/24/18 14:18	1

Lab Sample ID: LCS 400-409192/4
Matrix: Water
Analysis Batch: 409192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.02		mg/L		101	90 - 110

Lab Sample ID: 400-157681-13 MS
Matrix: Water
Analysis Batch: 409192

Client Sample ID: AY18872 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.10		1.00	1.14		mg/L		104	75 - 125

Lab Sample ID: 400-157681-13 MSD
Matrix: Water
Analysis Batch: 409192

Client Sample ID: AY18872 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.10		1.00	1.14		mg/L		104	75 - 125	0	4

Lab Sample ID: 400-158111-M-1 DU
Matrix: Water
Analysis Batch: 409192

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.080	J	0.0800	J	mg/L		0	4

Lab Sample ID: MB 400-409490/3
Matrix: Water
Analysis Batch: 409490

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			08/28/18 11:54	1

Lab Sample ID: LCS 400-409490/4
Matrix: Water
Analysis Batch: 409490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.02		mg/L		101	90 - 110

Lab Sample ID: 400-158277-H-1 MS
Matrix: Water
Analysis Batch: 409490

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	<0.032		1.00	1.06		mg/L		106	75 - 125

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

Lab Sample ID: 400-158277-H-1 MSD
Matrix: Water
Analysis Batch: 409490

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.032		1.00	1.06		mg/L		106	75 - 125	0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-409395/6
Matrix: Water
Analysis Batch: 409395

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			08/27/18 15:22	1

Lab Sample ID: LCS 400-409395/7
Matrix: Water
Analysis Batch: 409395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.7		mg/L		104	90 - 110

Lab Sample ID: MRL 400-409395/3
Matrix: Water
Analysis Batch: 409395

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.11	J	mg/L		82	50 - 150

Lab Sample ID: 400-157681-3 MS
Matrix: Water
Analysis Batch: 409395

Client Sample ID: AY18862 FB-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<1.4		10.0	9.22		mg/L		92	77 - 128

Lab Sample ID: 400-157681-3 MSD
Matrix: Water
Analysis Batch: 409395

Client Sample ID: AY18862 FB-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<1.4		10.0	9.44		mg/L		94	77 - 128	2	5

Lab Sample ID: MB 400-409578/6
Matrix: Water
Analysis Batch: 409578

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			08/28/18 16:52	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

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

Lab Sample ID: LCS 400-409578/7
Matrix: Water
Analysis Batch: 409578

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.0		mg/L		100	90 - 110

Lab Sample ID: MRL 400-409578/3
Matrix: Water
Analysis Batch: 409578

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.03	J	mg/L		81	50 - 150

Lab Sample ID: 400-157681-9 MS
Matrix: Water
Analysis Batch: 409578

Client Sample ID: AY18868 MW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20		10.0	30.0		mg/L		100	77 - 128

Lab Sample ID: 400-157681-9 MSD
Matrix: Water
Analysis Batch: 409578

Client Sample ID: AY18868 MW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	20		10.0	30.4		mg/L		104	77 - 128	1	5

Chain of Custody Record



Client Information
 Client Contact: Ben Roitshchadl
 Phone: Laura Midkiff
 Company: Alabama Power General Test Laboratory
 Address: 744 County Rd 87 GSC #8
 City: Callera
 State, Zip: AL 35040
 Phone: 205-664-6197(Tel)
 Email: lbmidkiff@southermco.com
 Project Name: CCR
 Site: Gadsden Ash Pond 1158

Lab Pk: Whitlire, Cheryenne R
E-Mail: cheryenne.whitlire@testamericainc.com

Analysis Requested
 Due Date Requested:
 TAT Requested (days): Routine
 PO #: 40007143
 IWO #: 40007143
 Project #: 40007143
 SSO#: 40007143

Sample Identification

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Invert, Seawater, Groundwater, Surface Water, Acid)	Preservation Code	Field Filtered Sample (Yes or No)	Perform M/S/MSD (Yes or No)	SM 4500 F_C	SM 4500 Cl_E	SM 4500 SO4_F	9315_Ra220, 9320_Ra220, Ra220R4220_CFFC	Total Number	Special Instructions/Note:
AY18878	8/8/18	1549	G	Water		X	X	X	X	X		2	PZ-6
AY18879	8/8/18	1645	G	Water		X	X	X	X	X		2	PZ-5
AY18880	8/8/18	1715	G	Water		X	X	X	X	X		2	BB-1 (Equipment Blank)

Preservation Codes:
 A - HCL
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NaHSO4
 F - MeOH
 G - Amchlor
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDA
 Other:
 M - Hexane
 N - Nitro
 O - NaNO2
 P - Na2SO4
 Q - Na2S2O3
 R - Na2S2O8
 S - H2SO4
 T - TSP Dodecylsulfate
 U - Acetone
 V - HClAA
 W - pH 4.5
 Z - other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab Archive For _____ Months

Deliverable Requested: Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Empty Kit Relinquished by: Laura Midkiff
 Relinquished by: _____
 Relinquished by: _____

Custody Seals Intact: Yes No
 Custody Seal No.: _____

Method of Shipment: _____
 Received by: _____ Date/Time: 8/8/2018, 1540
 Company: APC
 Relinquished by: _____ Date/Time: _____
 Company: _____
 Relinquished by: _____ Date/Time: _____
 Company: _____

Special Instructions/QC Requirements:
 Cooler, Temperature and Other Requirements: 26.67-26.99 C



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-157681-1
SDG Number: Gadsden Ash Pond 1159

Login Number: 157681

List Number: 1

Creator: Johnson, Jeremy N

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	24.2°C, 23.6°C 26.6°C 27.9 °C IR7
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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-1
 SDG: Gadsden Ash Pond 1159

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
Iowa	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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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: 400-157681-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1159

Client Project/Site: CCR Plant Gadsden

Revision: 1

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

9/17/2018 3:18:27 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

Job ID: 400-157681-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-157681-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-382796: Sample aliquots reduced due to limited sample volume. AY18860 MW-14 (400-157681-1), AY18861 MW-4 (400-157681-2), AY18862 FB-1 (400-157681-3), AY18863 MW-1 (400-157681-4), AY18864 MW-1 DUP (400-157681-5), AY18865 MW-2 (400-157681-6), AY18866 MW-3 (400-157681-7), AY18866 MW-3 (400-157681-7[DU]), AY18867 PZ-1 (400-157681-8), AY18868 MW-5 (400-157681-9), AY18869 MW-6 (400-157681-10), AY18870 MW-10 (400-157681-11), AY18871 FB-2 (400-157681-12), AY18872 MW-7 (400-157681-13), AY18873 MW-8 (400-157681-14), AY18874 MW-8 DUP (400-157681-15), AY18875 MW-9 (400-157681-16), AY18876 MW-11 (400-157681-17), AY18877 MW-12 (400-157681-18) and AY18877 MW-12 (400-157681-18[DU])

Method(s) PrecSep_0: Radium 228 Prep Batch 160-382945: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: AY18878 PZ-6 (400-157681-19), AY18879 PZ-5 (400-157681-20) and AY18880 EB-1 (400-157681-21). 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 160-382945: Sample aliquots reduced due to limited sample volume. AY18878 PZ-6 (400-157681-19), AY18879 PZ-5 (400-157681-20) and AY18880 EB-1 (400-157681-21)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-382774: Sample aliquots reduced due to limited sample volume. AY18860 MW-14 (400-157681-1), AY18861 MW-4 (400-157681-2), AY18862 FB-1 (400-157681-3), AY18863 MW-1 (400-157681-4), AY18864 MW-1 DUP (400-157681-5), AY18865 MW-2 (400-157681-6), AY18866 MW-3 (400-157681-7), AY18866 MW-3 (400-157681-7[DU]), AY18867 PZ-1 (400-157681-8), AY18868 MW-5 (400-157681-9), AY18869 MW-6 (400-157681-10), AY18870 MW-10 (400-157681-11), AY18871 FB-2 (400-157681-12), AY18872 MW-7 (400-157681-13), AY18873 MW-8 (400-157681-14), AY18874 MW-8 DUP (400-157681-15), AY18875 MW-9 (400-157681-16), AY18876 MW-11 (400-157681-17), AY18877 MW-12 (400-157681-18) and AY18877 MW-12 (400-157681-18[DU])

Method(s) PrecSep-21: Radium 226 Prep Batch 160-382926: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: AY18878 PZ-6 (400-157681-19), AY18879 PZ-5 (400-157681-20) and AY18880 EB-1 (400-157681-21). 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 160-382926: Sample aliquots reduced due to limited sample volume. AY18878 PZ-6 (400-157681-19), AY18879 PZ-5 (400-157681-20) and AY18880 EB-1 (400-157681-21)

Revised report: Client would like project name corrected to Gadsden Ash Pond 1159 from Gadsden Ash Pond 1158.

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-157681-1	AY18860 MW-14	Water	08/06/18 15:34	08/13/18 16:10
400-157681-2	AY18861 MW-4	Water	08/06/18 16:37	08/13/18 16:10
400-157681-3	AY18862 FB-1	Water	08/06/18 16:55	08/13/18 16:10
400-157681-4	AY18863 MW-1	Water	08/07/18 08:40	08/13/18 16:10
400-157681-5	AY18864 MW-1 DUP	Water	08/07/18 08:40	08/13/18 16:10
400-157681-6	AY18865 MW-2	Water	08/07/18 10:17	08/13/18 16:10
400-157681-7	AY18866 MW-3	Water	08/07/18 11:07	08/13/18 16:10
400-157681-8	AY18867 PZ-1	Water	08/07/18 12:24	08/13/18 16:10
400-157681-9	AY18868 MW-5	Water	08/07/18 13:29	08/13/18 16:10
400-157681-10	AY18869 MW-6	Water	08/07/18 14:31	08/13/18 16:10
400-157681-11	AY18870 MW-10	Water	08/07/18 15:42	08/13/18 16:10
400-157681-12	AY18871 FB-2	Water	08/07/18 15:55	08/13/18 16:10
400-157681-13	AY18872 MW-7	Water	08/08/18 09:54	08/13/18 16:10
400-157681-14	AY18873 MW-8	Water	08/08/18 10:54	08/13/18 16:10
400-157681-15	AY18874 MW-8 DUP	Water	08/08/18 10:54	08/13/18 16:10
400-157681-16	AY18875 MW-9	Water	08/08/18 12:10	08/13/18 16:10
400-157681-17	AY18876 MW-11	Water	08/08/18 13:50	08/13/18 16:10
400-157681-18	AY18877 MW-12	Water	08/08/18 14:41	08/13/18 16:10
400-157681-19	AY18878 PZ-6	Water	08/08/18 15:49	08/13/18 16:10
400-157681-20	AY18879 PZ-5	Water	08/08/18 16:45	08/13/18 16:10
400-157681-21	AY18880 EB-1	Water	08/08/18 17:15	08/13/18 16:10

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18860 MW-14

Lab Sample ID: 400-157681-1

Date Collected: 08/06/18 15:34

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.470		0.131	0.138	1.00	0.0915	pCi/L	08/16/18 08:38	09/07/18 07:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					08/16/18 08:38	09/07/18 07:44	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.183	U	0.310	0.311	1.00	0.526	pCi/L	08/16/18 09:28	08/21/18 16:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					08/16/18 09:28	08/21/18 16:35	1
Y Carrier	79.6		40 - 110					08/16/18 09:28	08/21/18 16:35	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.654		0.337	0.340	5.00	0.526	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18861 MW-4

Lab Sample ID: 400-157681-2

Date Collected: 08/06/18 16:37

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.557		0.143	0.152	1.00	0.107	pCi/L	08/16/18 08:38	09/07/18 07:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					08/16/18 08:38	09/07/18 07:44	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0648	U	0.293	0.293	1.00	0.517	pCi/L	08/16/18 09:28	08/21/18 16:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					08/16/18 09:28	08/21/18 16:35	1
Y Carrier	75.9		40 - 110					08/16/18 09:28	08/21/18 16:35	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.622		0.326	0.330	5.00	0.517	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18862 FB-1

Lab Sample ID: 400-157681-3

Date Collected: 08/06/18 16:55

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.245		0.101	0.104	1.00	0.0955	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.291	U	0.393	0.394	1.00	0.654	pCi/L	08/16/18 09:28	08/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110					08/16/18 09:28	08/21/18 16:36	1
Y Carrier	78.5		40 - 110					08/16/18 09:28	08/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.536	U	0.406	0.407	5.00	0.654	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18863 MW-1

Lab Sample ID: 400-157681-4

Date Collected: 08/07/18 08:40

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.517		0.142	0.150	1.00	0.109	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.353	U	0.334	0.335	1.00	0.538	pCi/L	08/16/18 09:28	08/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					08/16/18 09:28	08/21/18 16:36	1
Y Carrier	77.0		40 - 110					08/16/18 09:28	08/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.870		0.363	0.367	5.00	0.538	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18864 MW-1 DUP

Lab Sample ID: 400-157681-5

Date Collected: 08/07/18 08:40

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.434		0.128	0.134	1.00	0.101	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.463	U	0.348	0.351	1.00	0.545	pCi/L	08/16/18 09:28	08/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/16/18 09:28	08/21/18 16:36	1
Y Carrier	74.8		40 - 110					08/16/18 09:28	08/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.898		0.371	0.376	5.00	0.545	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18865 MW-2

Lab Sample ID: 400-157681-6

Date Collected: 08/07/18 10:17

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.342		0.122	0.126	1.00	0.120	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.873		0.541	0.547	1.00	0.831	pCi/L	08/16/18 09:28	08/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					08/16/18 09:28	08/21/18 16:36	1
Y Carrier	55.7		40 - 110					08/16/18 09:28	08/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.22		0.555	0.561	5.00	0.831	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18866 MW-3

Lab Sample ID: 400-157681-7

Date Collected: 08/07/18 11:07

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.337		0.117	0.121	1.00	0.103	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.450	U	0.350	0.352	1.00	0.552	pCi/L	08/16/18 09:28	08/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					08/16/18 09:28	08/21/18 16:36	1
Y Carrier	78.9		40 - 110					08/16/18 09:28	08/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.788		0.369	0.372	5.00	0.552	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18867 PZ-1

Lab Sample ID: 400-157681-8

Date Collected: 08/07/18 12:24

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.351		0.119	0.123	1.00	0.114	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0727	U	0.324	0.324	1.00	0.592	pCi/L	08/16/18 09:28	08/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					08/16/18 09:28	08/21/18 16:36	1
Y Carrier	72.5		40 - 110					08/16/18 09:28	08/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.279	U	0.345	0.347	5.00	0.592	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18868 MW-5

Lab Sample ID: 400-157681-9

Date Collected: 08/07/18 13:29

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.459		0.130	0.136	1.00	0.101	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.636	U	0.436	0.440	1.00	0.685	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	74.8		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.09		0.455	0.461	5.00	0.685	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18869 MW-6

Lab Sample ID: 400-157681-10

Date Collected: 08/07/18 14:31

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.378		0.123	0.128	1.00	0.103	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0611	U	0.386	0.386	1.00	0.675	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	77.8		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.439	U	0.405	0.407	5.00	0.675	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18870 MW-10

Lab Sample ID: 400-157681-11

Date Collected: 08/07/18 15:42

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.418		0.129	0.135	1.00	0.115	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0767	U	0.401	0.401	1.00	0.698	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	73.6		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.495	U	0.421	0.423	5.00	0.698	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18871 FB-2

Lab Sample ID: 400-157681-12

Date Collected: 08/07/18 15:55

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.220		0.103	0.105	1.00	0.116	pCi/L	08/16/18 08:38	09/07/18 07:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/16/18 08:38	09/07/18 07:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.161	U	0.358	0.358	1.00	0.612	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	76.3		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.381	U	0.373	0.373	5.00	0.612	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18872 MW-7

Lab Sample ID: 400-157681-13

Date Collected: 08/08/18 09:54

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.206		0.0923	0.0941	1.00	0.0969	pCi/L	08/16/18 08:38	09/07/18 07:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/16/18 08:38	09/07/18 07:46	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.158	U	0.359	0.359	1.00	0.614	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	77.8		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.364	U	0.371	0.371	5.00	0.614	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18873 MW-8

Lab Sample ID: 400-157681-14

Date Collected: 08/08/18 10:54

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.365		0.118	0.122	1.00	0.101	pCi/L	08/16/18 08:38	09/07/18 07:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/16/18 08:38	09/07/18 07:46	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.121	U	0.322	0.322	1.00	0.556	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	80.7		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.486	U	0.343	0.344	5.00	0.556	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18874 MW-8 DUP

Lab Sample ID: 400-157681-15

Date Collected: 08/08/18 10:54

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.326		0.109	0.113	1.00	0.0782	pCi/L	08/16/18 08:38	09/07/18 07:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					08/16/18 08:38	09/07/18 07:46	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.204	U	0.293	0.293	1.00	0.566	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	74.8		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.123	U	0.313	0.314	5.00	0.566	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18875 MW-9

Lab Sample ID: 400-157681-16

Date Collected: 08/08/18 12:10

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.332		0.115	0.119	1.00	0.101	pCi/L	08/16/18 08:38	09/07/18 07:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					08/16/18 08:38	09/07/18 07:46	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.324	U	0.337	0.339	1.00	0.549	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	72.9		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.656		0.356	0.359	5.00	0.549	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18876 MW-11

Lab Sample ID: 400-157681-17

Date Collected: 08/08/18 13:50

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.605		0.144	0.154	1.00	0.101	pCi/L	08/16/18 08:38	09/07/18 07:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					08/16/18 08:38	09/07/18 07:46	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.675		0.375	0.380	1.00	0.566	pCi/L	08/16/18 09:28	08/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					08/16/18 09:28	08/21/18 16:37	1
Y Carrier	77.0		40 - 110					08/16/18 09:28	08/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.28		0.402	0.410	5.00	0.566	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18877 MW-12

Lab Sample ID: 400-157681-18

Date Collected: 08/08/18 14:41

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.487		0.134	0.141	1.00	0.101	pCi/L	08/16/18 08:38	09/07/18 07:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					08/16/18 08:38	09/07/18 07:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.331	U	0.322	0.324	1.00	0.522	pCi/L	08/16/18 09:28	08/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					08/16/18 09:28	08/21/18 16:38	1
Y Carrier	79.6		40 - 110					08/16/18 09:28	08/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.817		0.349	0.353	5.00	0.522	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18878 PZ-6

Lab Sample ID: 400-157681-19

Date Collected: 08/08/18 15:49

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.345		0.115	0.119	1.00	0.0965	pCi/L	08/16/18 12:56	09/07/18 05:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					08/16/18 12:56	09/07/18 05:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.151	U	0.259	0.259	1.00	0.439	pCi/L	08/16/18 13:53	08/21/18 08:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					08/16/18 13:53	08/21/18 08:51	1
Y Carrier	91.6		40 - 110					08/16/18 13:53	08/21/18 08:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.496		0.283	0.285	5.00	0.439	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18879 PZ-5

Lab Sample ID: 400-157681-20

Date Collected: 08/08/18 16:45

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.266		0.101	0.104	1.00	0.0950	pCi/L	08/16/18 12:56	09/07/18 05:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					08/16/18 12:56	09/07/18 05:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.496		0.278	0.282	1.00	0.414	pCi/L	08/16/18 13:53	08/21/18 08:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					08/16/18 13:53	08/21/18 08:52	1
Y Carrier	92.0		40 - 110					08/16/18 13:53	08/21/18 08:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.763		0.296	0.301	5.00	0.414	pCi/L		09/11/18 02:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18880 EB-1

Lab Sample ID: 400-157681-21

Date Collected: 08/08/18 17:15

Matrix: Water

Date Received: 08/13/18 16:10

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.254		0.103	0.105	1.00	0.100	pCi/L	08/16/18 12:56	09/07/18 05:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					08/16/18 12:56	09/07/18 05:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.312	U	0.246	0.248	1.00	0.386	pCi/L	08/16/18 13:53	08/21/18 08:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					08/16/18 13:53	08/21/18 08:52	1
Y Carrier	95.7		40 - 110					08/16/18 13:53	08/21/18 08:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.566		0.267	0.269	5.00	0.386	pCi/L		09/11/18 02:43	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18860 MW-14

Lab Sample ID: 400-157681-1

Date Collected: 08/06/18 15:34

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:44	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:35	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18861 MW-4

Lab Sample ID: 400-157681-2

Date Collected: 08/06/18 16:37

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:44	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:35	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18862 FB-1

Lab Sample ID: 400-157681-3

Date Collected: 08/06/18 16:55

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18863 MW-1

Lab Sample ID: 400-157681-4

Date Collected: 08/07/18 08:40

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18864 MW-1 DUP

Lab Sample ID: 400-157681-5

Date Collected: 08/07/18 08:40

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18865 MW-2

Lab Sample ID: 400-157681-6

Date Collected: 08/07/18 10:17

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18866 MW-3

Lab Sample ID: 400-157681-7

Date Collected: 08/07/18 11:07

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18867 PZ-1

Lab Sample ID: 400-157681-8

Date Collected: 08/07/18 12:24

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:36	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18868 MW-5

Lab Sample ID: 400-157681-9

Date Collected: 08/07/18 13:29

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18869 MW-6

Lab Sample ID: 400-157681-10

Date Collected: 08/07/18 14:31

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18870 MW-10

Lab Sample ID: 400-157681-11

Date Collected: 08/07/18 15:42

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18871 FB-2

Lab Sample ID: 400-157681-12

Date Collected: 08/07/18 15:55

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387769	09/07/18 07:45	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18872 MW-7

Lab Sample ID: 400-157681-13

Date Collected: 08/08/18 09:54

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 07:46	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18873 MW-8

Lab Sample ID: 400-157681-14

Date Collected: 08/08/18 10:54

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 07:46	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18874 MW-8 DUP

Lab Sample ID: 400-157681-15

Date Collected: 08/08/18 10:54

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 07:46	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18875 MW-9

Lab Sample ID: 400-157681-16

Date Collected: 08/08/18 12:10

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 07:46	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18876 MW-11

Lab Sample ID: 400-157681-17

Date Collected: 08/08/18 13:50

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 07:46	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:37	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18877 MW-12

Lab Sample ID: 400-157681-18

Date Collected: 08/08/18 14:41

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382774	08/16/18 08:38	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 07:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382796	08/16/18 09:28	JLC	TAL SL
Total/NA	Analysis	9320		1	384187	08/21/18 16:38	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18878 PZ-6

Lab Sample ID: 400-157681-19

Date Collected: 08/08/18 15:49

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382926	08/16/18 12:56	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 05:43	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382945	08/16/18 13:53	JLC	TAL SL
Total/NA	Analysis	9320		1	384190	08/21/18 08:51	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Client Sample ID: AY18879 PZ-5

Lab Sample ID: 400-157681-20

Date Collected: 08/08/18 16:45

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382926	08/16/18 12:56	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 05:43	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382945	08/16/18 13:53	JLC	TAL SL
Total/NA	Analysis	9320		1	384190	08/21/18 08:52	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

Client Sample ID: AY18880 EB-1

Lab Sample ID: 400-157681-21

Date Collected: 08/08/18 17:15

Matrix: Water

Date Received: 08/13/18 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			382926	08/16/18 12:56	JLC	TAL SL
Total/NA	Analysis	9315		1	387770	09/07/18 05:43	KLS	TAL SL
Total/NA	Prep	PrecSep_0			382945	08/16/18 13:53	JLC	TAL SL
Total/NA	Analysis	9320		1	384190	08/21/18 08:52	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	388346	09/11/18 02:43	MAR	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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Rad

Prep Batch: 382774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-1	AY18860 MW-14	Total/NA	Water	PrecSep-21	
400-157681-2	AY18861 MW-4	Total/NA	Water	PrecSep-21	
400-157681-3	AY18862 FB-1	Total/NA	Water	PrecSep-21	
400-157681-4	AY18863 MW-1	Total/NA	Water	PrecSep-21	
400-157681-5	AY18864 MW-1 DUP	Total/NA	Water	PrecSep-21	
400-157681-6	AY18865 MW-2	Total/NA	Water	PrecSep-21	
400-157681-7	AY18866 MW-3	Total/NA	Water	PrecSep-21	
400-157681-8	AY18867 PZ-1	Total/NA	Water	PrecSep-21	
400-157681-9	AY18868 MW-5	Total/NA	Water	PrecSep-21	
400-157681-10	AY18869 MW-6	Total/NA	Water	PrecSep-21	
400-157681-11	AY18870 MW-10	Total/NA	Water	PrecSep-21	
400-157681-12	AY18871 FB-2	Total/NA	Water	PrecSep-21	
400-157681-13	AY18872 MW-7	Total/NA	Water	PrecSep-21	
400-157681-14	AY18873 MW-8	Total/NA	Water	PrecSep-21	
400-157681-15	AY18874 MW-8 DUP	Total/NA	Water	PrecSep-21	
400-157681-16	AY18875 MW-9	Total/NA	Water	PrecSep-21	
400-157681-17	AY18876 MW-11	Total/NA	Water	PrecSep-21	
400-157681-18	AY18877 MW-12	Total/NA	Water	PrecSep-21	
MB 160-382774/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-382774/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-157681-7 DU	AY18866 MW-3	Total/NA	Water	PrecSep-21	
400-157681-18 DU	AY18877 MW-12	Total/NA	Water	PrecSep-21	

Prep Batch: 382796

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-1	AY18860 MW-14	Total/NA	Water	PrecSep_0	
400-157681-2	AY18861 MW-4	Total/NA	Water	PrecSep_0	
400-157681-3	AY18862 FB-1	Total/NA	Water	PrecSep_0	
400-157681-4	AY18863 MW-1	Total/NA	Water	PrecSep_0	
400-157681-5	AY18864 MW-1 DUP	Total/NA	Water	PrecSep_0	
400-157681-6	AY18865 MW-2	Total/NA	Water	PrecSep_0	
400-157681-7	AY18866 MW-3	Total/NA	Water	PrecSep_0	
400-157681-8	AY18867 PZ-1	Total/NA	Water	PrecSep_0	
400-157681-9	AY18868 MW-5	Total/NA	Water	PrecSep_0	
400-157681-10	AY18869 MW-6	Total/NA	Water	PrecSep_0	
400-157681-11	AY18870 MW-10	Total/NA	Water	PrecSep_0	
400-157681-12	AY18871 FB-2	Total/NA	Water	PrecSep_0	
400-157681-13	AY18872 MW-7	Total/NA	Water	PrecSep_0	
400-157681-14	AY18873 MW-8	Total/NA	Water	PrecSep_0	
400-157681-15	AY18874 MW-8 DUP	Total/NA	Water	PrecSep_0	
400-157681-16	AY18875 MW-9	Total/NA	Water	PrecSep_0	
400-157681-17	AY18876 MW-11	Total/NA	Water	PrecSep_0	
400-157681-18	AY18877 MW-12	Total/NA	Water	PrecSep_0	
MB 160-382796/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-382796/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-157681-7 DU	AY18866 MW-3	Total/NA	Water	PrecSep_0	
400-157681-18 DU	AY18877 MW-12	Total/NA	Water	PrecSep_0	

Prep Batch: 382926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-19	AY18878 PZ-6	Total/NA	Water	PrecSep-21	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

Rad (Continued)

Prep Batch: 382926 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-20	AY18879 PZ-5	Total/NA	Water	PrecSep-21	
400-157681-21	AY18880 EB-1	Total/NA	Water	PrecSep-21	
MB 160-382926/20-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-382926/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-382926/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 382945

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-157681-19	AY18878 PZ-6	Total/NA	Water	PrecSep_0	
400-157681-20	AY18879 PZ-5	Total/NA	Water	PrecSep_0	
400-157681-21	AY18880 EB-1	Total/NA	Water	PrecSep_0	
MB 160-382945/20-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-382945/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-382945/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-382774/22-A
Matrix: Water
Analysis Batch: 387770

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 382774

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.2748		0.104	0.107	1.00	0.0980	pCi/L	08/16/18 08:38	09/07/18 07:47	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
	95.6				08/16/18 08:38	09/07/18 07:47	1			

Lab Sample ID: LCS 160-382774/1-A
Matrix: Water
Analysis Batch: 387769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 382774

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	15.1	14.28		1.47	1.00	0.0914	pCi/L	94	68 - 137
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	40 - 110						
	94.4				08/16/18 08:38	09/07/18 07:47	1		

Lab Sample ID: 400-157681-7 DU
Matrix: Water
Analysis Batch: 387769

Client Sample ID: AY18866 MW-3
Prep Type: Total/NA
Prep Batch: 382774

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					Limit
Radium-226	0.337		0.3705		0.123	1.00	0.0959	pCi/L	0.14	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
	98.5				08/16/18 08:38	09/07/18 07:47	1			

Lab Sample ID: 400-157681-18 DU
Matrix: Water
Analysis Batch: 387770

Client Sample ID: AY18877 MW-12
Prep Type: Total/NA
Prep Batch: 382774

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					Limit
Radium-226	0.487		0.4624		0.138	1.00	0.0968	pCi/L	0.09	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	40 - 110							
	92.6				08/16/18 12:56	09/07/18 05:49	1			

Lab Sample ID: MB 160-382926/20-A
Matrix: Water
Analysis Batch: 387772

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 382926

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.1726		0.0799	0.0814	1.00	0.0894	pCi/L	08/16/18 12:56	09/07/18 05:49	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

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

Lab Sample ID: MB 160-382926/20-A
Matrix: Water
Analysis Batch: 387772

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 382926

Carrier	<i>MB</i> %Yield	<i>MB</i> Qualifier	Limits
Ba Carrier	95.3		40 - 110

Prepared	Analyzed	Dil Fac
08/16/18 12:56	09/07/18 05:49	1

Lab Sample ID: LCS 160-382926/1-A
Matrix: Water
Analysis Batch: 387771

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 382926

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	10.25		1.05	1.00	0.0697	pCi/L	90	68 - 137

Carrier	<i>LCS</i> %Yield	<i>LCS</i> Qualifier	Limits
Ba Carrier	99.4		40 - 110

Lab Sample ID: LCSD 160-382926/2-A
Matrix: Water
Analysis Batch: 387771

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 382926

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.4	11.11		1.13	1.00	0.0750	pCi/L	98	68 - 137	0.39	1

Carrier	<i>LCSD</i> %Yield	<i>LCSD</i> Qualifier	Limits
Ba Carrier	95.9		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-382796/22-A
Matrix: Water
Analysis Batch: 384187

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 382796

Analyte	<i>MB</i> Result	<i>MB</i> Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.003152	U	0.303	0.303	1.00	0.546	pCi/L	08/16/18 09:28	08/21/18 16:38	1

Carrier	<i>MB</i> %Yield	<i>MB</i> Qualifier	Limits
Ba Carrier	95.6		40 - 110
Y Carrier	77.4		40 - 110

Prepared	Analyzed	Dil Fac
08/16/18 09:28	08/21/18 16:38	1
08/16/18 09:28	08/21/18 16:38	1

Lab Sample ID: LCS 160-382796/1-A
Matrix: Water
Analysis Batch: 384187

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 382796

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	14.8	18.15		2.09	1.00	0.696	pCi/L	123	56 - 140

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

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

Lab Sample ID: LCS 160-382796/1-A
Matrix: Water
Analysis Batch: 384187

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 382796

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	94.4		40 - 110
Y Carrier	62.1		40 - 110

Lab Sample ID: 400-157681-7 DU
Matrix: Water
Analysis Batch: 384187

Client Sample ID: AY18866 MW-3
Prep Type: Total/NA
Prep Batch: 382796

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.450	U	0.07383	U	0.302	1.00	0.529	pCi/L	0.58	1

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	98.5		40 - 110
Y Carrier	79.6		40 - 110

Lab Sample ID: 400-157681-18 DU
Matrix: Water
Analysis Batch: 384187

Client Sample ID: AY18877 MW-12
Prep Type: Total/NA
Prep Batch: 382796

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.331	U	0.2834	U	0.330	1.00	0.542	pCi/L	0.07	1

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	92.6		40 - 110
Y Carrier	80.4		40 - 110

Lab Sample ID: MB 160-382945/20-A
Matrix: Water
Analysis Batch: 384188

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 382945

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.4949		0.295	0.299	1.00	0.451	pCi/L	08/16/18 13:53	08/21/18 08:53	1

	MB	MB	Limits	Prepared	Analyzed	Dil Fac
Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110	08/16/18 13:53	08/21/18 08:53	1
Y Carrier	74.0		40 - 110	08/16/18 13:53	08/21/18 08:53	1

Lab Sample ID: LCS 160-382945/1-A
Matrix: Water
Analysis Batch: 384190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 382945

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec Limits
Radium-228	11.1	11.61		1.27	1.00	0.334	pCi/L	105	56 - 140

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

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

Lab Sample ID: LCS 160-382945/1-A
Matrix: Water
Analysis Batch: 384190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 382945

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	99.4		40 - 110
Y Carrier	87.1		40 - 110

Lab Sample ID: LCSD 160-382945/2-A
Matrix: Water
Analysis Batch: 384190

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 382945

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	11.1	11.86		1.30	1.00	0.323	pCi/L	107	56 - 140	0.09	1

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	95.9		40 - 110
Y Carrier	90.5		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-157681-7 DU
Matrix: Water
Analysis Batch: 388346

Client Sample ID: AY18866 MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.788		0.4444	U	0.326	5.00	0.529	pCi/L	0.49	

Lab Sample ID: 400-157681-18 DU
Matrix: Water
Analysis Batch: 388346

Client Sample ID: AY18877 MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.817		0.7458		0.358	5.00	0.542	pCi/L	0.10	

Chain of Custody Record



Client Information
 Sampler: Ben Roitshchadl
 Lab Pk: Whitlire, Cheryenne R
 Client Contact: Laura Midkiff
 Phone: cheryenne.whitlire@testamericainc.com
 E-Mail: cheryenne.whitlire@testamericainc.com

Company: Alabama Power General Test Laboratory
 Address: 744 County Rd 87 GSC #8
 City: Callera
 State, Zip: AL 35040
 Phone: 205-664-6197(Tel)
 Email: lbmidkiff@southermco.com
 Project Name: CCR
 Site: Gadsden Ash Pond 1158

Due Date Requested:
 TAT Requested (days): Routine
 PO #: 40007143
 IWO #: 40007143
 Project #: 40007143
 SSO#: 40007143

Analysis Requested
 Perform M/S/MSD (Yes or No) N
 Field Filtered Sample (Yes or No) N
 9315_R4220_9320_R4220_R4220R4220_CFFC
 5M 4500 SQA_E
 5M 4500 Cl_E
 5M 4500 F_C
 400-157881 COC

Sample Identification

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Invert, Suspend, Dissolved, or Unknown, Acid)	Preservation Code	Field Filtered Sample (Yes or No)	Perform M/S/MSD (Yes or No)	5M 4500 SQA_E	5M 4500 Cl_E	5M 4500 F_C	Total Number	Special Instructions/Note
AY18878	8/8/18	1549	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	X	2	PZ-6
AY18879	8/8/18	1645	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	X	2	PZ-5
AY18880	8/8/18	1715	G	Water		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	X	X	X	2	EB-1 (Equipment Blank)

Preservation Codes:
 A - HCL
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NaHSO4
 F - MeOH
 G - Amchlor
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDA
 Other:

Special Instructions/Note:
 PZ-6
 PZ-5
 EB-1 (Equipment Blank)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab Archive For _____ Months

Deliverable Requested: Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Empty Kit Relinquished by: Laura Midkiff
 Date/Time: 8/8/2018; 1540
 Company: APC

Relinquished by:
 Date/Time:
 Company:

Relinquished by:
 Date/Time:
 Company:

Custody Seals Intact: Yes No
 Custody Seal No.: 26.67-2.10.90/115



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-157681-2
SDG Number: Gadsden Ash Pond 1159

Login Number: 157681

List Number: 1

Creator: Johnson, Jeremy N

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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.	N/A	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	24.2°C, 23.6°C 26.6°C 27.9 °C IR7
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	

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-157681-2
SDG Number: Gadsden Ash Pond 1159

Login Number: 157681

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 08/15/18 11:45 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	21.0
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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
 SDG: Gadsden Ash Pond 1159

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
Iowa	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 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-157681-2
SDG: Gadsden Ash Pond 1159

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 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1162
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks & Greg Dyer
Released By : Laura Midkiff
lbrmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:

Laura Midkiff

Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbrmidkif@southernco.com, c=US
Date: 2018.10.16 14:29:54 -05'00'

Supervision:

T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.10.16 15:14:57 -05'00'



Metals ICP

Gadsden Ash Pond

WMWGADAP_1162

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY21277	627945	WMWGADAP_1162
AY21278	627945	WMWGADAP_1162
AY21279	627945	WMWGADAP_1162
AY21280	627945	WMWGADAP_1162
AY21281	627945	WMWGADAP_1162
AY21282	627945	WMWGADAP_1162
AY21283	627945	WMWGADAP_1162

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.



- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects.
 8. The raw data results include results corrected for dilution.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1162

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY21277	628047	WMWGADAP_1162
AY21278	628047	WMWGADAP_1162
AY21279	628047	WMWGADAP_1162
AY21280	628047	WMWGADAP_1162
AY21281	628047	WMWGADAP_1162
AY21282	628047	WMWGADAP_1162
AY21283	628047	WMWGADAP_1162

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1162

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY21277	627788	WMWGADAP_1162
AY21278	627788	WMWGADAP_1162
AY21279	627788	WMWGADAP_1162
AY21280	627788	WMWGADAP_1162
AY21281	627788	WMWGADAP_1162
AY21282	627788	WMWGADAP_1162
AY21283	627788	WMWGADAP_1162

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1162

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY21277	627864	WMWGADAP_1162
AY21278	627864	WMWGADAP_1162
AY21279	627864	WMWGADAP_1162
AY21280	627864	WMWGADAP_1162
AY21281	628013	WMWGADAP_1162
AY21282	627864	WMWGADAP_1162
AY21283	627864	WMWGADAP_1162

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- All samples were between 2.5mg and 200mg residue except for AY21279 and AY21281, which were below the 2.5mg requirement. Max volume of 150mL filtered.
- AY21281 was re ran in batch 628013 due to the beaker breaking in between weighings. Sample was still within hold time.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If reanalysis is required for reasons such as beaker breakage in original run, any additional QC data from the reanalysis may need to be obtained from the laboratory. Any qualifications applied to original analyses or re-analyses are based upon QC data available at the time of review.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY21277

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	0.116	mg/L
* Beryllium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/12/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.1	0.5	43.6	mg/L
* Cadmium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	9/12/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/11/2018	SM 2540C		1		25	154	mg/L
Filter Completion Date	CRB	9/7/2018	SM 2540C		1			09/07/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY21277

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AY21283	Barium, Total	mg/L	0.000000319	0.0044	0.10	0.119	0.122	0.100	0.085 to 0.115	91.4	70 to 130	2.42	20
AY21283	Calcium, Total	mg/L	0.00236	0.22	5.00	16.7	16.8	4.94	4.25 to 5.75	91.5	70 to 130	1.05	20
AY21283	Antimony, Total	mg/L	0.0000504	0.00176	0.10	0.0901	0.0907	0.0976	0.085 to 0.115	90.1	70 to 130	0.666	20
AY21283	Selenium, Total	mg/L	0.0000829	0.0044	0.10	0.0883	0.0958	0.103	0.085 to 0.115	88.3	70 to 130	8.07	20
AY21283	Boron, Total	mg/L	0.000554	0.044	1.00	0.941	0.954	0.956	0.85 to 1.15	94.1	70 to 130	1.40	20
AY21283	Lithium, Total	mg/L	-0.0000306	0.022	0.20	0.192	0.194	0.188	0.17 to 0.23	96.2	70 to 130	0.928	20
AY21283	Thallium, Total	mg/L	-0.0000115	0.00044	0.10	0.0918	0.0919	0.0997	0.085 to 0.115	91.8	70 to 130	0.0987	20
AY21283	Cobalt, Total	mg/L	0.000000747	0.0044	0.10	0.115	0.118	0.0904	0.085 to 0.115	85.0	70 to 130	2.41	20
AY21283	Molybdenum, Total	mg/L	0.00000979	0.0044	0.10	0.0862	0.0883	0.0922	0.085 to 0.115	86.2	70 to 130	2.40	20
AY21283	Beryllium, Total	mg/L	0.0000328	0.00132	0.10	0.0997	0.0981	0.103	0.085 to 0.115	98.5	70 to 130	1.59	20
AY21283	Chromium, Total	mg/L	0.0000621	0.0044	0.10	0.0922	0.0934	0.0976	0.085 to 0.115	92.2	70 to 130	1.31	20
AY21283	Mercury, Total by CVAA	mg/L	0.00005	0.0005	0.004	0.00422	0.00434	0.00388	0.0034 to 0.0046	95.5	70 to 130	2.80	20
AY21283	Arsenic, Total	mg/L	0.0000108	0.0022	0.10	0.0951	0.0971	0.103	0.085 to 0.115	95.1	70 to 130	2.04	20
AY21283	Cadmium, Total	mg/L	0.00000596	0.00066	0.10	0.0959	0.0985	0.0988	0.085 to 0.115	95.4	70 to 130	2.66	20
AY21283	Lead, Total	mg/L	-0.000000677	0.0022	0.10	0.0948	0.0949	0.102	0.085 to 0.115	93.5	70 to 130	0.132	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY21277

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec			
				Limit			Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AY21283	Solids, Dissolved	mg/L	0.0000	25			144	53.0	40 to 60			2.13	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY21278

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	0.0291	mg/L
* Beryllium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/12/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.1	0.5	3.78	mg/L
* Cadmium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	9/12/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/11/2018	SM 2540C		1		25	67.3	mg/L
Filter Completion Date	CRB	9/7/2018	SM 2540C		1			09/07/2018	Date

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Laboratory certification ID: E571114

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY21278

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY21283	Barium, Total	mg/L	0.000000319	0.0044	0.10	0.119	0.122	0.100	0.085 to 0.115	91.4	70 to 130	2.42	20	
AY21283	Calcium, Total	mg/L	0.00236	0.22	5.00	16.7	16.8	4.94	4.25 to 5.75	91.5	70 to 130	1.05	20	
AY21283	Cobalt, Total	mg/L	0.000000747	0.0044	0.10	0.115	0.118	0.0904	0.085 to 0.115	85.0	70 to 130	2.41	20	
AY21283	Molybdenum, Total	mg/L	0.00000979	0.0044	0.10	0.0862	0.0883	0.0922	0.085 to 0.115	86.2	70 to 130	2.40	20	
AY21283	Arsenic, Total	mg/L	0.0000108	0.0022	0.10	0.0951	0.0971	0.103	0.085 to 0.115	95.1	70 to 130	2.04	20	
AY21283	Cadmium, Total	mg/L	0.00000596	0.00066	0.10	0.0959	0.0985	0.0988	0.085 to 0.115	95.4	70 to 130	2.66	20	
AY21283	Lead, Total	mg/L	-0.000000677	0.0022	0.10	0.0948	0.0949	0.102	0.085 to 0.115	93.5	70 to 130	0.132	20	
AY21283	Antimony, Total	mg/L	0.0000504	0.00176	0.10	0.0901	0.0907	0.0976	0.085 to 0.115	90.1	70 to 130	0.666	20	
AY21283	Selenium, Total	mg/L	0.0000829	0.0044	0.10	0.0883	0.0958	0.103	0.085 to 0.115	88.3	70 to 130	8.07	20	
AY21283	Boron, Total	mg/L	0.000554	0.044	1.00	0.941	0.954	0.956	0.85 to 1.15	94.1	70 to 130	1.40	20	
AY21283	Lithium, Total	mg/L	-0.0000306	0.022	0.20	0.192	0.194	0.188	0.17 to 0.23	96.2	70 to 130	0.928	20	
AY21283	Thallium, Total	mg/L	-0.0000115	0.00044	0.10	0.0918	0.0919	0.0997	0.085 to 0.115	91.8	70 to 130	0.0987	20	
AY21283	Beryllium, Total	mg/L	0.0000328	0.00132	0.10	0.0997	0.0981	0.103	0.085 to 0.115	98.5	70 to 130	1.59	20	
AY21283	Chromium, Total	mg/L	0.0000621	0.0044	0.10	0.0922	0.0934	0.0976	0.085 to 0.115	92.2	70 to 130	1.31	20	
AY21283	Mercury, Total by CVAA	mg/L	0.00005	0.0005	0.004	0.00422	0.00434	0.00388	0.0034 to 0.0046	95.5	70 to 130	2.80	20	

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY21278

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY21283	Solids, Dissolved	mg/L	0.0000	25			144	53.0	40 to 60		2.13	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY21279

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/12/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	9/12/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/11/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	9/7/2018	SM 2540C		1			09/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY21279

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY21283	Barium, Total	mg/L	0.000000319	0.0044	0.10	0.119	0.122	0.100	0.085 to 0.115	91.4	70 to 130	2.42	20	
AY21283	Calcium, Total	mg/L	0.00236	0.22	5.00	16.7	16.8	4.94	4.25 to 5.75	91.5	70 to 130	1.05	20	
AY21283	Cobalt, Total	mg/L	0.000000747	0.0044	0.10	0.115	0.118	0.0904	0.085 to 0.115	85.0	70 to 130	2.41	20	
AY21283	Molybdenum, Total	mg/L	0.00000979	0.0044	0.10	0.0862	0.0883	0.0922	0.085 to 0.115	86.2	70 to 130	2.40	20	
AY21283	Boron, Total	mg/L	0.000554	0.044	1.00	0.941	0.954	0.956	0.85 to 1.15	94.1	70 to 130	1.40	20	
AY21283	Lithium, Total	mg/L	-0.0000306	0.022	0.20	0.192	0.194	0.188	0.17 to 0.23	96.2	70 to 130	0.928	20	
AY21283	Thallium, Total	mg/L	-0.0000115	0.00044	0.10	0.0918	0.0919	0.0997	0.085 to 0.115	91.8	70 to 130	0.0987	20	
AY21283	Beryllium, Total	mg/L	0.0000328	0.00132	0.10	0.0997	0.0981	0.103	0.085 to 0.115	98.5	70 to 130	1.59	20	
AY21283	Chromium, Total	mg/L	0.0000621	0.0044	0.10	0.0922	0.0934	0.0976	0.085 to 0.115	92.2	70 to 130	1.31	20	
AY21283	Mercury, Total by CVAA	mg/L	0.00005	0.0005	0.004	0.00422	0.00434	0.00388	0.0034 to 0.0046	95.5	70 to 130	2.80	20	
AY21283	Arsenic, Total	mg/L	0.0000108	0.0022	0.10	0.0951	0.0971	0.103	0.085 to 0.115	95.1	70 to 130	2.04	20	
AY21283	Cadmium, Total	mg/L	0.00000596	0.00066	0.10	0.0959	0.0985	0.0988	0.085 to 0.115	95.4	70 to 130	2.66	20	
AY21283	Lead, Total	mg/L	-0.000000677	0.0022	0.10	0.0948	0.0949	0.102	0.085 to 0.115	93.5	70 to 130	0.132	20	
AY21283	Antimony, Total	mg/L	0.0000504	0.00176	0.10	0.0901	0.0907	0.0976	0.085 to 0.115	90.1	70 to 130	0.666	20	
AY21283	Selenium, Total	mg/L	0.0000829	0.0044	0.10	0.0883	0.0958	0.103	0.085 to 0.115	88.3	70 to 130	8.07	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY21279

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY21283	Solids, Dissolved	mg/L	0.0000	25			144	53.0	40 to 60		2.13	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

CC:

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY21280

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	0.123	mg/L
* Beryllium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/12/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.1	0.5	3.38	mg/L
* Cadmium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.005	J 0.00202	mg/L
* Chromium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	9/12/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/11/2018	SM 2540C		1		25	47.3	mg/L
Filter Completion Date	CRB	9/7/2018	SM 2540C		1			09/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY21280

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY21283	Barium, Total	mg/L	0.000000319	0.0044	0.10	0.119	0.122	0.100	0.085 to 0.115	91.4	70 to 130	2.42	20	
AY21283	Calcium, Total	mg/L	0.00236	0.22	5.00	16.7	16.8	4.94	4.25 to 5.75	91.5	70 to 130	1.05	20	
AY21283	Cobalt, Total	mg/L	0.000000747	0.0044	0.10	0.115	0.118	0.0904	0.085 to 0.115	85.0	70 to 130	2.41	20	
AY21283	Molybdenum, Total	mg/L	0.00000979	0.0044	0.10	0.0862	0.0883	0.0922	0.085 to 0.115	86.2	70 to 130	2.40	20	
AY21283	Boron, Total	mg/L	0.000554	0.044	1.00	0.941	0.954	0.956	0.85 to 1.15	94.1	70 to 130	1.40	20	
AY21283	Lithium, Total	mg/L	-0.0000306	0.022	0.20	0.192	0.194	0.188	0.17 to 0.23	96.2	70 to 130	0.928	20	
AY21283	Thallium, Total	mg/L	-0.0000115	0.00044	0.10	0.0918	0.0919	0.0997	0.085 to 0.115	91.8	70 to 130	0.0987	20	
AY21283	Beryllium, Total	mg/L	0.0000328	0.00132	0.10	0.0997	0.0981	0.103	0.085 to 0.115	98.5	70 to 130	1.59	20	
AY21283	Chromium, Total	mg/L	0.0000621	0.0044	0.10	0.0922	0.0934	0.0976	0.085 to 0.115	92.2	70 to 130	1.31	20	
AY21283	Mercury, Total by CVAA	mg/L	0.00005	0.0005	0.004	0.00422	0.00434	0.00388	0.0034 to 0.0046	95.5	70 to 130	2.80	20	
AY21283	Antimony, Total	mg/L	0.0000504	0.00176	0.10	0.0901	0.0907	0.0976	0.085 to 0.115	90.1	70 to 130	0.666	20	
AY21283	Selenium, Total	mg/L	0.0000829	0.0044	0.10	0.0883	0.0958	0.103	0.085 to 0.115	88.3	70 to 130	8.07	20	
AY21283	Arsenic, Total	mg/L	0.0000108	0.0022	0.10	0.0951	0.0971	0.103	0.085 to 0.115	95.1	70 to 130	2.04	20	
AY21283	Cadmium, Total	mg/L	0.00000596	0.00066	0.10	0.0959	0.0985	0.0988	0.085 to 0.115	95.4	70 to 130	2.66	20	
AY21283	Lead, Total	mg/L	-0.000000677	0.0022	0.10	0.0948	0.0949	0.102	0.085 to 0.115	93.5	70 to 130	0.132	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY21280

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec			
				Limit			Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AY21283	Solids, Dissolved	mg/L	0.0000	25			144	53.0	40 to 60			2.13	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY21281

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/12/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	9/12/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/14/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	9/12/2018	SM 2540C		1			09/12/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY21281

Sample	Analysis	Units	MB	MB			MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike	MS				Limit	Rec	Limit	Prec	
AY21283	Calcium, Total	mg/L	0.00236	0.22	5.00	16.7	16.8	4.94	4.25 to 5.75	91.5	70 to 130	1.05	20	
AY21283	Cobalt, Total	mg/L	0.00000747	0.0044	0.10	0.115	0.118	0.0904	0.085 to 0.115	85.0	70 to 130	2.41	20	
AY21283	Molybdenum, Total	mg/L	0.00000979	0.0044	0.10	0.0862	0.0883	0.0922	0.085 to 0.115	86.2	70 to 130	2.40	20	
AY21283	Boron, Total	mg/L	0.000554	0.044	1.00	0.941	0.954	0.956	0.85 to 1.15	94.1	70 to 130	1.40	20	
AY21283	Lithium, Total	mg/L	-0.0000306	0.022	0.20	0.192	0.194	0.188	0.17 to 0.23	96.2	70 to 130	0.928	20	
AY21283	Thallium, Total	mg/L	-0.0000115	0.00044	0.10	0.0918	0.0919	0.0997	0.085 to 0.115	91.8	70 to 130	0.0987	20	
AY21283	Beryllium, Total	mg/L	0.0000328	0.00132	0.10	0.0997	0.0981	0.103	0.085 to 0.115	98.5	70 to 130	1.59	20	
AY21283	Chromium, Total	mg/L	0.0000621	0.0044	0.10	0.0922	0.0934	0.0976	0.085 to 0.115	92.2	70 to 130	1.31	20	
AY21283	Mercury, Total by CVAA	mg/L	0.00005	0.0005	0.004	0.00422	0.00434	0.00388	0.0034 to 0.0046	95.5	70 to 130	2.80	20	
AY21283	Antimony, Total	mg/L	0.0000504	0.00176	0.10	0.0901	0.0907	0.0976	0.085 to 0.115	90.1	70 to 130	0.666	20	
AY21283	Selenium, Total	mg/L	0.0000829	0.0044	0.10	0.0883	0.0958	0.103	0.085 to 0.115	88.3	70 to 130	8.07	20	
AY21283	Arsenic, Total	mg/L	0.0000108	0.0022	0.10	0.0951	0.0971	0.103	0.085 to 0.115	95.1	70 to 130	2.04	20	
AY21283	Cadmium, Total	mg/L	0.00000596	0.00066	0.10	0.0959	0.0985	0.0988	0.085 to 0.115	95.4	70 to 130	2.66	20	
AY21283	Lead, Total	mg/L	-0.000000677	0.0022	0.10	0.0948	0.0949	0.102	0.085 to 0.115	93.5	70 to 130	0.132	20	
AY21283	Barium, Total	mg/L	0.000000319	0.0044	0.10	0.119	0.122	0.100	0.085 to 0.115	91.4	70 to 130	2.42	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY21281

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY21591	Solids, Dissolved	mg/L	-4.00	25			2320	54.0	40 to 60			0.00	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY21282

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	0.0275	mg/L
* Beryllium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0006	0.003	J 0.00106	mg/L
* Boron, Total	RDA	9/12/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.1	0.5	12.1	mg/L
* Cadmium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000479	mg/L
* Antimony, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.005	0.0291	mg/L
* Chromium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	9/12/2018	EPA 245.1		1	0.00025	0.0005	J 0.00037	mg/L
* Lithium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00118	mg/L
* Selenium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/11/2018	SM 2540C		1		25	153	mg/L
Filter Completion Date	CRB	9/7/2018	SM 2540C		1			09/07/2018	Date

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY21282

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY21283	Barium, Total	mg/L	0.000000319	0.0044	0.10	0.119	0.122	0.100	0.085 to 0.115		91.4	70 to 130		2.42	20
AY21283	Calcium, Total	mg/L	0.00236	0.22	5.00	16.7	16.8	4.94	4.25 to 5.75		91.5	70 to 130		1.05	20
AY21283	Cobalt, Total	mg/L	0.000000747	0.0044	0.10	0.115	0.118	0.0904	0.085 to 0.115		85.0	70 to 130		2.41	20
AY21283	Molybdenum, Total	mg/L	0.00000979	0.0044	0.10	0.0862	0.0883	0.0922	0.085 to 0.115		86.2	70 to 130		2.40	20
AY21283	Boron, Total	mg/L	0.000554	0.044	1.00	0.941	0.954	0.956	0.85 to 1.15		94.1	70 to 130		1.40	20
AY21283	Lithium, Total	mg/L	-0.0000306	0.022	0.20	0.192	0.194	0.188	0.17 to 0.23		96.2	70 to 130		0.928	20
AY21283	Thallium, Total	mg/L	-0.0000115	0.00044	0.10	0.0918	0.0919	0.0997	0.085 to 0.115		91.8	70 to 130		0.0987	20
AY21283	Arsenic, Total	mg/L	0.0000108	0.0022	0.10	0.0951	0.0971	0.103	0.085 to 0.115		95.1	70 to 130		2.04	20
AY21283	Cadmium, Total	mg/L	0.00000596	0.00066	0.10	0.0959	0.0985	0.0988	0.085 to 0.115		95.4	70 to 130		2.66	20
AY21283	Lead, Total	mg/L	-0.000000677	0.0022	0.10	0.0948	0.0949	0.102	0.085 to 0.115		93.5	70 to 130		0.132	20
AY21283	Beryllium, Total	mg/L	0.0000328	0.00132	0.10	0.0997	0.0981	0.103	0.085 to 0.115		98.5	70 to 130		1.59	20
AY21283	Chromium, Total	mg/L	0.0000621	0.0044	0.10	0.0922	0.0934	0.0976	0.085 to 0.115		92.2	70 to 130		1.31	20
AY21283	Mercury, Total by CVAA	mg/L	0.00005	0.0005	0.004	0.00422	0.00434	0.00388	0.0034 to 0.0046		95.5	70 to 130		2.80	20
AY21283	Antimony, Total	mg/L	0.0000504	0.00176	0.10	0.0901	0.0907	0.0976	0.085 to 0.115		90.1	70 to 130		0.666	20
AY21283	Selenium, Total	mg/L	0.0000829	0.0044	0.10	0.0883	0.0958	0.103	0.085 to 0.115		88.3	70 to 130		8.07	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY21282

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec			
				Limit			Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AY21283	Solids, Dissolved	mg/L	0.0000	25			144	53.0	40 to 60			2.13	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

CC:

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - MW-14 Dup

Laboratory ID Number: AY21283

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	0.0273	mg/L
* Beryllium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0006	0.003	J 0.00116	mg/L
* Boron, Total	RDA	9/12/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.1	0.5	12.1	mg/L
* Cadmium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000442	mg/L
* Antimony, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.005	0.0301	mg/L
* Chromium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	9/12/2018	EPA 245.1		1	0.00025	0.0005	J 0.00040	mg/L
* Lithium, Total	RDA	9/12/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	9/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00122	mg/L
* Selenium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	9/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/11/2018	SM 2540C		1		25	138	mg/L
Filter Completion Date	CRB	9/7/2018	SM 2540C		1			09/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - MW-14 Dup

Laboratory ID Number: AY21283

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY21283	Barium, Total	mg/L	0.000000319	0.0044	0.10	0.119	0.122	0.100	0.085 to 0.115	91.4	70 to 130	2.42	20	
AY21283	Calcium, Total	mg/L	0.00236	0.22	5.00	16.7	16.8	4.94	4.25 to 5.75	91.5	70 to 130	1.05	20	
AY21283	Cobalt, Total	mg/L	0.000000747	0.0044	0.10	0.115	0.118	0.0904	0.085 to 0.115	85.0	70 to 130	2.41	20	
AY21283	Molybdenum, Total	mg/L	0.00000979	0.0044	0.10	0.0862	0.0883	0.0922	0.085 to 0.115	86.2	70 to 130	2.40	20	
AY21283	Beryllium, Total	mg/L	0.0000328	0.00132	0.10	0.0997	0.0981	0.103	0.085 to 0.115	98.5	70 to 130	1.59	20	
AY21283	Chromium, Total	mg/L	0.0000621	0.0044	0.10	0.0922	0.0934	0.0976	0.085 to 0.115	92.2	70 to 130	1.31	20	
AY21283	Mercury, Total by CVAA	mg/L	0.00005	0.0005	0.004	0.00422	0.00434	0.00388	0.0034 to 0.0046	95.5	70 to 130	2.80	20	
AY21283	Arsenic, Total	mg/L	0.0000108	0.0022	0.10	0.0951	0.0971	0.103	0.085 to 0.115	95.1	70 to 130	2.04	20	
AY21283	Cadmium, Total	mg/L	0.00000596	0.00066	0.10	0.0959	0.0985	0.0988	0.085 to 0.115	95.4	70 to 130	2.66	20	
AY21283	Lead, Total	mg/L	-0.000000677	0.0022	0.10	0.0948	0.0949	0.102	0.085 to 0.115	93.5	70 to 130	0.132	20	
AY21283	Antimony, Total	mg/L	0.0000504	0.00176	0.10	0.0901	0.0907	0.0976	0.085 to 0.115	90.1	70 to 130	0.666	20	
AY21283	Selenium, Total	mg/L	0.0000829	0.0044	0.10	0.0883	0.0958	0.103	0.085 to 0.115	88.3	70 to 130	8.07	20	
AY21283	Boron, Total	mg/L	0.000554	0.044	1.00	0.941	0.954	0.956	0.85 to 1.15	94.1	70 to 130	1.40	20	
AY21283	Lithium, Total	mg/L	-0.0000306	0.022	0.20	0.192	0.194	0.188	0.17 to 0.23	96.2	70 to 130	0.928	20	
AY21283	Thallium, Total	mg/L	-0.0000115	0.00044	0.10	0.0918	0.0919	0.0997	0.085 to 0.115	91.8	70 to 130	0.0987	20	

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



Revised Copy



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 05-Sep-18
 Customer ID:
 Delivery Date: 06-Sep-18

Description: Gadsden Ash Pond - MW-14 Dup

Laboratory ID Number: AY21283

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY21283	Solids, Dissolved	mg/L	0.0000	25			144	53.0	40 to 60		2.13	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Revised Copy: Updating Filter Completion Test Date to match Result. LBM 10/16/18

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information

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: 400-158895-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1162

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

10/10/2018 4:19:52 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.

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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
SDG: Gadsden Ash Pond 1162

Job ID: 400-158895-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-158895-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-388773: The following samples were prepared at a reduced aliquot due to limited sample volume. AY21284 PZ-1 (400-158895-1), AY21284 PZ-1 (400-158895-1[MS]), AY21284 PZ-1 (400-158895-1[MSD]), AY21285 PZ-6 (400-158895-2), AY21286 FB-1 (400-158895-3), AY21287 PZ-5 (400-158895-4), AY21288 EB-1 (400-158895-5), AY21289 MW-14 (400-158895-6) and AY21290 MW-14 DUP (400-158895-7). Sample aliquot 240-100914-2 was also reduced due to discoloration and heavy sediment levels.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-388651: The following samples were prepared at a reduced aliquot due to limited sample volume. AY21284 PZ-1 (400-158895-1), AY21284 PZ-1 (400-158895-1[MS]), AY21284 PZ-1 (400-158895-1[MSD]), AY21285 PZ-6 (400-158895-2), AY21286 FB-1 (400-158895-3), AY21287 PZ-5 (400-158895-4), AY21288 EB-1 (400-158895-5), AY21289 MW-14 (400-158895-6) and AY21290 MW-14 DUP (400-158895-7). Sample aliquot 240-100914-2 was also reduced due to discoloration and heavy sediment levels.



Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
SDG: Gadsden Ash Pond 1162

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
SDG: Gadsden Ash Pond 1162

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-158895-1	AY21284 PZ-1	Water	09/05/18 10:08	09/07/18 09:11
400-158895-2	AY21285 PZ-6	Water	09/05/18 11:09	09/07/18 09:11
400-158895-3	AY21286 FB-1	Water	09/05/18 11:30	09/07/18 09:11
400-158895-4	AY21287 PZ-5	Water	09/05/18 12:18	09/07/18 09:11
400-158895-5	AY21288 EB-1	Water	09/05/18 12:45	09/07/18 09:11
400-158895-6	AY21289 MW-14	Water	09/05/18 14:16	09/07/18 09:11
400-158895-7	AY21290 MW-14 DUP	Water	09/05/18 14:16	09/07/18 09:11

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21284 PZ-1

Lab Sample ID: 400-158895-1

Date Collected: 09/05/18 10:08

Matrix: Water

Date Received: 09/07/18 09:11

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.297		0.112	0.115	1.00	0.105	pCi/L	09/12/18 09:23	10/04/18 04:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					09/12/18 09:23	10/04/18 04:28	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.292	U	0.287	0.288	1.00	0.465	pCi/L	09/12/18 13:54	09/20/18 08:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					09/12/18 13:54	09/20/18 08:59	1
Y Carrier	85.6		40 - 110					09/12/18 13:54	09/20/18 08:59	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.589		0.308	0.310	5.00	0.465	pCi/L		10/05/18 00:01	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21285 PZ-6

Lab Sample ID: 400-158895-2

Date Collected: 09/05/18 11:09

Matrix: Water

Date Received: 09/07/18 09:11

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.292		0.105	0.108	1.00	0.0948	pCi/L	09/12/18 09:23	10/04/18 04:31	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					09/12/18 09:23	10/04/18 04:31	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.328	U	0.278	0.280	1.00	0.443	pCi/L	09/12/18 13:54	09/20/18 08:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					09/12/18 13:54	09/20/18 08:59	1
Y Carrier	85.6		40 - 110					09/12/18 13:54	09/20/18 08:59	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.620		0.297	0.300	5.00	0.443	pCi/L		10/05/18 00:01	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21286 FB-1

Lab Sample ID: 400-158895-3

Date Collected: 09/05/18 11:30

Matrix: Water

Date Received: 09/07/18 09:11

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.320		0.109	0.112	1.00	0.0854	pCi/L	09/12/18 09:23	10/04/18 04:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					09/12/18 09:23	10/04/18 04:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.121	U	0.255	0.256	1.00	0.439	pCi/L	09/12/18 13:54	09/20/18 08:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					09/12/18 13:54	09/20/18 08:59	1
Y Carrier	84.9		40 - 110					09/12/18 13:54	09/20/18 08:59	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.441		0.277	0.279	5.00	0.439	pCi/L		10/05/18 00:01	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21287 PZ-5

Lab Sample ID: 400-158895-4

Date Collected: 09/05/18 12:18

Matrix: Water

Date Received: 09/07/18 09:11

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.317		0.111	0.114	1.00	0.101	pCi/L	09/12/18 09:23	10/04/18 04:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					09/12/18 09:23	10/04/18 04:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.314	U	0.325	0.327	1.00	0.531	pCi/L	09/12/18 13:54	09/20/18 08:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					09/12/18 13:54	09/20/18 08:59	1
Y Carrier	77.0		40 - 110					09/12/18 13:54	09/20/18 08:59	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.631		0.343	0.346	5.00	0.531	pCi/L		10/05/18 00:01	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21288 EB-1

Lab Sample ID: 400-158895-5

Date Collected: 09/05/18 12:45

Matrix: Water

Date Received: 09/07/18 09:11

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.326		0.110	0.114	1.00	0.0919	pCi/L	09/12/18 09:23	10/04/18 04:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					09/12/18 09:23	10/04/18 04:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.127	U	0.279	0.280	1.00	0.479	pCi/L	09/12/18 13:54	09/20/18 08:59	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					09/12/18 13:54	09/20/18 08:59	1
Y Carrier	82.2		40 - 110					09/12/18 13:54	09/20/18 08:59	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.454	U	0.300	0.302	5.00	0.479	pCi/L		10/05/18 00:01	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21289 MW-14

Lab Sample ID: 400-158895-6

Date Collected: 09/05/18 14:16

Matrix: Water

Date Received: 09/07/18 09:11

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.344		0.119	0.123	1.00	0.112	pCi/L	09/12/18 09:23	10/04/18 04:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					09/12/18 09:23	10/04/18 04:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.511		0.309	0.312	1.00	0.467	pCi/L	09/12/18 13:54	09/20/18 09:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					09/12/18 13:54	09/20/18 09:00	1
Y Carrier	86.7		40 - 110					09/12/18 13:54	09/20/18 09:00	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.855		0.331	0.335	5.00	0.467	pCi/L		10/05/18 00:01	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21290 MW-14 DUP

Lab Sample ID: 400-158895-7

Date Collected: 09/05/18 14:16

Matrix: Water

Date Received: 09/07/18 09:11

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.435		0.125	0.131	1.00	0.0887	pCi/L	09/12/18 09:23	10/04/18 04:32	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					09/12/18 09:23	10/04/18 04:32	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.478	U	0.314	0.318	1.00	0.484	pCi/L	09/12/18 13:54	09/20/18 09:00	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					09/12/18 13:54	09/20/18 09:00	1
Y Carrier	81.5		40 - 110					09/12/18 13:54	09/20/18 09:00	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.913		0.338	0.344	5.00	0.484	pCi/L		10/05/18 00:01	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
SDG: Gadsden Ash Pond 1162

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21284 PZ-1

Date Collected: 09/05/18 10:08

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			388651	09/12/18 09:23	JLC	TAL SL
Total/NA	Analysis	9315		1	392949	10/04/18 04:28	CDR	TAL SL
Total/NA	Prep	PrecSep_0			388773	09/12/18 13:54	JLC	TAL SL
Total/NA	Analysis	9320		1	390525	09/20/18 08:59	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	393157	10/05/18 00:01	MAR	TAL SL

Client Sample ID: AY21285 PZ-6

Date Collected: 09/05/18 11:09

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			388651	09/12/18 09:23	JLC	TAL SL
Total/NA	Analysis	9315		1	392951	10/04/18 04:31	CDR	TAL SL
Total/NA	Prep	PrecSep_0			388773	09/12/18 13:54	JLC	TAL SL
Total/NA	Analysis	9320		1	390525	09/20/18 08:59	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	393157	10/05/18 00:01	MAR	TAL SL

Client Sample ID: AY21286 FB-1

Date Collected: 09/05/18 11:30

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			388651	09/12/18 09:23	JLC	TAL SL
Total/NA	Analysis	9315		1	392951	10/04/18 04:32	CDR	TAL SL
Total/NA	Prep	PrecSep_0			388773	09/12/18 13:54	JLC	TAL SL
Total/NA	Analysis	9320		1	390525	09/20/18 08:59	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	393157	10/05/18 00:01	MAR	TAL SL

Client Sample ID: AY21287 PZ-5

Date Collected: 09/05/18 12:18

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			388651	09/12/18 09:23	JLC	TAL SL
Total/NA	Analysis	9315		1	392951	10/04/18 04:32	CDR	TAL SL
Total/NA	Prep	PrecSep_0			388773	09/12/18 13:54	JLC	TAL SL
Total/NA	Analysis	9320		1	390525	09/20/18 08:59	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	393157	10/05/18 00:01	MAR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21288 EB-1

Lab Sample ID: 400-158895-5

Date Collected: 09/05/18 12:45

Matrix: Water

Date Received: 09/07/18 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			388651	09/12/18 09:23	JLC	TAL SL
Total/NA	Analysis	9315		1	392951	10/04/18 04:32	CDR	TAL SL
Total/NA	Prep	PrecSep_0			388773	09/12/18 13:54	JLC	TAL SL
Total/NA	Analysis	9320		1	390525	09/20/18 08:59	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	393157	10/05/18 00:01	MAR	TAL SL

Client Sample ID: AY21289 MW-14

Lab Sample ID: 400-158895-6

Date Collected: 09/05/18 14:16

Matrix: Water

Date Received: 09/07/18 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			388651	09/12/18 09:23	JLC	TAL SL
Total/NA	Analysis	9315		1	392951	10/04/18 04:32	CDR	TAL SL
Total/NA	Prep	PrecSep_0			388773	09/12/18 13:54	JLC	TAL SL
Total/NA	Analysis	9320		1	390525	09/20/18 09:00	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	393157	10/05/18 00:01	MAR	TAL SL

Client Sample ID: AY21290 MW-14 DUP

Lab Sample ID: 400-158895-7

Date Collected: 09/05/18 14:16

Matrix: Water

Date Received: 09/07/18 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			388651	09/12/18 09:23	JLC	TAL SL
Total/NA	Analysis	9315		1	392951	10/04/18 04:32	CDR	TAL SL
Total/NA	Prep	PrecSep_0			388773	09/12/18 13:54	JLC	TAL SL
Total/NA	Analysis	9320		1	390525	09/20/18 09:00	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	393157	10/05/18 00:01	MAR	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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
SDG: Gadsden Ash Pond 1162

Rad

Prep Batch: 388651

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-158895-1	AY21284 PZ-1	Total/NA	Water	PrecSep-21	
400-158895-2	AY21285 PZ-6	Total/NA	Water	PrecSep-21	
400-158895-3	AY21286 FB-1	Total/NA	Water	PrecSep-21	
400-158895-4	AY21287 PZ-5	Total/NA	Water	PrecSep-21	
400-158895-5	AY21288 EB-1	Total/NA	Water	PrecSep-21	
400-158895-6	AY21289 MW-14	Total/NA	Water	PrecSep-21	
400-158895-7	AY21290 MW-14 DUP	Total/NA	Water	PrecSep-21	
MB 160-388651/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-388651/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-158895-1 MS	AY21284 PZ-1	Total/NA	Water	PrecSep-21	
400-158895-1 MSD	AY21284 PZ-1	Total/NA	Water	PrecSep-21	

Prep Batch: 388773

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-158895-1	AY21284 PZ-1	Total/NA	Water	PrecSep_0	
400-158895-2	AY21285 PZ-6	Total/NA	Water	PrecSep_0	
400-158895-3	AY21286 FB-1	Total/NA	Water	PrecSep_0	
400-158895-4	AY21287 PZ-5	Total/NA	Water	PrecSep_0	
400-158895-5	AY21288 EB-1	Total/NA	Water	PrecSep_0	
400-158895-6	AY21289 MW-14	Total/NA	Water	PrecSep_0	
400-158895-7	AY21290 MW-14 DUP	Total/NA	Water	PrecSep_0	
MB 160-388773/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-388773/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-158895-1 MS	AY21284 PZ-1	Total/NA	Water	PrecSep_0	
400-158895-1 MSD	AY21284 PZ-1	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-388651/24-A
Matrix: Water
Analysis Batch: 392965

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 388651

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.1315		0.0808	0.0817	1.00	0.103	pCi/L	09/12/18 09:23	10/04/18 04:37	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					09/12/18 09:23	10/04/18 04:37	1

Lab Sample ID: LCS 160-388651/1-A
Matrix: Water
Analysis Batch: 392949

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 388651

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	16.22		1.66	1.00	0.0929	pCi/L	107	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	95.3		40 - 110						

Lab Sample ID: 400-158895-1 MS
Matrix: Water
Analysis Batch: 392951

Client Sample ID: AY21284 PZ-1
Prep Type: Total/NA
Prep Batch: 388651

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	0.297		15.1	14.52		1.46	1.00	0.119	pCi/L	94	75 - 138
Carrier	MS %Yield	MS Qualifier	Limits								
Ba Carrier	105		40 - 110								

Lab Sample ID: 400-158895-1 MSD
Matrix: Water
Analysis Batch: 392951

Client Sample ID: AY21284 PZ-1
Prep Type: Total/NA
Prep Batch: 388651

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.297		15.1	15.37		1.55	1.00	0.0988	pCi/L	100	75 - 138	0.28	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Ba Carrier	95.3		40 - 110										

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-388773/24-A
Matrix: Water
Analysis Batch: 390525

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 388773

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3015	U	0.250	0.251	1.00	0.394	pCi/L	09/12/18 13:54	09/20/18 09:01	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110	09/12/18 13:54	09/20/18 09:01	1
Y Carrier	84.5		40 - 110	09/12/18 13:54	09/20/18 09:01	1

Lab Sample ID: LCS 160-388773/1-A
Matrix: Water
Analysis Batch: 390525

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 388773

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	14.6	16.74		1.85	1.00	0.538	pCi/L	114	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.3		40 - 110
Y Carrier	82.2		40 - 110

Lab Sample ID: 400-158895-1 MS
Matrix: Water
Analysis Batch: 390525

Client Sample ID: AY21284 PZ-1
Prep Type: Total/NA
Prep Batch: 388773

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	0.292	U	14.6	13.09		1.49	1.00	0.503	pCi/L	87	45 - 150

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	105		40 - 110
Y Carrier	82.2		40 - 110

Lab Sample ID: 400-158895-1 MSD
Matrix: Water
Analysis Batch: 390525

Client Sample ID: AY21284 PZ-1
Prep Type: Total/NA
Prep Batch: 388773

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.292	U	14.6	14.83		1.66	1.00	0.510	pCi/L	99	45 - 150	0.55	1

Carrier	MSD %Yield	MSD Qualifier	Limits
Ba Carrier	95.3		40 - 110
Y Carrier	84.1		40 - 110

Chain of Custody Record

Client Information Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6197(Tel) Email: lbmicki@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1162		Lab PM: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com		Carrier Tracking Note(s): COC No: 400-56525-24537.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): Routine PO #: 40007143 WO #: S50WH		Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> X <input type="checkbox"/> N Total Number of Containers: 4			
Sample Identification Sample ID: AY21284 Sample Date: 9/5/18 Sample Time: 10:08 Sample Type (C=Comp, G=grab): G Matrix (Weather, Specific, Domestic, Air, etc.): Water Preservation Code:		SM 4500 F C SM 4500 CL E SM 4500 SQ4 E		Special Instructions/Note: PZ-1 PZ-6 FB-1 (Field Blank) PZ-5 EB-1 (Equipment Blank) MW-14 MW-14 DUP (Sample Duplicate)	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Empty Kit Relinquished by: Relinquished by: Laura Mickiff Date: 9/6/2018, 1344		Received by: Date/Time:		Method of Shipment: Date/Time:	
Relinquished by: Date/Time:		Received by: Date/Time:		Company:	
Relinquished by: Date/Time:		Received by: Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 9-7-18 9:11 0.0°C (R7)			



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-158895-2
SDG Number: Gadsden Ash Pond 1162

Login Number: 158895

List Number: 1

Creator: Johnson, Jeremy N

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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 IR7
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	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-158895-2
SDG Number: Gadsden Ash Pond 1162

Login Number: 158895

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 09/11/18 10:42 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	False	
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
 SDG: Gadsden Ash Pond 1162

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	10-09-19
Iowa	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	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-16	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

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	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-2
SDG: Gadsden Ash Pond 1162

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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	10-31-18 *

* 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: 400-158895-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1162

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

9/20/2018 2:50:04 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

Job ID: 400-158895-1

Laboratory: TestAmerica Pensacola

Narrative

**Job Narrative
400-158895-1**

General Chemistry

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 411983 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: AY21289 MW-14 (400-158895-6) and AY21290 MW-14 DUP (400-158895-7). Elevated reporting limits (RLs) are provided.

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Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21284 PZ-1

Lab Sample ID: 400-158895-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4	F1	2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.13		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	1.4	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY21285 PZ-6

Lab Sample ID: 400-158895-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.9		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY21286 FB-1

Lab Sample ID: 400-158895-3

No Detections.

Client Sample ID: AY21287 PZ-5

Lab Sample ID: 400-158895-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.7		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY21288 EB-1

Lab Sample ID: 400-158895-5

No Detections.

Client Sample ID: AY21289 MW-14

Lab Sample ID: 400-158895-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.22		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	86		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY21290 MW-14 DUP

Lab Sample ID: 400-158895-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.19		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	86		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

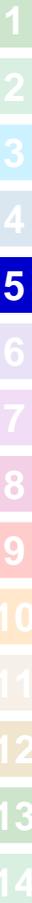
Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-158895-1	AY21284 PZ-1	Water	09/05/18 10:08	09/07/18 09:11
400-158895-2	AY21285 PZ-6	Water	09/05/18 11:09	09/07/18 09:11
400-158895-3	AY21286 FB-1	Water	09/05/18 11:30	09/07/18 09:11
400-158895-4	AY21287 PZ-5	Water	09/05/18 12:18	09/07/18 09:11
400-158895-5	AY21288 EB-1	Water	09/05/18 12:45	09/07/18 09:11
400-158895-6	AY21289 MW-14	Water	09/05/18 14:16	09/07/18 09:11
400-158895-7	AY21290 MW-14 DUP	Water	09/05/18 14:16	09/07/18 09:11

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Client Sample Results

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21284 PZ-1

Date Collected: 09/05/18 10:08

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.4	F1	2.0	1.4	mg/L			09/18/18 13:06	1
Fluoride	0.13		0.10	0.032	mg/L			09/20/18 13:01	1
Sulfate	1.4	J	5.0	1.4	mg/L			09/19/18 10:48	1

Client Sample ID: AY21285 PZ-6

Date Collected: 09/05/18 11:09

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.9		2.0	1.4	mg/L			09/18/18 13:16	1
Fluoride	0.040	J	0.10	0.032	mg/L			09/20/18 13:11	1
Sulfate	<1.4		5.0	1.4	mg/L			09/19/18 10:42	1

Client Sample ID: AY21286 FB-1

Date Collected: 09/05/18 11:30

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			09/18/18 13:16	1
Fluoride	<0.032		0.10	0.032	mg/L			09/20/18 13:09	1
Sulfate	<1.4		5.0	1.4	mg/L			09/19/18 10:48	1

Client Sample ID: AY21287 PZ-5

Date Collected: 09/05/18 12:18

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.7		2.0	1.4	mg/L			09/18/18 13:16	1
Fluoride	0.040	J	0.10	0.032	mg/L			09/20/18 12:55	1
Sulfate	<1.4		5.0	1.4	mg/L			09/19/18 10:48	1

Client Sample ID: AY21288 EB-1

Date Collected: 09/05/18 12:45

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-5

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			09/18/18 13:16	1
Fluoride	<0.032		0.10	0.032	mg/L			09/20/18 13:16	1
Sulfate	<1.4		5.0	1.4	mg/L			09/19/18 10:48	1

Client Sample Results

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21289 MW-14

Date Collected: 09/05/18 14:16

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.8		2.0	1.4	mg/L			09/18/18 13:16	1
Fluoride	0.22		0.10	0.032	mg/L			09/20/18 12:59	1
Sulfate	86		25	7.0	mg/L			09/19/18 11:18	5

Client Sample ID: AY21290 MW-14 DUP

Date Collected: 09/05/18 14:16

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-7

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.8		2.0	1.4	mg/L			09/18/18 13:16	1
Fluoride	0.19		0.10	0.032	mg/L			09/20/18 13:05	1
Sulfate	86		25	7.0	mg/L			09/19/18 11:18	5

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21284 PZ-1

Date Collected: 09/05/18 10:08

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	411983	09/18/18 13:06	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	412266	09/20/18 13:01	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	412100	09/19/18 10:48	RRC	TAL PEN

Client Sample ID: AY21285 PZ-6

Date Collected: 09/05/18 11:09

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	411983	09/18/18 13:16	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	412266	09/20/18 13:11	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	412100	09/19/18 10:42	RRC	TAL PEN

Client Sample ID: AY21286 FB-1

Date Collected: 09/05/18 11:30

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	411983	09/18/18 13:16	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	412266	09/20/18 13:09	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	412100	09/19/18 10:48	RRC	TAL PEN

Client Sample ID: AY21287 PZ-5

Date Collected: 09/05/18 12:18

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	411983	09/18/18 13:16	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	412266	09/20/18 12:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	412100	09/19/18 10:48	RRC	TAL PEN

Client Sample ID: AY21288 EB-1

Date Collected: 09/05/18 12:45

Date Received: 09/07/18 09:11

Lab Sample ID: 400-158895-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	411983	09/18/18 13:16	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	412266	09/20/18 13:16	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	412100	09/19/18 10:48	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
SDG: Gadsden Ash Pond 1162

Client Sample ID: AY21289 MW-14

Lab Sample ID: 400-158895-6

Date Collected: 09/05/18 14:16

Matrix: Water

Date Received: 09/07/18 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	411983	09/18/18 13:16	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	412266	09/20/18 12:59	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	412100	09/19/18 11:18	RRC	TAL PEN

Client Sample ID: AY21290 MW-14 DUP

Lab Sample ID: 400-158895-7

Date Collected: 09/05/18 14:16

Matrix: Water

Date Received: 09/07/18 09:11

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	411983	09/18/18 13:16	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	412266	09/20/18 13:05	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	412100	09/19/18 11:18	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
 SDG: Gadsden Ash Pond 1162

General Chemistry

Analysis Batch: 411983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-158895-1	AY21284 PZ-1	Total/NA	Water	SM 4500 Cl- E	
400-158895-2	AY21285 PZ-6	Total/NA	Water	SM 4500 Cl- E	
400-158895-3	AY21286 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-158895-4	AY21287 PZ-5	Total/NA	Water	SM 4500 Cl- E	
400-158895-5	AY21288 EB-1	Total/NA	Water	SM 4500 Cl- E	
400-158895-6	AY21289 MW-14	Total/NA	Water	SM 4500 Cl- E	
400-158895-7	AY21290 MW-14 DUP	Total/NA	Water	SM 4500 Cl- E	
MB 400-411983/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-411983/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-411983/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-158895-1 MS	AY21284 PZ-1	Total/NA	Water	SM 4500 Cl- E	
400-158895-1 MSD	AY21284 PZ-1	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 412100

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-158895-1	AY21284 PZ-1	Total/NA	Water	SM 4500 SO4 E	
400-158895-2	AY21285 PZ-6	Total/NA	Water	SM 4500 SO4 E	
400-158895-3	AY21286 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-158895-4	AY21287 PZ-5	Total/NA	Water	SM 4500 SO4 E	
400-158895-5	AY21288 EB-1	Total/NA	Water	SM 4500 SO4 E	
400-158895-6	AY21289 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-158895-7	AY21290 MW-14 DUP	Total/NA	Water	SM 4500 SO4 E	
MB 400-412100/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-412100/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-412100/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-158895-1 MS	AY21284 PZ-1	Total/NA	Water	SM 4500 SO4 E	
400-158895-1 MSD	AY21284 PZ-1	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 412266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-158895-1	AY21284 PZ-1	Total/NA	Water	SM 4500 F C	
400-158895-2	AY21285 PZ-6	Total/NA	Water	SM 4500 F C	
400-158895-3	AY21286 FB-1	Total/NA	Water	SM 4500 F C	
400-158895-4	AY21287 PZ-5	Total/NA	Water	SM 4500 F C	
400-158895-5	AY21288 EB-1	Total/NA	Water	SM 4500 F C	
400-158895-6	AY21289 MW-14	Total/NA	Water	SM 4500 F C	
400-158895-7	AY21290 MW-14 DUP	Total/NA	Water	SM 4500 F C	
MB 400-412266/2	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-412266/3	Lab Control Sample	Total/NA	Water	SM 4500 F C	
660-89523-B-3 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
660-89523-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
660-89523-B-1 DU	Duplicate	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
 SDG: Gadsden Ash Pond 1162

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-411983/6
Matrix: Water
Analysis Batch: 411983

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			09/18/18 13:06	1

Lab Sample ID: LCS 400-411983/7
Matrix: Water
Analysis Batch: 411983

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.4		mg/L		105	90 - 110

Lab Sample ID: MRL 400-411983/3
Matrix: Water
Analysis Batch: 411983

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.57	J	mg/L		78	50 - 150

Lab Sample ID: 400-158895-1 MS
Matrix: Water
Analysis Batch: 411983

Client Sample ID: AY21284 PZ-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.4	F1	10.0	15.5	F1	mg/L		121	73 - 120

Lab Sample ID: 400-158895-1 MSD
Matrix: Water
Analysis Batch: 411983

Client Sample ID: AY21284 PZ-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.4	F1	10.0	15.6	F1	mg/L		122	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-412266/2
Matrix: Water
Analysis Batch: 412266

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			09/20/18 12:32	1

Lab Sample ID: LCS 400-412266/3
Matrix: Water
Analysis Batch: 412266

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.10		mg/L		103	90 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
 SDG: Gadsden Ash Pond 1162

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 660-89523-B-3 MS
Matrix: Water
Analysis Batch: 412266

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.44	F1	1.00	0.980	F1	mg/L		54	75 - 125

Lab Sample ID: 660-89523-B-3 MSD
Matrix: Water
Analysis Batch: 412266

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.44	F1	1.00	1.00	F1	mg/L		56	75 - 125	2	4

Lab Sample ID: 660-89523-B-1 DU
Matrix: Water
Analysis Batch: 412266

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.22		0.220		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-412100/6
Matrix: Water
Analysis Batch: 412100

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			09/19/18 10:42	1

Lab Sample ID: LCS 400-412100/7
Matrix: Water
Analysis Batch: 412100

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.5		mg/L		103	90 - 110

Lab Sample ID: MRL 400-412100/3
Matrix: Water
Analysis Batch: 412100

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.74	J	mg/L		75	50 - 150

Lab Sample ID: 400-158895-1 MS
Matrix: Water
Analysis Batch: 412100

Client Sample ID: AY21284 PZ-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.4	J	10.0	11.7		mg/L		103	77 - 128

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
 SDG: Gadsden Ash Pond 1162

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

Lab Sample ID: 400-158895-1 MSD
 Matrix: Water
 Analysis Batch: 412100

Client Sample ID: AY21284 PZ-1
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1.4	J	10.0	11.7		mg/L		103	77 - 128	0	5

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Chain of Custody Record

Client Information Sampler: Ben Rothschadl Client Contact: Laura Midkiff Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6197(Tel) Email: lmidkiff@southernco.com Project Name: Gadsden Ash Pond 1162 CCR Site:		Lab PM: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com Carrier Tracking Note(s):		COC No: 400-56525-24537.1 Page: Page 1 of 1 Job #:	
Analysis Requested Due Date Requested: TAT Requested (days): Routine PO #: 40007143 WO #: S50WH Project #: 40007143 S50WH		Total Number of Containers: 4 Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)			
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (Water, Solid, Onsite, Off-Tissue, Ash) Preservation Code		Perform MS/MSD (Yes or No) Field Filtered Sample (Yes or No) SM 4500 F C SM 4500 Cl E SM 4500 SO4 E 9315 Ra226, 9320 Ra228, Ra226Ra228, GPPC Special Instructions/Note: PZ-1 PZ-6 FB-1 (Field Blank) PZ-5 EB-1 (Equipment Blank) MW-14 MW-14 DUP (Sample Duplicate)			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:			
Empty Kit Relinquished by: Relinquished by: Laura Midkiff Date: 9/6/2018, 1344		Method of Shipment: Date/Time: _____ Company: _____			
Relinquished by: Date/Time: _____ Company: _____		Received by: Date/Time: _____ Company: _____			
Relinquished by: Date/Time: _____ Company: _____		Received by: Date/Time: 9-7-18 9:11 Company: _____			
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks: 0.0 °C (R7)			



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-158895-1
SDG Number: Gadsden Ash Pond 1162

Login Number: 158895

List Number: 1

Creator: Johnson, Jeremy N

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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 IR7
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	



Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-158895-1
 SDG: Gadsden Ash Pond 1162

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
Iowa	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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1166
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks & Greg Dyer
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:

Laura Midkiff

Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2018.10.30 16:00:45 -05'00'

Supervision:

T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.10.30 16:49:58 -05'00'



Metals ICP

Gadsden Ash Pond

WMWGADAP_1166

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY22793	629101	WMWGADAP_1166
AY22794	629101	WMWGADAP_1166
AY22795	629101	WMWGADAP_1166
AY22796	629101	WMWGADAP_1166
AY22797	629101	WMWGADAP_1166
AY22798	629101	WMWGADAP_1166
AY22799	629101	WMWGADAP_1166

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.



- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1166

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY22793	629166 & 629608	WMWGADAP_1166
AY22794	629166 & 629608	WMWGADAP_1166
AY22795	629166 & 629608	WMWGADAP_1166
AY22796	629166 & 629608	WMWGADAP_1166
AY22797	629166 & 629608	WMWGADAP_1166
AY22798	629166 & 629608	WMWGADAP_1166
AY22799	629166 & 629608	WMWGADAP_1166

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes, except for Pb in batch 629166. These samples were re-digested and analyzed for Pb in batch 629608. All results except Pb were reported from batch 629166. Only Pb results were reported from batch 629608.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1166

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY22793	629194	WMWGADAP_1166
AY22794	629194	WMWGADAP_1166
AY22795	629194	WMWGADAP_1166
AY22796	629194	WMWGADAP_1166
AY22797	629194	WMWGADAP_1166
AY22798	629194	WMWGADAP_1166
AY22799	629194	WMWGADAP_1166

4. All of the above samples were analyzed by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1166

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY22793	629104	WMWGADAP_1166
AY22794	629104	WMWGADAP_1166
AY22795	629104	WMWGADAP_1166
AY22796	629104	WMWGADAP_1166
AY22797	629104	WMWGADAP_1166
AY22798	629104	WMWGADAP_1166
AY22799	629104	WMWGADAP_1166

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- All samples were between 2.5mg and 200mg residue except for AY22797 and AY22799, which did not meet the 2.5mg residue requirement. Maximum volume of 150mL was filtered.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY22793

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	10/1/2018	EPA 200.8		5.075	0.001	0.005	J 0.00148	mg/L
* Barium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	0.0264	mg/L
* Beryllium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0006	0.003	J 0.000991	mg/L
* Boron, Total	RDA	9/27/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.1	0.5	11.8	mg/L
* Cadmium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000390	mg/L
* Antimony, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.005	0.0286	mg/L
* Chromium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	10/2/2018	EPA 245.1		1	0.00025	0.0005	J 0.000329	mg/L
* Lithium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	10/8/2018	EPA 200.8		5.075	0.001	0.005	J 0.00156	mg/L
* Selenium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/28/2018	SM 2540C		1		25	127	mg/L
Filter Completion Date	CRB	9/26/2018	SM 2540C		1			9/26/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY22793

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY22799	Barium, Total	mg/L	0.0000332	0.0044	0.10	0.0949	0.0935	0.0961	0.085 to 0.115	94.9	70 to 130	1.50	20
AY22799	Arsenic, Total	mg/L	0.0000142	0.0022	0.10	0.0956	0.0961	0.105	0.085 to 0.115	95.6	70 to 130	0.552	20
AY22798	Lead, Total	mg/L	0.0000371	0.0022	0.10	0.111	0.111	0.102	0.085 to 0.115	111	70 to 130	0.715	20
AY22799	Selenium, Total	mg/L	0.0000625	0.0044	0.10	0.102	0.103	0.112	0.085 to 0.115	102	70 to 130	0.879	20
AY22799	Boron, Total	mg/L	0.000308	0.044	1.00	0.978	0.967	0.960	0.85 to 1.15	97.8	70 to 130	1.04	20
AY22799	Molybdenum, Total	mg/L	0.0000264	0.0044	0.10	0.0906	0.0913	0.0959	0.085 to 0.115	90.6	70 to 130	0.758	20
AY22799	Cadmium, Total	mg/L	-0.00000181	0.00066	0.10	0.106	0.103	0.110	0.085 to 0.115	106	70 to 130	2.67	20
AY22799	Mercury, Total by CVAA	mg/L	0.0000771	0.0005	0.004	0.00406	0.00414	0.00417	0.0034 to 0.0046	102	70 to 130	1.99	20
AY22799	Beryllium, Total	mg/L	0.0000197	0.00132	0.10	0.0971	0.0976	0.114	0.085 to 0.115	97.1	70 to 130	0.515	20
AY22799	Cobalt, Total	mg/L	0.00000536	0.0044	0.10	0.0912	0.0926	0.0933	0.085 to 0.115	91.2	70 to 130	1.54	20
AY22799	Antimony, Total	mg/L	0.0000669	0.00176	0.10	0.0992	0.0976	0.104	0.085 to 0.115	99.2	70 to 130	1.62	20
AY22799	Chromium, Total	mg/L	0.0000340	0.0044	0.10	0.0921	0.0929	0.0919	0.085 to 0.115	92.1	70 to 130	0.838	20
AY22799	Thallium, Total	mg/L	0.0000162	0.00044	0.10	0.0889	0.0876	0.0963	0.085 to 0.115	88.9	70 to 130	1.45	20
AY22799	Calcium, Total	mg/L	-0.000831	0.22	5.00	5.06	4.98	5.00	4.25 to 5.75	101	70 to 130	1.42	20
AY22799	Lithium, Total	mg/L	-0.0000297	0.022	0.20	0.193	0.191	0.186	0.17 to 0.23	96.7	70 to 130	1.36	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY22793

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY22799	Solids, Dissolved	mg/L	-4.00	25			0.0000	50.0	40 to 60	0.00	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY22794

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	10/1/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	0.125	mg/L
* Beryllium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/27/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.1	0.5	44.5	mg/L
* Cadmium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	10/2/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	10/8/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/28/2018	SM 2540C		1		25	165	mg/L
Filter Completion Date	CRB	9/26/2018	SM 2540C		1			09/26/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY22794

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			Limit	MB					Limit	Rec	Limit	Prec			
AY22799	Arsenic, Total	mg/L	0.0000142	0.0022	0.10	0.0956	0.0961	0.105	0.085 to 0.115		95.6	70 to 130		0.552	20
AY22799	Barium, Total	mg/L	0.0000332	0.0044	0.10	0.0949	0.0935	0.0961	0.085 to 0.115		94.9	70 to 130		1.50	20
AY22799	Beryllium, Total	mg/L	0.0000197	0.00132	0.10	0.0971	0.0976	0.114	0.085 to 0.115		97.1	70 to 130		0.515	20
AY22799	Cobalt, Total	mg/L	0.00000536	0.0044	0.10	0.0912	0.0926	0.0933	0.085 to 0.115		91.2	70 to 130		1.54	20
AY22798	Lead, Total	mg/L	0.0000371	0.0022	0.10	0.111	0.111	0.102	0.085 to 0.115		111	70 to 130		0.715	20
AY22799	Selenium, Total	mg/L	0.0000625	0.0044	0.10	0.102	0.103	0.112	0.085 to 0.115		102	70 to 130		0.879	20
AY22799	Boron, Total	mg/L	0.000308	0.044	1.00	0.978	0.967	0.960	0.85 to 1.15		97.8	70 to 130		1.04	20
AY22799	Molybdenum, Total	mg/L	0.0000264	0.0044	0.10	0.0906	0.0913	0.0959	0.085 to 0.115		90.6	70 to 130		0.758	20
AY22799	Calcium, Total	mg/L	-0.000831	0.22	5.00	5.06	4.98	5.00	4.25 to 5.75		101	70 to 130		1.42	20
AY22799	Lithium, Total	mg/L	-0.0000297	0.022	0.20	0.193	0.191	0.186	0.17 to 0.23		96.7	70 to 130		1.36	20
AY22799	Cadmium, Total	mg/L	-0.00000181	0.00066	0.10	0.106	0.103	0.110	0.085 to 0.115		106	70 to 130		2.67	20
AY22799	Mercury, Total by CVAA	mg/L	0.0000771	0.0005	0.004	0.00406	0.00414	0.00417	0.0034 to 0.0046		102	70 to 130		1.99	20
AY22799	Antimony, Total	mg/L	0.0000669	0.00176	0.10	0.0992	0.0976	0.104	0.085 to 0.115		99.2	70 to 130		1.62	20
AY22799	Chromium, Total	mg/L	0.0000340	0.0044	0.10	0.0921	0.0929	0.0919	0.085 to 0.115		92.1	70 to 130		0.838	20
AY22799	Thallium, Total	mg/L	0.0000162	0.00044	0.10	0.0889	0.0876	0.0963	0.085 to 0.115		88.9	70 to 130		1.45	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY22794

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY22799	Solids, Dissolved	mg/L	-4.00	25			0.0000	50.0	40 to 60		0.00	5

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY22795

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	10/1/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	0.122	mg/L
* Beryllium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/27/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.1	0.5	42.0	mg/L
* Cadmium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	10/2/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	10/8/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/28/2018	SM 2540C		1		25	163	mg/L
Filter Completion Date	CRB	9/26/2018	SM 2540C		1			09/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY22795

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY22799	Barium, Total	mg/L	0.0000332	0.0044	0.10	0.0949	0.0935	0.0961	0.085 to 0.115	94.9	70 to 130	1.50	20	
AY22799	Calcium, Total	mg/L	-0.000831	0.22	5.00	5.06	4.98	5.00	4.25 to 5.75	101	70 to 130	1.42	20	
AY22799	Lithium, Total	mg/L	-0.0000297	0.022	0.20	0.193	0.191	0.186	0.17 to 0.23	96.7	70 to 130	1.36	20	
AY22799	Boron, Total	mg/L	0.000308	0.044	1.00	0.978	0.967	0.960	0.85 to 1.15	97.8	70 to 130	1.04	20	
AY22799	Molybdenum, Total	mg/L	0.0000264	0.0044	0.10	0.0906	0.0913	0.0959	0.085 to 0.115	90.6	70 to 130	0.758	20	
AY22798	Lead, Total	mg/L	0.0000371	0.0022	0.10	0.111	0.111	0.102	0.085 to 0.115	111	70 to 130	0.715	20	
AY22799	Selenium, Total	mg/L	0.0000625	0.0044	0.10	0.102	0.103	0.112	0.085 to 0.115	102	70 to 130	0.879	20	
AY22799	Cadmium, Total	mg/L	-0.00000181	0.00066	0.10	0.106	0.103	0.110	0.085 to 0.115	106	70 to 130	2.67	20	
AY22799	Mercury, Total by CVAA	mg/L	0.0000771	0.0005	0.004	0.00406	0.00414	0.00417	0.0034 to 0.0046	102	70 to 130	1.99	20	
AY22799	Beryllium, Total	mg/L	0.0000197	0.00132	0.10	0.0971	0.0976	0.114	0.085 to 0.115	97.1	70 to 130	0.515	20	
AY22799	Cobalt, Total	mg/L	0.00000536	0.0044	0.10	0.0912	0.0926	0.0933	0.085 to 0.115	91.2	70 to 130	1.54	20	
AY22799	Antimony, Total	mg/L	0.0000669	0.00176	0.10	0.0992	0.0976	0.104	0.085 to 0.115	99.2	70 to 130	1.62	20	
AY22799	Chromium, Total	mg/L	0.0000340	0.0044	0.10	0.0921	0.0929	0.0919	0.085 to 0.115	92.1	70 to 130	0.838	20	
AY22799	Thallium, Total	mg/L	0.0000162	0.00044	0.10	0.0889	0.0876	0.0963	0.085 to 0.115	88.9	70 to 130	1.45	20	
AY22799	Arsenic, Total	mg/L	0.0000142	0.0022	0.10	0.0956	0.0961	0.105	0.085 to 0.115	95.6	70 to 130	0.552	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY22795

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY22799	Solids, Dissolved	mg/L	-4.00	25			0.0000	50.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY22796

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	10/1/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	0.0290	mg/L
* Beryllium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/27/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.1	0.5	3.73	mg/L
* Cadmium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	10/2/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	10/8/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/28/2018	SM 2540C		1		25	49.3	mg/L
Filter Completion Date	CRB	9/26/2018	SM 2540C		1			09/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY22796

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AY22799	Arsenic, Total	mg/L	0.0000142	0.0022	0.10	0.0956	0.0961	0.105	0.085 to 0.115	95.6	70 to 130	0.552	20
AY22799	Barium, Total	mg/L	0.0000332	0.0044	0.10	0.0949	0.0935	0.0961	0.085 to 0.115	94.9	70 to 130	1.50	20
AY22799	Beryllium, Total	mg/L	0.0000197	0.00132	0.10	0.0971	0.0976	0.114	0.085 to 0.115	97.1	70 to 130	0.515	20
AY22799	Cobalt, Total	mg/L	0.00000536	0.0044	0.10	0.0912	0.0926	0.0933	0.085 to 0.115	91.2	70 to 130	1.54	20
AY22799	Cadmium, Total	mg/L	-0.00000181	0.00066	0.10	0.106	0.103	0.110	0.085 to 0.115	106	70 to 130	2.67	20
AY22799	Mercury, Total by CVAA	mg/L	0.0000771	0.0005	0.004	0.00406	0.00414	0.00417	0.0034 to 0.0046	102	70 to 130	1.99	20
AY22799	Calcium, Total	mg/L	-0.000831	0.22	5.00	5.06	4.98	5.00	4.25 to 5.75	101	70 to 130	1.42	20
AY22799	Lithium, Total	mg/L	-0.0000297	0.022	0.20	0.193	0.191	0.186	0.17 to 0.23	96.7	70 to 130	1.36	20
AY22798	Lead, Total	mg/L	0.0000371	0.0022	0.10	0.111	0.111	0.102	0.085 to 0.115	111	70 to 130	0.715	20
AY22799	Selenium, Total	mg/L	0.0000625	0.0044	0.10	0.102	0.103	0.112	0.085 to 0.115	102	70 to 130	0.879	20
AY22799	Boron, Total	mg/L	0.000308	0.044	1.00	0.978	0.967	0.960	0.85 to 1.15	97.8	70 to 130	1.04	20
AY22799	Molybdenum, Total	mg/L	0.0000264	0.0044	0.10	0.0906	0.0913	0.0959	0.085 to 0.115	90.6	70 to 130	0.758	20
AY22799	Antimony, Total	mg/L	0.0000669	0.00176	0.10	0.0992	0.0976	0.104	0.085 to 0.115	99.2	70 to 130	1.62	20
AY22799	Chromium, Total	mg/L	0.0000340	0.0044	0.10	0.0921	0.0929	0.0919	0.085 to 0.115	92.1	70 to 130	0.838	20
AY22799	Thallium, Total	mg/L	0.0000162	0.00044	0.10	0.0889	0.0876	0.0963	0.085 to 0.115	88.9	70 to 130	1.45	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY22796

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY22799	Solids, Dissolved	mg/L	-4.00	25			0.0000	50.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY22797

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	10/1/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/27/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	10/2/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	10/8/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/28/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	9/26/2018	SM 2540C		1			09/26/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY22797

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY22799	Arsenic, Total	mg/L	0.0000142	0.0022	0.10	0.0956	0.0961	0.105	0.085 to 0.115		95.6	70 to 130	0.552	20
AY22799	Barium, Total	mg/L	0.0000332	0.0044	0.10	0.0949	0.0935	0.0961	0.085 to 0.115		94.9	70 to 130	1.50	20
AY22799	Beryllium, Total	mg/L	0.0000197	0.00132	0.10	0.0971	0.0976	0.114	0.085 to 0.115		97.1	70 to 130	0.515	20
AY22799	Cobalt, Total	mg/L	0.00000536	0.0044	0.10	0.0912	0.0926	0.0933	0.085 to 0.115		91.2	70 to 130	1.54	20
AY22799	Cadmium, Total	mg/L	-0.00000181	0.00066	0.10	0.106	0.103	0.110	0.085 to 0.115		106	70 to 130	2.67	20
AY22799	Mercury, Total by CVAA	mg/L	0.0000771	0.0005	0.004	0.00406	0.00414	0.00417	0.0034 to 0.0046		102	70 to 130	1.99	20
AY22799	Boron, Total	mg/L	0.000308	0.044	1.00	0.978	0.967	0.960	0.85 to 1.15		97.8	70 to 130	1.04	20
AY22799	Molybdenum, Total	mg/L	0.0000264	0.0044	0.10	0.0906	0.0913	0.0959	0.085 to 0.115		90.6	70 to 130	0.758	20
AY22798	Lead, Total	mg/L	0.0000371	0.0022	0.10	0.111	0.111	0.102	0.085 to 0.115		111	70 to 130	0.715	20
AY22799	Selenium, Total	mg/L	0.0000625	0.0044	0.10	0.102	0.103	0.112	0.085 to 0.115		102	70 to 130	0.879	20
AY22799	Antimony, Total	mg/L	0.0000669	0.00176	0.10	0.0992	0.0976	0.104	0.085 to 0.115		99.2	70 to 130	1.62	20
AY22799	Chromium, Total	mg/L	0.0000340	0.0044	0.10	0.0921	0.0929	0.0919	0.085 to 0.115		92.1	70 to 130	0.838	20
AY22799	Thallium, Total	mg/L	0.0000162	0.00044	0.10	0.0889	0.0876	0.0963	0.085 to 0.115		88.9	70 to 130	1.45	20
AY22799	Calcium, Total	mg/L	-0.000831	0.22	5.00	5.06	4.98	5.00	4.25 to 5.75		101	70 to 130	1.42	20
AY22799	Lithium, Total	mg/L	-0.0000297	0.022	0.20	0.193	0.191	0.186	0.17 to 0.23		96.7	70 to 130	1.36	20

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY22797

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY22799	Solids, Dissolved	mg/L	-4.00	25			0.0000	50.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY22798

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	10/1/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	0.112	mg/L
* Beryllium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/27/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.1	0.5	3.25	mg/L
* Cadmium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	10/2/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	10/8/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/28/2018	SM 2540C		1		25	44.7	mg/L
Filter Completion Date	CRB	9/26/2018	SM 2540C		1			09/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY22798

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			Limit	MB					Limit	Rec	Limit	Prec			
AY22799	Arsenic, Total	mg/L	0.0000142	0.0022	0.10	0.0956	0.0961	0.105	0.085 to 0.115		95.6	70 to 130		0.552	20
AY22799	Barium, Total	mg/L	0.0000332	0.0044	0.10	0.0949	0.0935	0.0961	0.085 to 0.115		94.9	70 to 130		1.50	20
AY22799	Cadmium, Total	mg/L	-0.00000181	0.00066	0.10	0.106	0.103	0.110	0.085 to 0.115		106	70 to 130		2.67	20
AY22799	Mercury, Total by CVAA	mg/L	0.0000771	0.0005	0.004	0.00406	0.00414	0.00417	0.0034 to 0.0046		102	70 to 130		1.99	20
AY22799	Calcium, Total	mg/L	-0.000831	0.22	5.00	5.06	4.98	5.00	4.25 to 5.75		101	70 to 130		1.42	20
AY22799	Lithium, Total	mg/L	-0.0000297	0.022	0.20	0.193	0.191	0.186	0.17 to 0.23		96.7	70 to 130		1.36	20
AY22799	Boron, Total	mg/L	0.000308	0.044	1.00	0.978	0.967	0.960	0.85 to 1.15		97.8	70 to 130		1.04	20
AY22799	Molybdenum, Total	mg/L	0.0000264	0.0044	0.10	0.0906	0.0913	0.0959	0.085 to 0.115		90.6	70 to 130		0.758	20
AY22798	Lead, Total	mg/L	0.0000371	0.0022	0.10	0.111	0.111	0.102	0.085 to 0.115		111	70 to 130		0.715	20
AY22799	Selenium, Total	mg/L	0.0000625	0.0044	0.10	0.102	0.103	0.112	0.085 to 0.115		102	70 to 130		0.879	20
AY22799	Beryllium, Total	mg/L	0.0000197	0.00132	0.10	0.0971	0.0976	0.114	0.085 to 0.115		97.1	70 to 130		0.515	20
AY22799	Cobalt, Total	mg/L	0.00000536	0.0044	0.10	0.0912	0.0926	0.0933	0.085 to 0.115		91.2	70 to 130		1.54	20
AY22799	Antimony, Total	mg/L	0.0000669	0.00176	0.10	0.0992	0.0976	0.104	0.085 to 0.115		99.2	70 to 130		1.62	20
AY22799	Chromium, Total	mg/L	0.0000340	0.0044	0.10	0.0921	0.0929	0.0919	0.085 to 0.115		92.1	70 to 130		0.838	20
AY22799	Thallium, Total	mg/L	0.0000162	0.00044	0.10	0.0889	0.0876	0.0963	0.085 to 0.115		88.9	70 to 130		1.45	20

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY22798

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY22799	Solids, Dissolved	mg/L	-4.00	25			0.0000	50.0	40 to 60	0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY22799

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	10/1/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	9/27/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	10/2/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	9/27/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	10/8/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	10/1/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	9/28/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	9/26/2018	SM 2540C		1			09/26/2018	Date

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Laboratory certification ID: E571114

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY22799

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY22799	Arsenic, Total	mg/L	0.0000142	0.0022	0.10	0.0956	0.0961	0.105	0.085 to 0.115		95.6	70 to 130	0.552	20
AY22799	Cadmium, Total	mg/L	-0.00000181	0.00066	0.10	0.106	0.103	0.110	0.085 to 0.115		106	70 to 130	2.67	20
AY22799	Mercury, Total by CVAA	mg/L	0.0000771	0.0005	0.004	0.00406	0.00414	0.00417	0.0034 to 0.0046		102	70 to 130	1.99	20
AY22799	Beryllium, Total	mg/L	0.0000197	0.00132	0.10	0.0971	0.0976	0.114	0.085 to 0.115		97.1	70 to 130	0.515	20
AY22799	Cobalt, Total	mg/L	0.00000536	0.0044	0.10	0.0912	0.0926	0.0933	0.085 to 0.115		91.2	70 to 130	1.54	20
AY22798	Lead, Total	mg/L	0.0000371	0.0022	0.10	0.111	0.111	0.102	0.085 to 0.115		111	70 to 130	0.715	20
AY22799	Selenium, Total	mg/L	0.0000625	0.0044	0.10	0.102	0.103	0.112	0.085 to 0.115		102	70 to 130	0.879	20
AY22799	Antimony, Total	mg/L	0.0000669	0.00176	0.10	0.0992	0.0976	0.104	0.085 to 0.115		99.2	70 to 130	1.62	20
AY22799	Chromium, Total	mg/L	0.0000340	0.0044	0.10	0.0921	0.0929	0.0919	0.085 to 0.115		92.1	70 to 130	0.838	20
AY22799	Thallium, Total	mg/L	0.0000162	0.00044	0.10	0.0889	0.0876	0.0963	0.085 to 0.115		88.9	70 to 130	1.45	20
AY22799	Boron, Total	mg/L	0.000308	0.044	1.00	0.978	0.967	0.960	0.85 to 1.15		97.8	70 to 130	1.04	20
AY22799	Molybdenum, Total	mg/L	0.0000264	0.0044	0.10	0.0906	0.0913	0.0959	0.085 to 0.115		90.6	70 to 130	0.758	20
AY22799	Calcium, Total	mg/L	-0.000831	0.22	5.00	5.06	4.98	5.00	4.25 to 5.75		101	70 to 130	1.42	20
AY22799	Lithium, Total	mg/L	-0.0000297	0.022	0.20	0.193	0.191	0.186	0.17 to 0.23		96.7	70 to 130	1.36	20
AY22799	Barium, Total	mg/L	0.0000332	0.0044	0.10	0.0949	0.0935	0.0961	0.085 to 0.115		94.9	70 to 130	1.50	20

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 24-Sep-18
 Customer ID:
 Delivery Date: 25-Sep-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY22799

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY22799	Solids, Dissolved	mg/L	-4.00	25			0.0000	50.0	40 to 60	0.00	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information

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: 400-159679-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1166

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

10/24/2018 4:47:10 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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

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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
SDG: Gadsden Ash Pond 1166

Job ID: 400-159679-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-159679-1

General Chemistry

Method(s) SM 4500 F C: The sample duplicate precision for the following sample associated with analytical batch 415816 was outside control limits: (400-159679-B-1 DU). The associated Laboratory Control Sample(LCS)met acceptance criteria.

Method(s) SM 4500 SO4 E: Do to the high concentration of sulfates in the parent sample the MS/MSD were diluted after the spike. The spike amounts were adjusted by the dilution factor. (400-159679-B-1 MS) and (400-159679-B-1 MSD)

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AY22800 MW-14 (400-159679-1), (400-159679-B-1 MS) and (400-159679-B-1 MSD). Elevated reporting limits (RLs) are provided.

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Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22800 MW-14

Lab Sample ID: 400-159679-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.1		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.20		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	80		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY22801 PZ-1

Lab Sample ID: 400-159679-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.13		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY22802 PZ-1 DUP

Lab Sample ID: 400-159679-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.6		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.13		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY22803 PZ-6

Lab Sample ID: 400-159679-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.2		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY22804 FB-1

Lab Sample ID: 400-159679-5

No Detections.

Client Sample ID: AY22805 PZ-5

Lab Sample ID: 400-159679-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.9		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY22806 EB-1

Lab Sample ID: 400-159679-7

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
SDG: Gadsden Ash Pond 1166

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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

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Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
SDG: Gadsden Ash Pond 1166

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-159679-1	AY22800 MW-14	Water	09/24/18 11:12	09/26/18 09:41
400-159679-2	AY22801 PZ-1	Water	09/24/18 13:20	09/26/18 09:41
400-159679-3	AY22802 PZ-1 DUP	Water	09/24/18 13:20	09/26/18 09:41
400-159679-4	AY22803 PZ-6	Water	09/24/18 14:24	09/26/18 09:41
400-159679-5	AY22804 FB-1	Water	09/24/18 14:40	09/26/18 09:41
400-159679-6	AY22805 PZ-5	Water	09/24/18 15:30	09/26/18 09:41
400-159679-7	AY22806 EB-1	Water	09/24/18 15:55	09/26/18 09:41

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22800 MW-14

Lab Sample ID: 400-159679-1

Date Collected: 09/24/18 11:12

Matrix: Water

Date Received: 09/26/18 09:41

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.1		2.0	1.4	mg/L			10/15/18 10:34	1
Fluoride	0.20		0.10	0.032	mg/L			10/17/18 13:22	1
Sulfate	80		25	7.0	mg/L			10/12/18 14:41	5

Client Sample ID: AY22801 PZ-1

Lab Sample ID: 400-159679-2

Date Collected: 09/24/18 13:20

Matrix: Water

Date Received: 09/26/18 09:41

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.8		2.0	1.4	mg/L			10/15/18 10:34	1
Fluoride	0.13		0.10	0.032	mg/L			10/17/18 13:28	1
Sulfate	<1.4		5.0	1.4	mg/L			10/12/18 13:28	1

Client Sample ID: AY22802 PZ-1 DUP

Lab Sample ID: 400-159679-3

Date Collected: 09/24/18 13:20

Matrix: Water

Date Received: 09/26/18 09:41

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		2.0	1.4	mg/L			10/15/18 10:34	1
Fluoride	0.13		0.10	0.032	mg/L			10/17/18 13:30	1
Sulfate	<1.4		5.0	1.4	mg/L			10/12/18 13:32	1

Client Sample ID: AY22803 PZ-6

Lab Sample ID: 400-159679-4

Date Collected: 09/24/18 14:24

Matrix: Water

Date Received: 09/26/18 09:41

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.2		2.0	1.4	mg/L			10/15/18 10:37	1
Fluoride	0.040	J	0.10	0.032	mg/L			10/17/18 13:33	1
Sulfate	<1.4		5.0	1.4	mg/L			10/12/18 13:32	1

Client Sample ID: AY22804 FB-1

Lab Sample ID: 400-159679-5

Date Collected: 09/24/18 14:40

Matrix: Water

Date Received: 09/26/18 09:41

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			10/15/18 10:37	1
Fluoride	<0.032		0.10	0.032	mg/L			10/17/18 13:37	1
Sulfate	<1.4		5.0	1.4	mg/L			10/12/18 13:32	1

Client Sample Results

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22805 PZ-5

Lab Sample ID: 400-159679-6

Date Collected: 09/24/18 15:30

Matrix: Water

Date Received: 09/26/18 09:41

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.9		2.0	1.4	mg/L			10/15/18 10:37	1
Fluoride	0.040	J	0.10	0.032	mg/L			10/17/18 13:39	1
Sulfate	<1.4		5.0	1.4	mg/L			10/12/18 13:32	1

Client Sample ID: AY22806 EB-1

Lab Sample ID: 400-159679-7

Date Collected: 09/24/18 15:55

Matrix: Water

Date Received: 09/26/18 09:41

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			10/15/18 10:37	1
Fluoride	<0.032		0.10	0.032	mg/L			10/17/18 13:43	1
Sulfate	<1.4		5.0	1.4	mg/L			10/12/18 13:32	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
SDG: Gadsden Ash Pond 1166

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22800 MW-14

Lab Sample ID: 400-159679-1

Date Collected: 09/24/18 11:12

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	415457	10/15/18 10:34	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415816	10/17/18 13:22	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	415203	10/12/18 14:41	RRC	TAL PEN

Client Sample ID: AY22801 PZ-1

Lab Sample ID: 400-159679-2

Date Collected: 09/24/18 13:20

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	415457	10/15/18 10:34	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415816	10/17/18 13:28	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415203	10/12/18 13:28	RRC	TAL PEN

Client Sample ID: AY22802 PZ-1 DUP

Lab Sample ID: 400-159679-3

Date Collected: 09/24/18 13:20

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	415457	10/15/18 10:34	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415816	10/17/18 13:30	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415203	10/12/18 13:32	RRC	TAL PEN

Client Sample ID: AY22803 PZ-6

Lab Sample ID: 400-159679-4

Date Collected: 09/24/18 14:24

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	415457	10/15/18 10:37	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415816	10/17/18 13:33	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415203	10/12/18 13:32	RRC	TAL PEN

Client Sample ID: AY22804 FB-1

Lab Sample ID: 400-159679-5

Date Collected: 09/24/18 14:40

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	415457	10/15/18 10:37	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415816	10/17/18 13:37	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415203	10/12/18 13:32	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22805 PZ-5

Lab Sample ID: 400-159679-6

Date Collected: 09/24/18 15:30

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	415457	10/15/18 10:37	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415816	10/17/18 13:39	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415203	10/12/18 13:32	RRC	TAL PEN

Client Sample ID: AY22806 EB-1

Lab Sample ID: 400-159679-7

Date Collected: 09/24/18 15:55

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	415457	10/15/18 10:37	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	415816	10/17/18 13:43	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	415203	10/12/18 13:32	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
 SDG: Gadsden Ash Pond 1166

General Chemistry

Analysis Batch: 415203

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-159679-1	AY22800 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-159679-2	AY22801 PZ-1	Total/NA	Water	SM 4500 SO4 E	
400-159679-3	AY22802 PZ-1 DUP	Total/NA	Water	SM 4500 SO4 E	
400-159679-4	AY22803 PZ-6	Total/NA	Water	SM 4500 SO4 E	
400-159679-5	AY22804 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-159679-6	AY22805 PZ-5	Total/NA	Water	SM 4500 SO4 E	
400-159679-7	AY22806 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-415203/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-415203/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-415203/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-159679-1 MS	AY22800 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-159679-1 MSD	AY22800 MW-14	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 415457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-159679-1	AY22800 MW-14	Total/NA	Water	SM 4500 Cl- E	
400-159679-2	AY22801 PZ-1	Total/NA	Water	SM 4500 Cl- E	
400-159679-3	AY22802 PZ-1 DUP	Total/NA	Water	SM 4500 Cl- E	
400-159679-4	AY22803 PZ-6	Total/NA	Water	SM 4500 Cl- E	
400-159679-5	AY22804 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-159679-6	AY22805 PZ-5	Total/NA	Water	SM 4500 Cl- E	
400-159679-7	AY22806 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-415457/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-415457/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-415457/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-159679-1 MS	AY22800 MW-14	Total/NA	Water	SM 4500 Cl- E	
400-159679-1 MSD	AY22800 MW-14	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 415816

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-159679-1	AY22800 MW-14	Total/NA	Water	SM 4500 F C	
400-159679-2	AY22801 PZ-1	Total/NA	Water	SM 4500 F C	
400-159679-3	AY22802 PZ-1 DUP	Total/NA	Water	SM 4500 F C	
400-159679-4	AY22803 PZ-6	Total/NA	Water	SM 4500 F C	
400-159679-5	AY22804 FB-1	Total/NA	Water	SM 4500 F C	
400-159679-6	AY22805 PZ-5	Total/NA	Water	SM 4500 F C	
400-159679-7	AY22806 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-415816/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-415816/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-160186-E-3 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-160186-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-159679-1 DU	AY22800 MW-14	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
 SDG: Gadsden Ash Pond 1166

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-415457/6
Matrix: Water
Analysis Batch: 415457

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			10/15/18 10:34	1

Lab Sample ID: LCS 400-415457/7
Matrix: Water
Analysis Batch: 415457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.6		mg/L		105	90 - 110

Lab Sample ID: MRL 400-415457/3
Matrix: Water
Analysis Batch: 415457

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.05		mg/L		103	50 - 150

Lab Sample ID: 400-159679-1 MS
Matrix: Water
Analysis Batch: 415457

Client Sample ID: AY22800 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.1		10.0	14.4		mg/L		113	73 - 120

Lab Sample ID: 400-159679-1 MSD
Matrix: Water
Analysis Batch: 415457

Client Sample ID: AY22800 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	3.1		10.0	14.4		mg/L		113	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-415816/3
Matrix: Water
Analysis Batch: 415816

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			10/17/18 12:23	1

Lab Sample ID: LCS 400-415816/4
Matrix: Water
Analysis Batch: 415816

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.10		mg/L		103	90 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
 SDG: Gadsden Ash Pond 1166

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 400-160186-E-3 MS
Matrix: Water
Analysis Batch: 415816

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	5.3		1.00	6.40	4	mg/L		113	75 - 125

Lab Sample ID: 400-160186-E-3 MSD
Matrix: Water
Analysis Batch: 415816

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	5.3		1.00	6.40	4	mg/L		113	75 - 125	0	4

Lab Sample ID: 400-159679-1 DU
Matrix: Water
Analysis Batch: 415816

Client Sample ID: AY22800 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.20		0.120	F5	mg/L		50	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-415203/6
Matrix: Water
Analysis Batch: 415203

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			10/12/18 13:21	1

Lab Sample ID: LCS 400-415203/7
Matrix: Water
Analysis Batch: 415203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.7		mg/L		98	90 - 110

Lab Sample ID: MRL 400-415203/3
Matrix: Water
Analysis Batch: 415203

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.47	J	mg/L		69	50 - 150

Lab Sample ID: 400-159679-1 MS
Matrix: Water
Analysis Batch: 415203

Client Sample ID: AY22800 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	80		10.0	86.8	4	mg/L		65	77 - 128

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
 SDG: Gadsden Ash Pond 1166

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

Lab Sample ID: 400-159679-1 MSD
 Matrix: Water
 Analysis Batch: 415203

Client Sample ID: AY22800 MW-14
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	80		10.0	87.5	4	mg/L		72	77 - 128	1	5

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Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-159679-1
SDG Number: Gadsden Ash Pond 1166

Login Number: 159679

List Number: 1

Creator: Conrady, Hank W

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-1
 SDG: Gadsden Ash Pond 1166

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	10-09-19
Iowa	State Program	7	367	08-01-20
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	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-16	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



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: 400-159679-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1166

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

10/24/2018 4:59:15 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
SDG: Gadsden Ash Pond 1166

Job ID: 400-159679-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-159679-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-392366: The following samples were prepared at a reduced aliquot due to limited sample volume. AY22800 MW-14 (400-159679-1), AY22800 MW-14 (400-159679-1[DU]), AY22801 PZ-1 (400-159679-2), AY22802 PZ-1 DUP (400-159679-3), AY22803 PZ-6 (400-159679-4), AY22804 FB-1 (400-159679-5), AY22805 PZ-5 (400-159679-6) and AY22806 EB-1 (400-159679-7). Sample aliquots 240-101907-1 and 240-101980-1 reduced due to potential matrix interference. Samples had strong odors. Sample aliquot 240-101974-1 reduced due to potential matrix interference. Sample was yellow, contained sediment, and had a strong odor.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-392356: The following samples were prepared at a reduced aliquot due to limited sample volume. AY22800 MW-14 (400-159679-1), AY22800 MW-14 (400-159679-1[DU]), AY22801 PZ-1 (400-159679-2), AY22802 PZ-1 DUP (400-159679-3), AY22803 PZ-6 (400-159679-4), AY22804 FB-1 (400-159679-5), AY22805 PZ-5 (400-159679-6) and AY22806 EB-1 (400-159679-7). Sample aliquots 240-101907-1 and 240-101980-1 reduced due to potential matrix interference. Samples had strong odors. Sample aliquot 240-101974-1 reduced due to potential matrix interference. Sample was yellow, contained sediment, and had a strong odor.

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
SDG: Gadsden Ash Pond 1166

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
SDG: Gadsden Ash Pond 1166

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-159679-1	AY22800 MW-14	Water	09/24/18 11:12	09/26/18 09:41
400-159679-2	AY22801 PZ-1	Water	09/24/18 13:20	09/26/18 09:41
400-159679-3	AY22802 PZ-1 DUP	Water	09/24/18 13:20	09/26/18 09:41
400-159679-4	AY22803 PZ-6	Water	09/24/18 14:24	09/26/18 09:41
400-159679-5	AY22804 FB-1	Water	09/24/18 14:40	09/26/18 09:41
400-159679-6	AY22805 PZ-5	Water	09/24/18 15:30	09/26/18 09:41
400-159679-7	AY22806 EB-1	Water	09/24/18 15:55	09/26/18 09:41

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22800 MW-14

Lab Sample ID: 400-159679-1

Date Collected: 09/24/18 11:12

Matrix: Water

Date Received: 09/26/18 09:41

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.314		0.108	0.112	1.00	0.0923	pCi/L	10/01/18 13:30	10/23/18 12:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					10/01/18 13:30	10/23/18 12:07	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.473		0.292	0.295	1.00	0.445	pCi/L	10/01/18 13:56	10/09/18 17:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					10/01/18 13:56	10/09/18 17:16	1
Y Carrier	89.0		40 - 110					10/01/18 13:56	10/09/18 17:16	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.787		0.311	0.316	5.00	0.445	pCi/L		10/24/18 15:54	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22801 PZ-1

Lab Sample ID: 400-159679-2

Date Collected: 09/24/18 13:20

Matrix: Water

Date Received: 09/26/18 09:41

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.337		0.118	0.122	1.00	0.105	pCi/L	10/01/18 13:30	10/23/18 12:07	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					10/01/18 13:30	10/23/18 12:07	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.435	U	0.370	0.373	1.00	0.595	pCi/L	10/01/18 13:56	10/09/18 17:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					10/01/18 13:56	10/09/18 17:16	1
Y Carrier	87.1		40 - 110					10/01/18 13:56	10/09/18 17:16	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.772		0.388	0.392	5.00	0.595	pCi/L		10/24/18 15:54	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22802 PZ-1 DUP

Lab Sample ID: 400-159679-3

Date Collected: 09/24/18 13:20

Matrix: Water

Date Received: 09/26/18 09:41

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.294		0.107	0.110	1.00	0.110	pCi/L	10/01/18 13:30	10/23/18 12:08	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					10/01/18 13:30	10/23/18 12:08	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.229	U	0.319	0.320	1.00	0.533	pCi/L	10/01/18 13:56	10/09/18 17:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					10/01/18 13:56	10/09/18 17:16	1
Y Carrier	87.5		40 - 110					10/01/18 13:56	10/09/18 17:16	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.523	U	0.336	0.338	5.00	0.533	pCi/L		10/24/18 15:54	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22803 PZ-6

Lab Sample ID: 400-159679-4

Date Collected: 09/24/18 14:24

Matrix: Water

Date Received: 09/26/18 09:41

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.221		0.0906	0.0928	1.00	0.0883	pCi/L	10/01/18 13:30	10/23/18 12:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					10/01/18 13:30	10/23/18 12:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.341	U	0.269	0.271	1.00	0.532	pCi/L	10/01/18 13:56	10/09/18 17:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					10/01/18 13:56	10/09/18 17:16	1
Y Carrier	87.1		40 - 110					10/01/18 13:56	10/09/18 17:16	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.120	U	0.284	0.286	5.00	0.532	pCi/L		10/24/18 15:54	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22804 FB-1

Lab Sample ID: 400-159679-5

Date Collected: 09/24/18 14:40

Matrix: Water

Date Received: 09/26/18 09:41

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.203		0.0914	0.0932	1.00	0.0964	pCi/L	10/01/18 13:30	10/23/18 12:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					10/01/18 13:30	10/23/18 12:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.570		0.302	0.307	1.00	0.451	pCi/L	10/01/18 13:56	10/09/18 17:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					10/01/18 13:56	10/09/18 17:16	1
Y Carrier	95.3		40 - 110					10/01/18 13:56	10/09/18 17:16	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.773		0.316	0.321	5.00	0.451	pCi/L		10/24/18 15:54	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22805 PZ-5

Lab Sample ID: 400-159679-6

Date Collected: 09/24/18 15:30

Matrix: Water

Date Received: 09/26/18 09:41

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.244		0.0978	0.100	1.00	0.0965	pCi/L	10/01/18 13:30	10/23/18 12:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					10/01/18 13:30	10/23/18 12:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.344	U	0.320	0.322	1.00	0.517	pCi/L	10/01/18 13:56	10/09/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					10/01/18 13:56	10/09/18 17:17	1
Y Carrier	86.4		40 - 110					10/01/18 13:56	10/09/18 17:17	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.588		0.335	0.337	5.00	0.517	pCi/L		10/24/18 15:54	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22806 EB-1

Lab Sample ID: 400-159679-7

Date Collected: 09/24/18 15:55

Matrix: Water

Date Received: 09/26/18 09:41

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.305		0.105	0.109	1.00	0.0904	pCi/L	10/01/18 13:30	10/23/18 12:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					10/01/18 13:30	10/23/18 12:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.210	U	0.302	0.303	1.00	0.573	pCi/L	10/01/18 13:56	10/09/18 17:17	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					10/01/18 13:56	10/09/18 17:17	1
Y Carrier	77.0		40 - 110					10/01/18 13:56	10/09/18 17:17	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0952	U	0.320	0.322	5.00	0.573	pCi/L		10/24/18 15:54	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
SDG: Gadsden Ash Pond 1166

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22800 MW-14

Lab Sample ID: 400-159679-1

Date Collected: 09/24/18 11:12

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			392356	10/01/18 13:30	JLC	TAL SL
Total/NA	Analysis	9315		1	396705	10/23/18 12:07	CDR	TAL SL
Total/NA	Prep	PrecSep_0			392366	10/01/18 13:56	JLC	TAL SL
Total/NA	Analysis	9320		1	393785	10/09/18 17:16	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	397140	10/24/18 15:54	RTM	TAL SL

Client Sample ID: AY22801 PZ-1

Lab Sample ID: 400-159679-2

Date Collected: 09/24/18 13:20

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			392356	10/01/18 13:30	JLC	TAL SL
Total/NA	Analysis	9315		1	396705	10/23/18 12:07	CDR	TAL SL
Total/NA	Prep	PrecSep_0			392366	10/01/18 13:56	JLC	TAL SL
Total/NA	Analysis	9320		1	393785	10/09/18 17:16	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	397140	10/24/18 15:54	RTM	TAL SL

Client Sample ID: AY22802 PZ-1 DUP

Lab Sample ID: 400-159679-3

Date Collected: 09/24/18 13:20

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			392356	10/01/18 13:30	JLC	TAL SL
Total/NA	Analysis	9315		1	396712	10/23/18 12:08	CDR	TAL SL
Total/NA	Prep	PrecSep_0			392366	10/01/18 13:56	JLC	TAL SL
Total/NA	Analysis	9320		1	393785	10/09/18 17:16	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	397140	10/24/18 15:54	RTM	TAL SL

Client Sample ID: AY22803 PZ-6

Lab Sample ID: 400-159679-4

Date Collected: 09/24/18 14:24

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			392356	10/01/18 13:30	JLC	TAL SL
Total/NA	Analysis	9315		1	396712	10/23/18 12:09	CDR	TAL SL
Total/NA	Prep	PrecSep_0			392366	10/01/18 13:56	JLC	TAL SL
Total/NA	Analysis	9320		1	393785	10/09/18 17:16	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	397140	10/24/18 15:54	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
SDG: Gadsden Ash Pond 1166

Client Sample ID: AY22804 FB-1

Lab Sample ID: 400-159679-5

Date Collected: 09/24/18 14:40

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			392356	10/01/18 13:30	JLC	TAL SL
Total/NA	Analysis	9315		1	396712	10/23/18 12:09	CDR	TAL SL
Total/NA	Prep	PrecSep_0			392366	10/01/18 13:56	JLC	TAL SL
Total/NA	Analysis	9320		1	393785	10/09/18 17:16	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	397140	10/24/18 15:54	RTM	TAL SL

Client Sample ID: AY22805 PZ-5

Lab Sample ID: 400-159679-6

Date Collected: 09/24/18 15:30

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			392356	10/01/18 13:30	JLC	TAL SL
Total/NA	Analysis	9315		1	396712	10/23/18 12:09	CDR	TAL SL
Total/NA	Prep	PrecSep_0			392366	10/01/18 13:56	JLC	TAL SL
Total/NA	Analysis	9320		1	393785	10/09/18 17:17	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	397140	10/24/18 15:54	RTM	TAL SL

Client Sample ID: AY22806 EB-1

Lab Sample ID: 400-159679-7

Date Collected: 09/24/18 15:55

Matrix: Water

Date Received: 09/26/18 09:41

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			392356	10/01/18 13:30	JLC	TAL SL
Total/NA	Analysis	9315		1	396712	10/23/18 12:09	CDR	TAL SL
Total/NA	Prep	PrecSep_0			392366	10/01/18 13:56	JLC	TAL SL
Total/NA	Analysis	9320		1	393785	10/09/18 17:17	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	397140	10/24/18 15:54	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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
SDG: Gadsden Ash Pond 1166

Rad

Prep Batch: 392356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-159679-1	AY22800 MW-14	Total/NA	Water	PrecSep-21	
400-159679-2	AY22801 PZ-1	Total/NA	Water	PrecSep-21	
400-159679-3	AY22802 PZ-1 DUP	Total/NA	Water	PrecSep-21	
400-159679-4	AY22803 PZ-6	Total/NA	Water	PrecSep-21	
400-159679-5	AY22804 FB-1	Total/NA	Water	PrecSep-21	
400-159679-6	AY22805 PZ-5	Total/NA	Water	PrecSep-21	
400-159679-7	AY22806 EB-1	Total/NA	Water	PrecSep-21	
MB 160-392356/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-392356/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-159679-1 DU	AY22800 MW-14	Total/NA	Water	PrecSep-21	

Prep Batch: 392366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-159679-1	AY22800 MW-14	Total/NA	Water	PrecSep_0	
400-159679-2	AY22801 PZ-1	Total/NA	Water	PrecSep_0	
400-159679-3	AY22802 PZ-1 DUP	Total/NA	Water	PrecSep_0	
400-159679-4	AY22803 PZ-6	Total/NA	Water	PrecSep_0	
400-159679-5	AY22804 FB-1	Total/NA	Water	PrecSep_0	
400-159679-6	AY22805 PZ-5	Total/NA	Water	PrecSep_0	
400-159679-7	AY22806 EB-1	Total/NA	Water	PrecSep_0	
MB 160-392366/21-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-392366/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-159679-1 DU	AY22800 MW-14	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-392356/21-A
Matrix: Water
Analysis Batch: 396712

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 392356

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2073		0.0898	0.0917	1.00	0.0930	pCi/L	10/01/18 13:30	10/23/18 14:45	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					10/01/18 13:30	10/23/18 14:45	1

Lab Sample ID: LCS 160-392356/1-A
Matrix: Water
Analysis Batch: 396705

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 392356

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	13.94		1.42	1.00	0.102	pCi/L	92	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	109		40 - 110						

Lab Sample ID: 400-159679-1 DU
Matrix: Water
Analysis Batch: 396705

Client Sample ID: AY22800 MW-14
Prep Type: Total/NA
Prep Batch: 392356

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.314		0.3979		0.129	1.00	0.112	pCi/L	0.35	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	107		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-392366/21-A
Matrix: Water
Analysis Batch: 393786

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 392366

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3788	U	0.264	0.266	1.00	0.407	pCi/L	10/01/18 13:56	10/09/18 17:19	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	110		40 - 110					10/01/18 13:56	10/09/18 17:19	1
Y Carrier	87.9		40 - 110					10/01/18 13:56	10/09/18 17:19	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

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

Lab Sample ID: LCS 160-392366/1-A
Matrix: Water
Analysis Batch: 393785

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 392366

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	14.5	13.93		1.55	1.00	0.427	pCi/L	96	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	109		40 - 110
Y Carrier	87.5		40 - 110

Lab Sample ID: 400-159679-1 DU
Matrix: Water
Analysis Batch: 393785

Client Sample ID: AY22800 MW-14
Prep Type: Total/NA
Prep Batch: 392366

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.473		-0.01287	U	0.265	1.00	0.476	pCi/L	0.87	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	107		40 - 110
Y Carrier	87.1		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-159679-1 DU
Matrix: Water
Analysis Batch: 397140

Client Sample ID: AY22800 MW-14
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.787		0.3850	U	0.295	5.00	0.476	pCi/L	0.66	

Chain of Custody Record

Client Information Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State: AL, Zip: 35040 Phone: 205-664-6197(Tel) Email: lbmickij@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1166		Client Contact: Ben Rottschadi Laura Mickiff Phone: E-Mail: cheyenne.whitmire@testamericainc.com		Lab PM: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com		Carrier Tracking Note(s): 400-56525-24537-1 Page: Page 1 of 1 Job #:											
Due Date Requested: TAT Requested (days): Routine PO #: 40007143 WO #: 40007143 Project #: 40007143 SSO#:		Analysis Requested 9315, R4226, 9320, R4228, R4226R4228, GPPC SM 4500 SO4, E SM 4500 Cl, E SM 4500 F, C Perform MS/MSD (Yes or No)		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSC04 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2SO4 Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 X - EDTA Y - EDA Z - other (specify)											
Sample Identification AY22800 AY22801 AY22802 AY22803 AY22804 AY22805 AY22806		Sample Date 9/24/18 9/24/18 9/24/18 9/24/18 9/24/18 9/24/18 9/24/18		Sample Time 11:12 13:20 13:20 14:24 14:40 15:30 15:55		Sample Type (C=Comp, G=grab) G G G G G G G		Matrix (Water, Solid, Overhead, etc.) Water Water Water Water Water Water Water		Field Filtered Sample (Yes or No) X X X X X X X		Perform MS/MSD (Yes or No) X X X X X X X		Total Number of Containers 4 2 2 2 2 2 2		Special Instructions/Note: MW-14 PZ-1 PZ-1 DUP (Sample Duplicate) PZ-6 FB-1 (Field Blank) PZ-5 EB-1 (Equipment Blank)	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)																	
Empty Kit Relinquished by: Relinquished by: Laura Mickiff Date: 9/25/2018; 12:00 Company: APC																	
Relinquished by: Relinquished by: [Signature] Date: 9-26-18 9:41 Company: [Signature]																	
Relinquished by: Relinquished by: [Signature] Date: 9-26-18 9:41 Company: [Signature]																	
Custody Seals Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Cooler Temperature(s) °C and Other Remarks: 0.0°C IR-7																	

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Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-159679-2
SDG Number: Gadsden Ash Pond 1166

Login Number: 159679

List Number: 1

Creator: Conrady, Hank W

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-159679-2
SDG Number: Gadsden Ash Pond 1166

Login Number: 159679

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 09/28/18 04:23 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	12.0
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
 SDG: Gadsden Ash Pond 1166

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	10-09-19
Iowa	State Program	7	367	08-01-20
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	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-16	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

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	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-159679-2
SDG: Gadsden Ash Pond 1166

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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	10-31-18 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1175
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks & Greg Dyer
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:  **Laura Midkiff**
Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2018.11.28 09:06:19 -06'00'

Supervision:  **T. Durant
Maske**

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.11.28 17:18:32 -06'00'



Metals ICP

Gadsden Ash Pond

WMWGADAP_1175

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY25387	632134	WMWGADAP_1175
AY25388	632134	WMWGADAP_1175
AY25389	632134	WMWGADAP_1175
AY25390	632134	WMWGADAP_1175
AY25391	632134	WMWGADAP_1175
AY25392	632134	WMWGADAP_1175
AY25393	632134	WMWGADAP_1175
AY25394	632134	WMWGADAP_1175
AY25395	632134	WMWGADAP_1175
AY25396	632134	WMWGADAP_1175
AY25397	632135	WMWGADAP_1175
AY25398	632135	WMWGADAP_1175
AY25399	632135	WMWGADAP_1175
AY25400	632135	WMWGADAP_1175
AY25401	632135	WMWGADAP_1175
AY25402	632135	WMWGADAP_1175
AY25403	632135	WMWGADAP_1175
AY25404	632135	WMWGADAP_1175
AY25405	632135	WMWGADAP_1175
AY25406	632135	WMWGADAP_1175
AY25407	632136	WMWGADAP_1175
AY25408	632136	WMWGADAP_1175
AY25409	632136	WMWGADAP_1175

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.

7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects except for the following:

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution</u>
AY25387	Calcium	x10.15
AY25390	Calcium	x10.15
AY25391	Calcium	x10.15

8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1175

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY25387	631745	WMWGADAP_1175
AY25388	631745	WMWGADAP_1175
AY25389	631745	WMWGADAP_1175
AY25390	631745	WMWGADAP_1175
AY25391	631745	WMWGADAP_1175
AY25392	631745	WMWGADAP_1175
AY25393	631745	WMWGADAP_1175
AY25394	631745	WMWGADAP_1175
AY25395	631745	WMWGADAP_1175
AY25396	631745	WMWGADAP_1175
AY25397	631746	WMWGADAP_1175
AY25398	631746	WMWGADAP_1175
AY25399	631746	WMWGADAP_1175
AY25400	631746	WMWGADAP_1175
AY25401	631746	WMWGADAP_1175
AY25402	631746	WMWGADAP_1175
AY25403	631746	WMWGADAP_1175
AY25404	631746	WMWGADAP_1175
AY25405	631746	WMWGADAP_1175
AY25406	631746	WMWGADAP_1175
AY25407	631747	WMWGADAP_1175
AY25408	631747	WMWGADAP_1175
AY25409	631747	WMWGADAP_1175

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1175

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY25387	631756	WMWGADAP_1175
AY25388	631756	WMWGADAP_1175
AY25389	631756	WMWGADAP_1175
AY25390	631756	WMWGADAP_1175
AY25391	631756	WMWGADAP_1175
AY25392	631756	WMWGADAP_1175
AY25393	631756	WMWGADAP_1175
AY25394	631756	WMWGADAP_1175
AY25395	631756	WMWGADAP_1175
AY25396	631756	WMWGADAP_1175
AY25397	631757	WMWGADAP_1175
AY25398	631757	WMWGADAP_1175
AY25399	631757	WMWGADAP_1175
AY25400	631757	WMWGADAP_1175
AY25401	631757	WMWGADAP_1175
AY25402	631757	WMWGADAP_1175
AY25403	631757	WMWGADAP_1175
AY25404	631757	WMWGADAP_1175
AY25405	631757	WMWGADAP_1175
AY25406	631757	WMWGADAP_1175
AY25407	631758	WMWGADAP_1175
AY25408	631758	WMWGADAP_1175
AY25409	631758	WMWGADAP_1175

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. Batch #631757 was rerun due to a sample preparation error. All samples from batch #631757 were re-digested and re-analyzed. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. Batch #631757 was rerun due to a sample preparation error. All samples from batch #631757 were re-digested and re-analyzed. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1175

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY25387	631291	WMWGADAP_1175
AY25388	631291	WMWGADAP_1175
AY25389	631291	WMWGADAP_1175
AY25390	631291	WMWGADAP_1175
AY25391	631291	WMWGADAP_1175
AY25392	631291	WMWGADAP_1175
AY25393	631291	WMWGADAP_1175
AY25394	631291	WMWGADAP_1175
AY25395	631291	WMWGADAP_1175
AY25396	631291	WMWGADAP_1175
AY25397	631353	WMWGADAP_1175
AY25398	631353	WMWGADAP_1175
AY25399	631353	WMWGADAP_1175
AY25400	631353	WMWGADAP_1175
AY25401	631353	WMWGADAP_1175
AY25402	631353	WMWGADAP_1175
AY25403	631353	WMWGADAP_1175
AY25404	631353	WMWGADAP_1175
AY25405	631353	WMWGADAP_1175
AY25406	631353	WMWGADAP_1175
AY25407	631760	WMWGADAP_1175
AY25408	631760	WMWGADAP_1175
AY25409	631760	WMWGADAP_1175

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AY25393
 - AY25405
 - AY25409

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY25387

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0541	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	1.08	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		10.15	1.015	5.075	92.7	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	0.0300	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	450	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY25387

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115	92.5	70 to 130	2.62	20
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115	94.1	70 to 130	1.50	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23	102	70 to 130	1.95	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115	97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115	99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115	91.4	70 to 130	0.828	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115	97.9	70 to 130	1.08	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115	84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115	92.7	70 to 130	0.831	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115	84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15	99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75	98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046	90.0	70 to 130	0.00	20
AY25396	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115	88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115	96.6	70 to 130	0.966	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

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 744 County Road 87, GSC#8
 Calera, AL 35040
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY25387

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec
								Duplicate	LCS			Limit	Limit	Prec	Limit
AY25396	Solids, Dissolved	mg/L	0.0000		25			29.3	52.0		40 to 60			3.30	5

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CC:

Alabama Power General Test Laboratory
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY25388

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	0.0144	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.209	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	0.496	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	27.7	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	0.0259	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	204	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY25388

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115	92.5	70 to 130	2.62	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23	102	70 to 130	1.95	20
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115	94.1	70 to 130	1.50	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115	97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115	99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115	91.4	70 to 130	0.828	20
AY25396	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115	88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115	96.6	70 to 130	0.966	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115	97.9	70 to 130	1.08	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115	84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15	99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75	98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046	90.0	70 to 130	0.00	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115	84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115	92.7	70 to 130	0.831	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY25388

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY25396	Solids, Dissolved	mg/L	0.0000	25			29.3	52.0	40 to 60			3.30	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-4 DUP

Laboratory ID Number: AY25389

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	0.0142	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.212	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	0.492	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	27.4	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	0.0255	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	185	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-4 DUP

Laboratory ID Number: AY25389

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			Limit	MB					Limit	Rec	Limit	Prec		
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115		92.5	70 to 130	2.62	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115		97.9	70 to 130	1.08	20
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115		94.1	70 to 130	1.50	20
AY25396	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115		88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115		96.6	70 to 130	0.966	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115		84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115		92.7	70 to 130	0.831	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115		84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15		99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75		98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046		90.0	70 to 130	0.00	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115		97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115		99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115		91.4	70 to 130	0.828	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23		102	70 to 130	1.95	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-4 DUP

Laboratory ID Number: AY25389

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY25396	Solids, Dissolved	mg/L	0.0000	25			29.3	52.0	40 to 60			3.30	5

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY25390

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	1.01	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0536	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	0.754	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		10.15	1.015	5.075	107	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	0.0438	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	0.0804	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0198	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	J 0.000213	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	484	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY25390

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115	92.5	70 to 130	2.62	20
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115	94.1	70 to 130	1.50	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115	97.9	70 to 130	1.08	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23	102	70 to 130	1.95	20
AY25396	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115	88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115	96.6	70 to 130	0.966	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115	84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115	92.7	70 to 130	0.831	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115	84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15	99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75	98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046	90.0	70 to 130	0.00	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115	97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115	99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115	91.4	70 to 130	0.828	20

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY25390

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY25396	Solids, Dissolved	mg/L	0.0000	25			29.3	52.0	40 to 60		3.30	5

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Laboratory certification ID: E571114

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Comments:

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Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY25391

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	J 0.00451	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0427	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	1.22	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		10.15	1.015	5.075	240	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	0.0243	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		50	1150	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY25391

Sample	Analysis	Units	MB	MB			MS	MSD	LCS	LCS Limit	Rec		Prec Limit
				Limit	Spike	MS					Rec	Limit	
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115	97.9	70 to 130	1.08	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23	102	70 to 130	1.95	20
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115	94.1	70 to 130	1.50	20
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115	92.5	70 to 130	2.62	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115	84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115	92.7	70 to 130	0.831	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115	97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115	99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115	91.4	70 to 130	0.828	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115	84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15	99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75	98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046	90.0	70 to 130	0.00	20
AY25396	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115	88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115	96.6	70 to 130	0.966	20

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Laboratory certification ID: E571114

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Comments:

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY25391

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec
								Duplicate	LCS			Limit	Limit	Prec	Limit
AY25396	Solids, Dissolved	mg/L	0.0000	25				29.3	52.0	40 to 60				3.30	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY25392

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	J 0.00404	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.290	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	0.107	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	36.3	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	184	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY25392

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
				Limit	Spike					Rec	Limit		
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115	92.5	70 to 130	2.62	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23	102	70 to 130	1.95	20
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115	94.1	70 to 130	1.50	20
AY25396	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115	88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115	96.6	70 to 130	0.966	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115	97.9	70 to 130	1.08	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115	97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115	99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115	91.4	70 to 130	0.828	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115	84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15	99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75	98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046	90.0	70 to 130	0.00	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115	84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115	92.7	70 to 130	0.831	20

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY25392

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY25396	Solids, Dissolved	mg/L	0.0000	25			29.3	52.0	40 to 60		3.30	5

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY25393

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY25393

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115	94.1	70 to 130	1.50	20
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115	92.5	70 to 130	2.62	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115	97.9	70 to 130	1.08	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23	102	70 to 130	1.95	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115	97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115	99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115	91.4	70 to 130	0.828	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115	84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115	92.7	70 to 130	0.831	20
AY25396	Cadmium, Total	mg/L	0.0000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115	88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115	96.6	70 to 130	0.966	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115	84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15	99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75	98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046	90.0	70 to 130	0.00	20

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Comments:

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 744 County Road 87, GSC#8
 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY25393

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY25396	Solids, Dissolved	mg/L	0.0000	25			29.3	52.0	40 to 60		3.30	5

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY25394

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.102	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	45.0	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	148	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY25394

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115	92.5	70 to 130	2.62	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23	102	70 to 130	1.95	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115	97.9	70 to 130	1.08	20
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115	94.1	70 to 130	1.50	20
AY25396	Cadmium, Total	mg/L	0.0000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115	88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115	96.6	70 to 130	0.966	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115	84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115	92.7	70 to 130	0.831	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115	97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115	99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115	91.4	70 to 130	0.828	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115	84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15	99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75	98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046	90.0	70 to 130	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 22-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY25394

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Prec	Prec	Limit
								Duplicate	LCS			Rec	Limit	Prec	Limit
AY25396	Solids, Dissolved	mg/L	0.0000	25				29.3	52.0	40 to 60			3.30	5	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY25395

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.125	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	3.37	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	35.3	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY25395

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115	94.1	70 to 130	1.50	20
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115	92.5	70 to 130	2.62	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115	97.9	70 to 130	1.08	20
AY25396	Cadmium, Total	mg/L	0.0000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115	88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115	96.6	70 to 130	0.966	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115	84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115	92.7	70 to 130	0.831	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23	102	70 to 130	1.95	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115	84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15	99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75	98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046	90.0	70 to 130	0.00	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115	97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115	99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115	91.4	70 to 130	0.828	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY25395

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY25396	Solids, Dissolved	mg/L	0.0000	25			29.3	52.0	40 to 60		3.30	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY25396

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0298	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	3.79	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	31.3	mg/L
Filter Completion Date	CRB	10/25/2018	SM 2540C		1			10/25/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY25396

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY25396	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.0925	0.0950	0.102	0.085 to 0.115		92.5	70 to 130	2.62	20
AY25396	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.128	0.126	0.104	0.085 to 0.115		97.9	70 to 130	1.08	20
AY25396	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0941	0.0955	0.108	0.085 to 0.115		94.1	70 to 130	1.50	20
AY25396	Lithium, Total	mg/L	-0.000205	0.022	0.200	0.203	0.207	0.199	0.17 to 0.23		102	70 to 130	1.95	20
AY25396	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0847	0.0851	0.103	0.085 to 0.115		84.7	70 to 130	0.478	20
AY25396	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0927	0.0934	0.100	0.085 to 0.115		92.7	70 to 130	0.831	20
AY25396	Cadmium, Total	mg/L	0.0000000	0.00066	0.10	0.0885	0.0889	0.104	0.085 to 0.115		88.5	70 to 130	0.363	20
AY25396	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0966	0.0975	0.103	0.085 to 0.115		96.6	70 to 130	0.966	20
AY25396	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0847	0.0873	0.101	0.085 to 0.115		84.7	70 to 130	3.10	20
AY25396	Boron, Total	mg/L	0.00201	0.044	1.00	0.995	1.02	0.981	0.85 to 1.15		99.5	70 to 130	2.48	20
AY25396	Calcium, Total	mg/L	0.0161	0.22	5.00	8.73	8.79	4.99	4.25 to 5.75		98.8	70 to 130	0.685	20
AY25396	Mercury, Total by CVAA	mg/L	0.000073	0.0005	0.004	0.00360	0.00360	0.004	0.0034 to 0.0046		90.0	70 to 130	0.00	20
AY25396	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0973	0.0965	0.105	0.085 to 0.115		97.3	70 to 130	0.925	20
AY25396	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.0995	0.104	0.110	0.085 to 0.115		99.5	70 to 130	4.10	20
AY25396	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0914	0.0922	0.105	0.085 to 0.115		91.4	70 to 130	0.828	20

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY25396

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY25396	Solids, Dissolved	mg/L	0.0000	25			29.3	52.0	40 to 60			3.30	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

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Alabama Power General Test Laboratory
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 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY25397

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.260	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	0.436	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	35.3	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	J 0.00230	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	169	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY25397

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046	95.3	70 to 130	0.798	20
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115	97.0	70 to 130	0.915	20
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115	92.2	70 to 130	6.17	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115	96.8	70 to 130	0.625	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115	90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115	99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15	101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75	107	70 to 130	1.62	20
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115	94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115	105	70 to 130	9.78	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115	88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115	95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23	112	70 to 130	2.54	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115	99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115	94.9	70 to 130	1.85	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY25397

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec
								Duplicate	LCS			Limit	Limit	Prec	Limit
AY25406	Solids, Dissolved	mg/L	0.0000	25				170	49.0	40 to 60				3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY25398

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0608	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	J 0.0636	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	18.1	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	105	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY25398

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115	97.0	70 to 130	0.915	20
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046	95.3	70 to 130	0.798	20
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115	92.2	70 to 130	6.17	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115	96.8	70 to 130	0.625	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115	99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115	94.9	70 to 130	1.85	20
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115	94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115	105	70 to 130	9.78	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115	88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115	95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23	112	70 to 130	2.54	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115	90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115	99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15	101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75	107	70 to 130	1.62	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY25398

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY25406	Solids, Dissolved	mg/L	0.0000	25			170	49.0	40 to 60		3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AY25399

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0668	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	J 0.0625	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	18.3	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	103	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AY25399

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			Limit	MB					Limit	Rec	Limit	Prec		
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115		97.0	70 to 130	0.915	20
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046		95.3	70 to 130	0.798	20
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115		92.2	70 to 130	6.17	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115		96.8	70 to 130	0.625	20
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115		94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115		105	70 to 130	9.78	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115		99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115		94.9	70 to 130	1.85	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115		90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115		99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15		101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75		107	70 to 130	1.62	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115		88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115		95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23		112	70 to 130	2.54	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AY25399

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY25406	Solids, Dissolved	mg/L	0.0000	25			170	49.0	40 to 60			3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY25400

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0898	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	0.106	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	25.6	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	142	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY25400

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046	95.3	70 to 130	0.798	20
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115	97.0	70 to 130	0.915	20
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115	92.2	70 to 130	6.17	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115	96.8	70 to 130	0.625	20
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115	94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115	105	70 to 130	9.78	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115	88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115	95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23	112	70 to 130	2.54	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115	99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115	94.9	70 to 130	1.85	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115	90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115	99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15	101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75	107	70 to 130	1.62	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY25400

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec
								Duplicate	LCS			Limit	Limit	Prec	Limit
AY25406	Solids, Dissolved	mg/L	0.0000	25				170	49.0	40 to 60				3.95	5

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MDL's and RL's are adjusted for sample dilution, as applicable

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY25401

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	J 0.00246	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.170	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	J 0.0666	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	50.9	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	209	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY25401

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	Limit
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit		
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046	95.3	70 to 130	0.798	20
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115	97.0	70 to 130	0.915	20
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115	92.2	70 to 130	6.17	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115	96.8	70 to 130	0.625	20
AY25406	Cadmium, Total	mg/L	0.0000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115	94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115	105	70 to 130	9.78	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115	88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115	95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23	112	70 to 130	2.54	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115	90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115	99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15	101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75	107	70 to 130	1.62	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115	99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115	94.9	70 to 130	1.85	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY25401

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY25406	Solids, Dissolved	mg/L	0.0000	25			170	49.0	40 to 60			3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY25402

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.183	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	J 0.0576	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	39.8	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	185	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY25402

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115	92.2	70 to 130	6.17	20
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046	95.3	70 to 130	0.798	20
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115	97.0	70 to 130	0.915	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115	96.8	70 to 130	0.625	20
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115	94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115	105	70 to 130	9.78	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115	90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115	99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15	101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75	107	70 to 130	1.62	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115	99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115	94.9	70 to 130	1.85	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115	88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115	95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23	112	70 to 130	2.54	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY25402

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY25406	Solids, Dissolved	mg/L	0.0000	25			170	49.0	40 to 60		3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY25403

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	J 0.00287	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.311	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	0.114	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	70.2	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	311	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY25403

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			Limit	MB					Limit	Rec	Limit	Prec		
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115		97.0	70 to 130	0.915	20
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046		95.3	70 to 130	0.798	20
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115		92.2	70 to 130	6.17	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115		96.8	70 to 130	0.625	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115		99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115		94.9	70 to 130	1.85	20
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115		94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115		105	70 to 130	9.78	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115		90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115		99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15		101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75		107	70 to 130	1.62	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115		88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115		95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23		112	70 to 130	2.54	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY25403

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec
								Duplicate	LCS			Limit	Limit	Prec	Limit
AY25406	Solids, Dissolved	mg/L	0.0000	25				170	49.0	40 to 60				3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY25404

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0540	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	J 0.0696	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	68.3	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000552	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	J 0.00399	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	507	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY25404

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Limit	
			MB	Limit					Rec	Limit			
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046	95.3	70 to 130	0.798	20
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115	97.0	70 to 130	0.915	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115	96.8	70 to 130	0.625	20
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115	94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115	105	70 to 130	9.78	20
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115	92.2	70 to 130	6.17	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115	88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115	95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23	112	70 to 130	2.54	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115	90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115	99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15	101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75	107	70 to 130	1.62	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115	99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115	94.9	70 to 130	1.85	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY25404

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY25406	Solids, Dissolved	mg/L	0.0000	25			170	49.0	40 to 60			3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY25405

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY25405

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046	95.3	70 to 130	0.798	20	
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115	97.0	70 to 130	0.915	20	
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115	94.5	70 to 130	3.00	20	
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115	105	70 to 130	9.78	20	
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115	90.7	70 to 130	1.46	20	
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115	99.7	70 to 130	1.54	20	
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15	101	70 to 130	1.94	20	
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75	107	70 to 130	1.62	20	
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115	99.4	70 to 130	0.412	20	
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115	94.9	70 to 130	1.85	20	
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115	92.2	70 to 130	6.17	20	
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115	88.1	70 to 130	1.72	20	
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115	95.8	70 to 130	2.52	20	
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23	112	70 to 130	2.54	20	
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115	96.8	70 to 130	0.625	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 23-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY25405

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	LCS	Limit	Rec	Rec	Prec	Prec
								Duplicate	LCS			Limit	Limit	Prec	Limit
AY25406	Solids, Dissolved	mg/L	0.0000	25				170	49.0	40 to 60				3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY25406

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.218	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	J 0.0357	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	28.3	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	J 0.00507	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	10/30/2018	SM 2540C		1		25	184	mg/L
Filter Completion Date	CRB	10/26/2018	SM 2540C		1			10/26/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY25406

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY25406	Barium, Total	mg/L	0.0000460	0.0044	0.10	0.311	0.330	0.104	0.085 to 0.115	92.2	70 to 130	6.17	20
AY25406	Mercury, Total by CVAA	mg/L	0.0000838	0.0005	0.004	0.00381	0.00378	0.00380	0.0034 to 0.0046	95.3	70 to 130	0.798	20
AY25406	Cobalt, Total	mg/L	0.0000101	0.0044	0.10	0.0970	0.0979	0.105	0.085 to 0.115	97.0	70 to 130	0.915	20
AY25406	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0945	0.0917	0.104	0.085 to 0.115	94.5	70 to 130	3.00	20
AY25406	Selenium, Total	mg/L	0.0000226	0.0044	0.10	0.105	0.0956	0.110	0.085 to 0.115	105	70 to 130	9.78	20
AY25406	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.102	0.101	0.102	0.085 to 0.115	96.8	70 to 130	0.625	20
AY25406	Chromium, Total	mg/L	0.0000456	0.0044	0.10	0.0994	0.0990	0.103	0.085 to 0.115	99.4	70 to 130	0.412	20
AY25406	Thallium, Total	mg/L	0.0000272	0.00044	0.10	0.0949	0.0967	0.105	0.085 to 0.115	94.9	70 to 130	1.85	20
AY25406	Beryllium, Total	mg/L	0.0000385	0.00132	0.10	0.0881	0.0896	0.103	0.085 to 0.115	88.1	70 to 130	1.72	20
AY25406	Lead, Total	mg/L	0.0000299	0.0022	0.10	0.0958	0.0982	0.100	0.085 to 0.115	95.8	70 to 130	2.52	20
AY25406	Lithium, Total	mg/L	-0.000210	0.022	0.20	0.223	0.218	0.199	0.17 to 0.23	112	70 to 130	2.54	20
AY25406	Antimony, Total	mg/L	0.0000629	0.00176	0.10	0.0907	0.0920	0.101	0.085 to 0.115	90.7	70 to 130	1.46	20
AY25406	Arsenic, Total	mg/L	0.0000217	0.0022	0.10	0.0997	0.101	0.108	0.085 to 0.115	99.7	70 to 130	1.54	20
AY25406	Boron, Total	mg/L	0.00186	0.044	1.00	1.04	1.02	0.988	0.85 to 1.15	101	70 to 130	1.94	20
AY25406	Calcium, Total	mg/L	0.0190	0.22	5.00	33.6	33.1	4.97	4.25 to 5.75	107	70 to 130	1.62	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY25406

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY25406	Solids, Dissolved	mg/L	0.0000	25			170	49.0	40 to 60			3.95	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY25407

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0499	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	J 0.0261	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	18.0	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000307	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	0.0129	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	11/6/2018	SM 2540C		1		25	107	mg/L
Filter Completion Date	CRB	10/31/2018	SM 2540C		1			10/31/2018	Date

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY25407

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit	
			MB	Limit					Limit	Prec			
AY25409	Selenium, Total	mg/L	0.0000183	0.0044	0.10	0.102	0.107	0.114	0.085 to 0.115	102	70 to 130	4.89	20
AY25409	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.100	0.0969	0.0995	0.085 to 0.115	100	70 to 130	3.46	20
AY25409	Antimony, Total	mg/L	0.0000428	0.00176	0.10	0.0875	0.0888	0.0987	0.085 to 0.115	87.5	70 to 130	1.49	20
AY25409	Chromium, Total	mg/L	0.0000277	0.0044	0.10	0.0983	0.0994	0.101	0.085 to 0.115	98.3	70 to 130	1.04	20
AY25409	Calcium, Total	mg/L	0.00342	0.22	5.00	5.01	5.10	4.91	4.25 to 5.75	100	70 to 130	1.80	20
AY25409	Cobalt, Total	mg/L	0.0000230	0.0044	0.10	0.100	0.0983	0.103	0.085 to 0.115	100	70 to 130	1.84	20
AY25409	Lead, Total	mg/L	0.0000303	0.0022	0.10	0.0948	0.0947	0.101	0.085 to 0.115	94.8	70 to 130	0.142	20
AY25409	Mercury, Total by CVAA	mg/L	0.0000623	0.0005	0.004	0.00386	0.00378	0.00381	0.0034 to 0.0046	96.5	70 to 130	2.09	20
AY25409	Arsenic, Total	mg/L	0.0000249	0.0022	0.10	0.0993	0.0994	0.105	0.085 to 0.115	99.3	70 to 130	0.145	20
AY25409	Barium, Total	mg/L	0.0000277	0.0044	0.10	0.105	0.0992	0.102	0.085 to 0.115	105	70 to 130	5.83	20
AY25409	Thallium, Total	mg/L	0.0000280	0.00044	0.10	0.0940	0.0935	0.106	0.085 to 0.115	94.0	70 to 130	0.465	20
AY25409	Beryllium, Total	mg/L	0.0000276	0.00132	0.10	0.0875	0.0864	0.102	0.085 to 0.115	87.5	70 to 130	1.27	20
AY25409	Boron, Total	mg/L	0.000868	0.044	1.00	0.996	1.02	0.990	0.85 to 1.15	99.6	70 to 130	2.73	20
AY25409	Cadmium, Total	mg/L	0.0000124	0.00066	0.10	0.0942	0.0973	0.103	0.085 to 0.115	94.2	70 to 130	3.15	20
AY25409	Lithium, Total	mg/L	-0.000272	0.022	0.20	0.202	0.207	0.199	0.17 to 0.23	101	70 to 130	2.28	20

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Comments:

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY25407

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY25409	Solids, Dissolved	mg/L	-25.0	25			-0.67	55.0	40 to 60		0.00	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY25408

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	0.0276	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	J 0.000820	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	10.2	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000436	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	0.0269	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	J 0.00121	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	11/6/2018	SM 2540C		1		25	125	mg/L
Filter Completion Date	CRB	10/31/2018	SM 2540C		1			10/31/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY25408

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AY25409	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.100	0.0969	0.0995	0.085 to 0.115	100	70 to 130	3.46	20
AY25409	Selenium, Total	mg/L	0.0000183	0.0044	0.10	0.102	0.107	0.114	0.085 to 0.115	102	70 to 130	4.89	20
AY25409	Arsenic, Total	mg/L	0.0000249	0.0022	0.10	0.0993	0.0994	0.105	0.085 to 0.115	99.3	70 to 130	0.145	20
AY25409	Barium, Total	mg/L	0.0000277	0.0044	0.10	0.105	0.0992	0.102	0.085 to 0.115	105	70 to 130	5.83	20
AY25409	Thallium, Total	mg/L	0.0000280	0.00044	0.10	0.0940	0.0935	0.106	0.085 to 0.115	94.0	70 to 130	0.465	20
AY25409	Antimony, Total	mg/L	0.0000428	0.00176	0.10	0.0875	0.0888	0.0987	0.085 to 0.115	87.5	70 to 130	1.49	20
AY25409	Chromium, Total	mg/L	0.0000277	0.0044	0.10	0.0983	0.0994	0.101	0.085 to 0.115	98.3	70 to 130	1.04	20
AY25409	Beryllium, Total	mg/L	0.0000276	0.00132	0.10	0.0875	0.0864	0.102	0.085 to 0.115	87.5	70 to 130	1.27	20
AY25409	Boron, Total	mg/L	0.000868	0.044	1.00	0.996	1.02	0.990	0.85 to 1.15	99.6	70 to 130	2.73	20
AY25409	Cadmium, Total	mg/L	0.0000124	0.00066	0.10	0.0942	0.0973	0.103	0.085 to 0.115	94.2	70 to 130	3.15	20
AY25409	Lithium, Total	mg/L	-0.000272	0.022	0.20	0.202	0.207	0.199	0.17 to 0.23	101	70 to 130	2.28	20
AY25409	Calcium, Total	mg/L	0.00342	0.22	5.00	5.01	5.10	4.91	4.25 to 5.75	100	70 to 130	1.80	20
AY25409	Cobalt, Total	mg/L	0.0000230	0.0044	0.10	0.100	0.0983	0.103	0.085 to 0.115	100	70 to 130	1.84	20
AY25409	Lead, Total	mg/L	0.0000303	0.0022	0.10	0.0948	0.0947	0.101	0.085 to 0.115	94.8	70 to 130	0.142	20
AY25409	Mercury, Total by CVAA	mg/L	0.0000623	0.0005	0.004	0.00386	0.00378	0.00381	0.0034 to 0.0046	96.5	70 to 130	2.09	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY25408

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY25409	Solids, Dissolved	mg/L	-25.0	25			-0.67	55.0	40 to 60			0.00	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

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 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY25409

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/14/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/7/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/14/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/5/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/5/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	11/6/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	10/31/2018	SM 2540C		1			10/31/2018	Date

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Comments:

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 744 County Road 87, GSC#8
 Calera, AL 35040
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY25409

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AY25409	Molybdenum, Total	mg/L	0.0000181	0.0044	0.10	0.100	0.0969	0.0995	0.085 to 0.115	100	70 to 130	3.46	20
AY25409	Selenium, Total	mg/L	0.0000183	0.0044	0.10	0.102	0.107	0.114	0.085 to 0.115	102	70 to 130	4.89	20
AY25409	Arsenic, Total	mg/L	0.0000249	0.0022	0.10	0.0993	0.0994	0.105	0.085 to 0.115	99.3	70 to 130	0.145	20
AY25409	Barium, Total	mg/L	0.0000277	0.0044	0.10	0.105	0.0992	0.102	0.085 to 0.115	105	70 to 130	5.83	20
AY25409	Thallium, Total	mg/L	0.0000280	0.00044	0.10	0.0940	0.0935	0.106	0.085 to 0.115	94.0	70 to 130	0.465	20
AY25409	Beryllium, Total	mg/L	0.0000276	0.00132	0.10	0.0875	0.0864	0.102	0.085 to 0.115	87.5	70 to 130	1.27	20
AY25409	Boron, Total	mg/L	0.000868	0.044	1.00	0.996	1.02	0.990	0.85 to 1.15	99.6	70 to 130	2.73	20
AY25409	Cadmium, Total	mg/L	0.0000124	0.00066	0.10	0.0942	0.0973	0.103	0.085 to 0.115	94.2	70 to 130	3.15	20
AY25409	Lithium, Total	mg/L	-0.000272	0.022	0.20	0.202	0.207	0.199	0.17 to 0.23	101	70 to 130	2.28	20
AY25409	Antimony, Total	mg/L	0.0000428	0.00176	0.10	0.0875	0.0888	0.0987	0.085 to 0.115	87.5	70 to 130	1.49	20
AY25409	Chromium, Total	mg/L	0.0000277	0.0044	0.10	0.0983	0.0994	0.101	0.085 to 0.115	98.3	70 to 130	1.04	20
AY25409	Calcium, Total	mg/L	0.00342	0.22	5.00	5.01	5.10	4.91	4.25 to 5.75	100	70 to 130	1.80	20
AY25409	Cobalt, Total	mg/L	0.0000230	0.0044	0.10	0.100	0.0983	0.103	0.085 to 0.115	100	70 to 130	1.84	20
AY25409	Lead, Total	mg/L	0.0000303	0.0022	0.10	0.0948	0.0947	0.101	0.085 to 0.115	94.8	70 to 130	0.142	20
AY25409	Mercury, Total by CVAA	mg/L	0.0000623	0.0005	0.004	0.00386	0.00378	0.00381	0.0034 to 0.0046	96.5	70 to 130	2.09	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 24-Oct-18
 Customer ID:
 Delivery Date: 25-Oct-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY25409

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Limit	
AY25409	Solids, Dissolved	mg/L	-25.0	25			-0.67	55.0	40 to 60	0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information



Chain of Custody

Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA **10/24/2018 17:40**

Requested Complete Date Site Representative Collector	Routine	Results To Requested By Location	Dustin Brooks, Greg Dyer
	Gerson Pickett		Greg Dyer
	Ben Rothschild		Gadsden Ash Pond

Bottles	1	Metals	500 mL	3	TDS	500 mL	5	N/A	N/A	7	N/A	N/A
	2	Hg	250 mL	4	N/A	N/A	6	N/A	N/A	8	N/A	N/A

Comments: Secured groundwater samples in GSC Building 8 shipping lab at 1800 on 24OCT2018. Correcting date of PZ-1 to 10/22/2018 per sample bottle. LBM 10/25/18

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-3	10/22/18	11:44	3	Groundwater		AY25387
MW-4	10/22/2018	12:50	3	Groundwater		AY25388
MW-4 DUP	10/22/2018	12:50	3	Sample Duplicate		AY25389
MW-2	10/22/2018	14:13	3	Groundwater		AY25390
MW-1	10/22/2018	15:06	3	Groundwater		AY25391
MW-10	10/22/2018	16:00	3	Groundwater		AY25392
FB-1	10/22/2018	16:40	3	Field Blank		AY25393
PZ-1	10/22/2018	16:50	3	Groundwater		AY25394
PZ-5	10/23/2018	09:00	3	Groundwater		AY25395
PZ-6	10/23/2018	09:58	3	Groundwater		AY25396
MW-5	10/23/2018	11:03	3	Groundwater		AY25397
MW-6	10/23/2018	12:04	3	Groundwater		AY25398
MW-6 DUP	10/23/2018	12:04	3	Sample Duplicate		AY25399
MW-7	10/23/2018	13:18	3	Groundwater		AY25400
MW-8	10/23/2018	14:17	3	Groundwater		AY25401
MW-9	10/23/2018	15:22	3	Groundwater		AY25402
MW-11	10/23/2018	16:12	3	Groundwater		AY25403
MW-12	10/23/2018	16:58	3	Groundwater		AY25404
FB-2	10/23/2018	17:25	3	Field Blank		AY25405
MW-17	10/24/2018	11:19	3	Groundwater		AY25406
MW-16	10/24/2018	12:51	3	Groundwater		AY25407

Relinquished By	Received By	Date/Time
	Laura Midkiff <small>Digitally signed by Laura Midkiff DN: cn=Laura Midkiff, o=Alabama Power Company, ou=Environmental Affairs, email=lmidkiff@southernco.com, c=US Date: 2018.10.25 07:09:16 -05'00'</small>	10/25/2018 07:09

SmarTroll ID	6496-34170-1-1	All metals and radiological bottles have pH < 2 <input checked="" type="checkbox"/>
Turbidity ID	4677-23343-4-2	
Sample Event	1175	
Cooler Temp	0.7 degrees C	
Thermometer ID	5408-27568-2-2	
pH Strip ID	6959-37696-30-17 & 6959-37695-30-16	



Chain of Custody Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA **10/24/2018 17:40**

Requested Complete Date Site Representative Collector	Routine	Results To	Dustin Brooks, Greg Dyer
	Gerson Pickett	Requested By	Greg Dyer
	Ben Rothschild	Location	Gadsden Ash Pond

Bottles	1 Radium 1 L	3 N/A N/A	5 N/A N/A	7 N/A N/A
	2 Anions 250 mL	4 N/A N/A	6 N/A N/A	8 N/A N/A

Comments: Radium Duplicate Collected at MW-3 and PZ-6.
Secured groundwater samples in GSC Building 8 shipping lab at 1800 on 24OCT2018.

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-3	10/22/18	11:44	4	Groundwater		AY25410
MW-4	10/22/2018	12:50	2	Groundwater		AY25411
MW-4 DUP	10/22/2018	12:50	2	Sample Duplicate		AY25412
MW-2	10/22/2018	14:13	2	Groundwater		AY25413
MW-1	10/22/2018	15:06	2	Groundwater		AY25414
MW-10	10/22/2018	16:00	2	Groundwater		AY25415
FB-1	10/22/2018	16:40	2	Field Blank		AY25416
PZ-1	10/22/2018	16:50	2	Groundwater		AY25417
PZ-5	10/23/2018	09:00	2	Groundwater		AY25418
PZ-6	10/23/2018	09:58	4	Groundwater		AY25419
MW-5	10/23/2018	11:03	2	Groundwater		AY25420
MW-6	10/23/2018	12:04	2	Groundwater		AY25421
MW-6 DUP	10/23/2018	12:04	2	Sample Duplicate		AY25422
MW-7	10/23/2018	13:18	2	Groundwater		AY25423
MW-8	10/23/2018	14:17	2	Groundwater		AY25424
MW-9	10/23/2018	15:22	2	Groundwater		AY25425
MW-11	10/23/2018	16:12	2	Groundwater		AY25426
MW-12	10/23/2018	16:58	2	Groundwater		AY25427
FB-2	10/23/2018	17:25	2	Field Blank		AY25428
MW-17	10/24/2018	11:19	2	Groundwater		AY25429
MW-16	10/24/2018	12:51	2	Groundwater		AY25430

Relinquished By	Received By	Date/Time
	Laura Midkiff <small>Digitally signed by Laura Midkiff, cn=Laura Midkiff, ou=Alabama Power Company, ou=Environmental Affairs, email=lmidkiff@southernco.com, c=US Date: 2018.10.25 07:09:26 -05'00'</small>	10/25/2018 07:09

SmarTroll ID	6496-34170-1-1	All metals and radiological bottles have pH < 2 <input checked="" type="checkbox"/>
Turbidity ID	4677-23343-4-2	
Sample Event	1175	
	Cooler Temp	0.7 degrees C
	Thermometer ID	5408-27568-2-2
	pH Strip ID	6959-37696-30-17 & 6959-37695-30-16

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: 400-161262-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1175

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

11/8/2018 4:55:51 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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results through

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Job ID: 400-161262-1

Laboratory: TestAmerica Pensacola

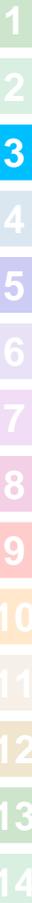
Narrative

Job Narrative 400-161262-1

General Chemistry

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 418722 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: AY25410 MW-3 (400-161262-1), AY25413 MW-2 (400-161262-4), AY25414 MW-1 (400-161262-5), AY25426 MW-11 (400-161262-17), AY25427 MW-12 (400-161262-18), AY25430 MW-16 (400-161262-21) and AY25431 MW-14 (400-161262-22). Elevated reporting limits (RLs) are provided.



Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25410 MW-3

Lab Sample ID: 400-161262-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.9		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.11		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	190		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25411 MW-4

Lab Sample ID: 400-161262-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.6		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.24		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY25412 MW-4 DUP

Lab Sample ID: 400-161262-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.7		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.24		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY25413 MW-2

Lab Sample ID: 400-161262-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.24		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	160		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25414 MW-1

Lab Sample ID: 400-161262-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.6		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	580		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25415 MW-10

Lab Sample ID: 400-161262-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.5		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.10		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY25416 FB-1

Lab Sample ID: 400-161262-7

No Detections.

Client Sample ID: AY25417 PZ-1

Lab Sample ID: 400-161262-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.3		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.13		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	1.7	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25418 PZ-5

Lab Sample ID: 400-161262-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.0		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25418 PZ-5 (Continued)

Lab Sample ID: 400-161262-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY25419 PZ-6

Lab Sample ID: 400-161262-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.1		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY25420 MW-5

Lab Sample ID: 400-161262-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.7		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	18		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25421 MW-6

Lab Sample ID: 400-161262-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.9		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	11		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25422 MW-6 DUP

Lab Sample ID: 400-161262-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	10		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	11		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25423 MW-7

Lab Sample ID: 400-161262-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.0		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.10		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	13		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25424 MW-8

Lab Sample ID: 400-161262-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.4		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.11		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	7.8		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25425 MW-9

Lab Sample ID: 400-161262-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.7		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.13		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	9.4		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25426 MW-11

Lab Sample ID: 400-161262-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.4		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	78		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25427 MW-12

Lab Sample ID: 400-161262-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	280		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25428 FB-2

Lab Sample ID: 400-161262-19

No Detections.

Client Sample ID: AY25429 MW-17

Lab Sample ID: 400-161262-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.0		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.23		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	16		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25430 MW-16

Lab Sample ID: 400-161262-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.3		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.11		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	44		10	2.8	mg/L	2		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25431 MW-14

Lab Sample ID: 400-161262-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.14		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	68		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY25432 EB-1

Lab Sample ID: 400-161262-23

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-161262-1	AY25410 MW-3	Water	10/22/18 11:44	10/29/18 16:45
400-161262-2	AY25411 MW-4	Water	10/22/18 12:50	10/29/18 16:45
400-161262-3	AY25412 MW-4 DUP	Water	10/22/18 12:50	10/29/18 16:45
400-161262-4	AY25413 MW-2	Water	10/22/18 14:13	10/29/18 16:45
400-161262-5	AY25414 MW-1	Water	10/22/18 15:06	10/29/18 16:45
400-161262-6	AY25415 MW-10	Water	10/22/18 16:00	10/29/18 16:45
400-161262-7	AY25416 FB-1	Water	10/22/18 16:40	10/29/18 16:45
400-161262-8	AY25417 PZ-1	Water	10/22/18 16:50	10/29/18 16:45
400-161262-9	AY25418 PZ-5	Water	10/23/18 09:00	10/29/18 16:45
400-161262-10	AY25419 PZ-6	Water	10/23/18 09:58	10/29/18 16:45
400-161262-11	AY25420 MW-5	Water	10/23/18 11:03	10/29/18 16:45
400-161262-12	AY25421 MW-6	Water	10/23/18 12:04	10/29/18 16:45
400-161262-13	AY25422 MW-6 DUP	Water	10/23/18 12:04	10/29/18 16:45
400-161262-14	AY25423 MW-7	Water	10/23/18 13:18	10/29/18 16:45
400-161262-15	AY25424 MW-8	Water	10/23/18 14:17	10/29/18 16:45
400-161262-16	AY25425 MW-9	Water	10/23/18 15:22	10/29/18 16:45
400-161262-17	AY25426 MW-11	Water	10/23/18 16:12	10/29/18 16:45
400-161262-18	AY25427 MW-12	Water	10/23/18 16:58	10/29/18 16:45
400-161262-19	AY25428 FB-2	Water	10/23/18 17:25	10/29/18 16:45
400-161262-20	AY25429 MW-17	Water	10/24/18 11:19	10/29/18 16:45
400-161262-21	AY25430 MW-16	Water	10/24/18 12:51	10/29/18 16:45
400-161262-22	AY25431 MW-14	Water	10/24/18 13:49	10/29/18 16:45
400-161262-23	AY25432 EB-1	Water	10/24/18 14:10	10/29/18 16:45

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25410 MW-3

Lab Sample ID: 400-161262-1

Date Collected: 10/22/18 11:44

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.9		2.0	1.4	mg/L			11/07/18 14:43	1
Fluoride	0.11		0.10	0.032	mg/L			11/01/18 08:16	1
Sulfate	190		50	14	mg/L			11/08/18 08:17	10

Client Sample ID: AY25411 MW-4

Lab Sample ID: 400-161262-2

Date Collected: 10/22/18 12:50

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.6		2.0	1.4	mg/L			11/07/18 14:43	1
Fluoride	0.24		0.10	0.032	mg/L			11/01/18 08:22	1
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 07:52	1

Client Sample ID: AY25412 MW-4 DUP

Lab Sample ID: 400-161262-3

Date Collected: 10/22/18 12:50

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.7		2.0	1.4	mg/L			11/07/18 14:43	1
Fluoride	0.24		0.10	0.032	mg/L			11/01/18 08:24	1
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 07:53	1

Client Sample ID: AY25413 MW-2

Lab Sample ID: 400-161262-4

Date Collected: 10/22/18 14:13

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.8		2.0	1.4	mg/L			11/07/18 14:43	1
Fluoride	0.24		0.10	0.032	mg/L			11/01/18 08:28	1
Sulfate	160		50	14	mg/L			11/08/18 08:17	10

Client Sample ID: AY25414 MW-1

Lab Sample ID: 400-161262-5

Date Collected: 10/22/18 15:06

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.6		2.0	1.4	mg/L			11/07/18 14:43	1
Fluoride	0.070	J	0.10	0.032	mg/L			11/01/18 08:31	1
Sulfate	580		100	28	mg/L			11/08/18 08:17	20

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25415 MW-10

Lab Sample ID: 400-161262-6

Date Collected: 10/22/18 16:00

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.5		2.0	1.4	mg/L			11/07/18 14:43	1
Fluoride	0.10		0.10	0.032	mg/L			11/01/18 08:33	1
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 07:53	1

Client Sample ID: AY25416 FB-1

Lab Sample ID: 400-161262-7

Date Collected: 10/22/18 16:40

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/07/18 14:43	1
Fluoride	<0.032		0.10	0.032	mg/L			11/01/18 08:37	1
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 07:59	1

Client Sample ID: AY25417 PZ-1

Lab Sample ID: 400-161262-8

Date Collected: 10/22/18 16:50

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.3		2.0	1.4	mg/L			11/08/18 10:46	1
Fluoride	0.13		0.10	0.032	mg/L			11/01/18 08:39	1
Sulfate	1.7	J	5.0	1.4	mg/L			11/08/18 07:59	1

Client Sample ID: AY25418 PZ-5

Lab Sample ID: 400-161262-9

Date Collected: 10/23/18 09:00

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.0		2.0	1.4	mg/L			11/08/18 10:49	1
Fluoride	0.040	J	0.10	0.032	mg/L			11/01/18 08:48	1
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 08:00	1

Client Sample ID: AY25419 PZ-6

Lab Sample ID: 400-161262-10

Date Collected: 10/23/18 09:58

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		2.0	1.4	mg/L			11/08/18 10:49	1
Fluoride	0.040	J	0.10	0.032	mg/L			11/01/18 08:53	1
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 08:46	1

Client Sample ID: AY25420 MW-5

Lab Sample ID: 400-161262-11

Date Collected: 10/23/18 11:03

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.7		2.0	1.4	mg/L			11/08/18 10:56	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25420 MW-5

Lab Sample ID: 400-161262-11

Date Collected: 10/23/18 11:03

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.070	J	0.10	0.032	mg/L			11/01/18 08:55	1
Sulfate	18		5.0	1.4	mg/L			11/08/18 08:46	1

Client Sample ID: AY25421 MW-6

Lab Sample ID: 400-161262-12

Date Collected: 10/23/18 12:04

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.9		2.0	1.4	mg/L			11/08/18 10:56	1
Fluoride	0.060	J	0.10	0.032	mg/L			11/01/18 08:59	1
Sulfate	11		5.0	1.4	mg/L			11/08/18 08:46	1

Client Sample ID: AY25422 MW-6 DUP

Lab Sample ID: 400-161262-13

Date Collected: 10/23/18 12:04

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	10		2.0	1.4	mg/L			11/08/18 10:56	1
Fluoride	0.060	J	0.10	0.032	mg/L			11/01/18 09:02	1
Sulfate	11		5.0	1.4	mg/L			11/08/18 08:53	1

Client Sample ID: AY25423 MW-7

Lab Sample ID: 400-161262-14

Date Collected: 10/23/18 13:18

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.0		2.0	1.4	mg/L			11/08/18 10:56	1
Fluoride	0.10		0.10	0.032	mg/L			11/01/18 09:04	1
Sulfate	13		5.0	1.4	mg/L			11/08/18 08:53	1

Client Sample ID: AY25424 MW-8

Lab Sample ID: 400-161262-15

Date Collected: 10/23/18 14:17

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.4		2.0	1.4	mg/L			11/08/18 10:56	1
Fluoride	0.11		0.10	0.032	mg/L			11/01/18 09:06	1
Sulfate	7.8		5.0	1.4	mg/L			11/08/18 08:53	1

Client Sample ID: AY25425 MW-9

Lab Sample ID: 400-161262-16

Date Collected: 10/23/18 15:22

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.7		2.0	1.4	mg/L			11/08/18 10:56	1
Fluoride	0.13		0.10	0.032	mg/L			11/01/18 09:09	1

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25425 MW-9

Lab Sample ID: 400-161262-16

Date Collected: 10/23/18 15:22

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	9.4		5.0	1.4	mg/L			11/08/18 08:53	1

Client Sample ID: AY25426 MW-11

Lab Sample ID: 400-161262-17

Date Collected: 10/23/18 16:12

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.4		2.0	1.4	mg/L			11/08/18 10:56	1
Fluoride	0.060	J	0.10	0.032	mg/L			11/01/18 09:13	1
Sulfate	78		25	7.0	mg/L			11/08/18 09:22	5

Client Sample ID: AY25427 MW-12

Lab Sample ID: 400-161262-18

Date Collected: 10/23/18 16:58

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.8		2.0	1.4	mg/L			11/08/18 10:57	1
Fluoride	0.040	J	0.10	0.032	mg/L			11/01/18 10:50	1
Sulfate	280		100	28	mg/L			11/08/18 09:22	20

Client Sample ID: AY25428 FB-2

Lab Sample ID: 400-161262-19

Date Collected: 10/23/18 17:25

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/08/18 10:57	1
Fluoride	<0.032		0.10	0.032	mg/L			11/01/18 10:58	1
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 08:53	1

Client Sample ID: AY25429 MW-17

Lab Sample ID: 400-161262-20

Date Collected: 10/24/18 11:19

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.0		2.0	1.4	mg/L			11/08/18 12:44	1
Fluoride	0.23		0.10	0.032	mg/L			11/01/18 11:01	1
Sulfate	16		5.0	1.4	mg/L			11/08/18 08:57	1

Client Sample ID: AY25430 MW-16

Lab Sample ID: 400-161262-21

Date Collected: 10/24/18 12:51

Matrix: Water

Date Received: 10/29/18 16:45

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.3		2.0	1.4	mg/L			11/08/18 12:44	1
Fluoride	0.11		0.10	0.032	mg/L			11/01/18 11:05	1
Sulfate	44		10	2.8	mg/L			11/08/18 09:22	2

TestAmerica Pensacola

Client Sample Results

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25431 MW-14

Date Collected: 10/24/18 13:49

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-22

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.8		2.0	1.4	mg/L			11/08/18 12:44	1
Fluoride	0.14		0.10	0.032	mg/L			11/01/18 11:08	1
Sulfate	68		25	7.0	mg/L			11/08/18 09:22	5

Client Sample ID: AY25432 EB-1

Date Collected: 10/24/18 14:10

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-23

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/08/18 12:44	1
Fluoride	<0.032		0.10	0.032	mg/L			11/01/18 11:12	1
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 08:58	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Qualifiers

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25410 MW-3

Date Collected: 10/22/18 11:44

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418722	11/07/18 14:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:16	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	418790	11/08/18 08:17	RRC	TAL PEN

Client Sample ID: AY25411 MW-4

Date Collected: 10/22/18 12:50

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418722	11/07/18 14:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:22	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418790	11/08/18 07:52	RRC	TAL PEN

Client Sample ID: AY25412 MW-4 DUP

Date Collected: 10/22/18 12:50

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418722	11/07/18 14:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:24	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418790	11/08/18 07:53	RRC	TAL PEN

Client Sample ID: AY25413 MW-2

Date Collected: 10/22/18 14:13

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418722	11/07/18 14:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:28	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	418790	11/08/18 08:17	RRC	TAL PEN

Client Sample ID: AY25414 MW-1

Date Collected: 10/22/18 15:06

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418722	11/07/18 14:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:31	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	418790	11/08/18 08:17	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25415 MW-10

Lab Sample ID: 400-161262-6

Date Collected: 10/22/18 16:00

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418722	11/07/18 14:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:33	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418790	11/08/18 07:53	RRC	TAL PEN

Client Sample ID: AY25416 FB-1

Lab Sample ID: 400-161262-7

Date Collected: 10/22/18 16:40

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418722	11/07/18 14:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:37	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418790	11/08/18 07:59	RRC	TAL PEN

Client Sample ID: AY25417 PZ-1

Lab Sample ID: 400-161262-8

Date Collected: 10/22/18 16:50

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:39	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418790	11/08/18 07:59	RRC	TAL PEN

Client Sample ID: AY25418 PZ-5

Lab Sample ID: 400-161262-9

Date Collected: 10/23/18 09:00

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:49	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:48	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418790	11/08/18 08:00	RRC	TAL PEN

Client Sample ID: AY25419 PZ-6

Lab Sample ID: 400-161262-10

Date Collected: 10/23/18 09:58

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:49	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:53	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:46	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25420 MW-5

Lab Sample ID: 400-161262-11

Date Collected: 10/23/18 11:03

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:56	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:46	RRC	TAL PEN

Client Sample ID: AY25421 MW-6

Lab Sample ID: 400-161262-12

Date Collected: 10/23/18 12:04

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:56	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 08:59	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:46	RRC	TAL PEN

Client Sample ID: AY25422 MW-6 DUP

Lab Sample ID: 400-161262-13

Date Collected: 10/23/18 12:04

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:56	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 09:02	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:53	RRC	TAL PEN

Client Sample ID: AY25423 MW-7

Lab Sample ID: 400-161262-14

Date Collected: 10/23/18 13:18

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:56	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 09:04	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:53	RRC	TAL PEN

Client Sample ID: AY25424 MW-8

Lab Sample ID: 400-161262-15

Date Collected: 10/23/18 14:17

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:56	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 09:06	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:53	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25425 MW-9

Lab Sample ID: 400-161262-16

Date Collected: 10/23/18 15:22

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:56	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 09:09	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:53	RRC	TAL PEN

Client Sample ID: AY25426 MW-11

Lab Sample ID: 400-161262-17

Date Collected: 10/23/18 16:12

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:56	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417914	11/01/18 09:13	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	418806	11/08/18 09:22	RRC	TAL PEN

Client Sample ID: AY25427 MW-12

Lab Sample ID: 400-161262-18

Date Collected: 10/23/18 16:58

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:57	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417946	11/01/18 10:50	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	418806	11/08/18 09:22	RRC	TAL PEN

Client Sample ID: AY25428 FB-2

Lab Sample ID: 400-161262-19

Date Collected: 10/23/18 17:25

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418842	11/08/18 10:57	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417946	11/01/18 10:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:53	RRC	TAL PEN

Client Sample ID: AY25429 MW-17

Lab Sample ID: 400-161262-20

Date Collected: 10/24/18 11:19

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418863	11/08/18 12:44	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417946	11/01/18 11:01	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:57	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25430 MW-16

Lab Sample ID: 400-161262-21

Date Collected: 10/24/18 12:51

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418863	11/08/18 12:44	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417946	11/01/18 11:05	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		2	418806	11/08/18 09:22	RRC	TAL PEN

Client Sample ID: AY25431 MW-14

Lab Sample ID: 400-161262-22

Date Collected: 10/24/18 13:49

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418863	11/08/18 12:44	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417946	11/01/18 11:08	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	418806	11/08/18 09:22	RRC	TAL PEN

Client Sample ID: AY25432 EB-1

Lab Sample ID: 400-161262-23

Date Collected: 10/24/18 14:10

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	418863	11/08/18 12:44	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	417946	11/01/18 11:12	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	418806	11/08/18 08:58	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

General Chemistry

Analysis Batch: 417914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-1	AY25410 MW-3	Total/NA	Water	SM 4500 F C	
400-161262-2	AY25411 MW-4	Total/NA	Water	SM 4500 F C	
400-161262-3	AY25412 MW-4 DUP	Total/NA	Water	SM 4500 F C	
400-161262-4	AY25413 MW-2	Total/NA	Water	SM 4500 F C	
400-161262-5	AY25414 MW-1	Total/NA	Water	SM 4500 F C	
400-161262-6	AY25415 MW-10	Total/NA	Water	SM 4500 F C	
400-161262-7	AY25416 FB-1	Total/NA	Water	SM 4500 F C	
400-161262-8	AY25417 PZ-1	Total/NA	Water	SM 4500 F C	
400-161262-9	AY25418 PZ-5	Total/NA	Water	SM 4500 F C	
400-161262-10	AY25419 PZ-6	Total/NA	Water	SM 4500 F C	
400-161262-11	AY25420 MW-5	Total/NA	Water	SM 4500 F C	
400-161262-12	AY25421 MW-6	Total/NA	Water	SM 4500 F C	
400-161262-13	AY25422 MW-6 DUP	Total/NA	Water	SM 4500 F C	
400-161262-14	AY25423 MW-7	Total/NA	Water	SM 4500 F C	
400-161262-15	AY25424 MW-8	Total/NA	Water	SM 4500 F C	
400-161262-16	AY25425 MW-9	Total/NA	Water	SM 4500 F C	
400-161262-17	AY25426 MW-11	Total/NA	Water	SM 4500 F C	
MB 400-417914/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-417914/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-161262-1 MS	AY25410 MW-3	Total/NA	Water	SM 4500 F C	
400-161262-1 MSD	AY25410 MW-3	Total/NA	Water	SM 4500 F C	
400-161262-9 DU	AY25418 PZ-5	Total/NA	Water	SM 4500 F C	

Analysis Batch: 417946

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-18	AY25427 MW-12	Total/NA	Water	SM 4500 F C	
400-161262-19	AY25428 FB-2	Total/NA	Water	SM 4500 F C	
400-161262-20	AY25429 MW-17	Total/NA	Water	SM 4500 F C	
400-161262-21	AY25430 MW-16	Total/NA	Water	SM 4500 F C	
400-161262-22	AY25431 MW-14	Total/NA	Water	SM 4500 F C	
400-161262-23	AY25432 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-417946/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-417946/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-161262-18 MS	AY25427 MW-12	Total/NA	Water	SM 4500 F C	
400-161262-18 MSD	AY25427 MW-12	Total/NA	Water	SM 4500 F C	
400-161260-F-3 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 418722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-1	AY25410 MW-3	Total/NA	Water	SM 4500 Cl- E	
400-161262-2	AY25411 MW-4	Total/NA	Water	SM 4500 Cl- E	
400-161262-3	AY25412 MW-4 DUP	Total/NA	Water	SM 4500 Cl- E	
400-161262-4	AY25413 MW-2	Total/NA	Water	SM 4500 Cl- E	
400-161262-5	AY25414 MW-1	Total/NA	Water	SM 4500 Cl- E	
400-161262-6	AY25415 MW-10	Total/NA	Water	SM 4500 Cl- E	
400-161262-7	AY25416 FB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-418722/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-418722/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-418722/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-161261-B-4 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-161261-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Analysis Batch: 418790

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-1	AY25410 MW-3	Total/NA	Water	SM 4500 SO4 E	
400-161262-2	AY25411 MW-4	Total/NA	Water	SM 4500 SO4 E	
400-161262-3	AY25412 MW-4 DUP	Total/NA	Water	SM 4500 SO4 E	
400-161262-4	AY25413 MW-2	Total/NA	Water	SM 4500 SO4 E	
400-161262-5	AY25414 MW-1	Total/NA	Water	SM 4500 SO4 E	
400-161262-6	AY25415 MW-10	Total/NA	Water	SM 4500 SO4 E	
400-161262-7	AY25416 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-161262-8	AY25417 PZ-1	Total/NA	Water	SM 4500 SO4 E	
400-161262-9	AY25418 PZ-5	Total/NA	Water	SM 4500 SO4 E	
MB 400-418790/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-418790/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-418790/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-161262-8 MS	AY25417 PZ-1	Total/NA	Water	SM 4500 SO4 E	
400-161262-8 MSD	AY25417 PZ-1	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 418806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-10	AY25419 PZ-6	Total/NA	Water	SM 4500 SO4 E	
400-161262-11	AY25420 MW-5	Total/NA	Water	SM 4500 SO4 E	
400-161262-12	AY25421 MW-6	Total/NA	Water	SM 4500 SO4 E	
400-161262-13	AY25422 MW-6 DUP	Total/NA	Water	SM 4500 SO4 E	
400-161262-14	AY25423 MW-7	Total/NA	Water	SM 4500 SO4 E	
400-161262-15	AY25424 MW-8	Total/NA	Water	SM 4500 SO4 E	
400-161262-16	AY25425 MW-9	Total/NA	Water	SM 4500 SO4 E	
400-161262-17	AY25426 MW-11	Total/NA	Water	SM 4500 SO4 E	
400-161262-18	AY25427 MW-12	Total/NA	Water	SM 4500 SO4 E	
400-161262-19	AY25428 FB-2	Total/NA	Water	SM 4500 SO4 E	
400-161262-20	AY25429 MW-17	Total/NA	Water	SM 4500 SO4 E	
400-161262-21	AY25430 MW-16	Total/NA	Water	SM 4500 SO4 E	
400-161262-22	AY25431 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-161262-23	AY25432 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-418806/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-418806/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-418806/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-161262-10 MS	AY25419 PZ-6	Total/NA	Water	SM 4500 SO4 E	
400-161262-10 MSD	AY25419 PZ-6	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 418842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-8	AY25417 PZ-1	Total/NA	Water	SM 4500 CI- E	
400-161262-9	AY25418 PZ-5	Total/NA	Water	SM 4500 CI- E	
400-161262-10	AY25419 PZ-6	Total/NA	Water	SM 4500 CI- E	
400-161262-11	AY25420 MW-5	Total/NA	Water	SM 4500 CI- E	
400-161262-12	AY25421 MW-6	Total/NA	Water	SM 4500 CI- E	
400-161262-13	AY25422 MW-6 DUP	Total/NA	Water	SM 4500 CI- E	
400-161262-14	AY25423 MW-7	Total/NA	Water	SM 4500 CI- E	
400-161262-15	AY25424 MW-8	Total/NA	Water	SM 4500 CI- E	
400-161262-16	AY25425 MW-9	Total/NA	Water	SM 4500 CI- E	
400-161262-17	AY25426 MW-11	Total/NA	Water	SM 4500 CI- E	
400-161262-18	AY25427 MW-12	Total/NA	Water	SM 4500 CI- E	
400-161262-19	AY25428 FB-2	Total/NA	Water	SM 4500 CI- E	
MB 400-418842/6	Method Blank	Total/NA	Water	SM 4500 CI- E	
LCS 400-418842/7	Lab Control Sample	Total/NA	Water	SM 4500 CI- E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
SDG: Gadsden Ash Pond 1175

General Chemistry (Continued)

Analysis Batch: 418842 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 400-418842/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-161262-8 MS	AY25417 PZ-1	Total/NA	Water	SM 4500 Cl- E	
400-161262-8 MSD	AY25417 PZ-1	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 418863

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-20	AY25429 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-161262-21	AY25430 MW-16	Total/NA	Water	SM 4500 Cl- E	
400-161262-22	AY25431 MW-14	Total/NA	Water	SM 4500 Cl- E	
400-161262-23	AY25432 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-418863/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-418863/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-418863/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-161260-F-1 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-161260-F-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-418722/6
Matrix: Water
Analysis Batch: 418722

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/07/18 14:33	1

Lab Sample ID: LCS 400-418722/7
Matrix: Water
Analysis Batch: 418722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	33.0		mg/L		110	90 - 110

Lab Sample ID: MRL 400-418722/3
Matrix: Water
Analysis Batch: 418722

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.11		mg/L		105	50 - 150

Lab Sample ID: 400-161261-B-4 MS
Matrix: Water
Analysis Batch: 418722

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	<1.4	F1	10.0	12.6	F1	mg/L		126	73 - 120

Lab Sample ID: 400-161261-B-4 MSD
Matrix: Water
Analysis Batch: 418722

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	<1.4	F1	10.0	12.3	F1	mg/L		123	73 - 120	2	8

Lab Sample ID: MB 400-418842/6
Matrix: Water
Analysis Batch: 418842

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/08/18 10:46	1

Lab Sample ID: LCS 400-418842/7
Matrix: Water
Analysis Batch: 418842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.5		mg/L		105	90 - 110

Lab Sample ID: MRL 400-418842/3
Matrix: Water
Analysis Batch: 418842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.26	J	mg/L		63	50 - 150

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Lab Sample ID: 400-161262-8 MS
Matrix: Water
Analysis Batch: 418842

Client Sample ID: AY25417 PZ-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.3		10.0	14.5		mg/L		111	73 - 120

Lab Sample ID: 400-161262-8 MSD
Matrix: Water
Analysis Batch: 418842

Client Sample ID: AY25417 PZ-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.3		10.0	14.5		mg/L		111	73 - 120	0	8

Lab Sample ID: MB 400-418863/6
Matrix: Water
Analysis Batch: 418863

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/08/18 12:41	1

Lab Sample ID: LCS 400-418863/7
Matrix: Water
Analysis Batch: 418863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.1		mg/L		107	90 - 110

Lab Sample ID: MRL 400-418863/3
Matrix: Water
Analysis Batch: 418863

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.43	J	mg/L		72	50 - 150

Lab Sample ID: 400-161260-F-1 MS
Matrix: Water
Analysis Batch: 418863

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.8		10.0	18.8		mg/L		110	73 - 120

Lab Sample ID: 400-161260-F-1 MSD
Matrix: Water
Analysis Batch: 418863

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7.8		10.0	19.3		mg/L		115	73 - 120	3	8

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-417914/3
Matrix: Water
Analysis Batch: 417914

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			11/01/18 08:01	1

Lab Sample ID: LCS 400-417914/4
Matrix: Water
Analysis Batch: 417914

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.26		mg/L		107	90 - 110

Lab Sample ID: 400-161262-1 MS
Matrix: Water
Analysis Batch: 417914

Client Sample ID: AY25410 MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.11		1.00	1.21		mg/L		110	75 - 125

Lab Sample ID: 400-161262-1 MSD
Matrix: Water
Analysis Batch: 417914

Client Sample ID: AY25410 MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.11		1.00	1.21		mg/L		110	75 - 125	0	4

Lab Sample ID: 400-161262-9 DU
Matrix: Water
Analysis Batch: 417914

Client Sample ID: AY25418 PZ-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	DU Result	DU Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.040	J		0.0400	J	mg/L				0	4

Lab Sample ID: MB 400-417946/3
Matrix: Water
Analysis Batch: 417946

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			11/01/18 10:34	1

Lab Sample ID: LCS 400-417946/4
Matrix: Water
Analysis Batch: 417946

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	4.26		mg/L		107	90 - 110

Lab Sample ID: 400-161262-18 MS
Matrix: Water
Analysis Batch: 417946

Client Sample ID: AY25427 MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.040	J	1.00	1.12		mg/L		108	75 - 125

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

Lab Sample ID: 400-161262-18 MSD
Matrix: Water
Analysis Batch: 417946

Client Sample ID: AY25427 MW-12
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.040	J	1.00	1.12		mg/L		108	75 - 125	0	4

Lab Sample ID: 400-161260-F-3 DU
Matrix: Water
Analysis Batch: 417946

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	<0.032		<0.032		mg/L		NC	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-418790/6
Matrix: Water
Analysis Batch: 418790

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 07:46	1

Lab Sample ID: LCS 400-418790/7
Matrix: Water
Analysis Batch: 418790

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.3		mg/L		95	90 - 110

Lab Sample ID: MRL 400-418790/3
Matrix: Water
Analysis Batch: 418790

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.18	J	mg/L		84	50 - 150

Lab Sample ID: 400-161262-8 MS
Matrix: Water
Analysis Batch: 418790

Client Sample ID: AY25417 PZ-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.7	J	10.0	12.0		mg/L		103	77 - 128

Lab Sample ID: 400-161262-8 MSD
Matrix: Water
Analysis Batch: 418790

Client Sample ID: AY25417 PZ-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1.7	J	10.0	12.1		mg/L		104	77 - 128	0	5

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

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

Lab Sample ID: MB 400-418806/6
Matrix: Water
Analysis Batch: 418806

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			11/08/18 08:46	1

Lab Sample ID: LCS 400-418806/7
Matrix: Water
Analysis Batch: 418806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.4		mg/L		96	90 - 110

Lab Sample ID: MRL 400-418806/3
Matrix: Water
Analysis Batch: 418806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.11	J	mg/L		82	50 - 150

Lab Sample ID: 400-161262-10 MS
Matrix: Water
Analysis Batch: 418806

Client Sample ID: AY25419 PZ-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<1.4		10.0	11.2		mg/L		112	77 - 128

Lab Sample ID: 400-161262-10 MSD
Matrix: Water
Analysis Batch: 418806

Client Sample ID: AY25419 PZ-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<1.4		10.0	11.1		mg/L		111	77 - 128	1	5

Chain of Custody Record

Client Information		Lab PM: Whitmire, Cheyenne R.		Carrier Tracking No(s):		COC No: 400-56525-24537.1	
Client Contact: Laura Midkiff		E-Mail: cheyenne.whitmire@testamericainc.com		Page: Page 1 of 2		Job #:	
Company: Alabama Power General Test Laboratory		Address: 7444 County Rd 87, GSC #8		City: Callera		State, Zip: AL, 35040	
Phone: 205-664-6197(Tel)		PO #: 40007143		WO #: 40007143		Project Name: Gadsden Ash Pond 1175	
Email: lbmidkiff@southernco.com		CCR		Site		Site	
Due Date Requested:		TAT Requested (days):		Routine		Analysis Requested	
Sample Date		Sample Time		Sample Type (C=Comp, G=Grab)		Matrix (Water, Solid, Onsite, Air, Acid)	
Sample Identification		Sample Date		Sample Time		Sample Type	
AY25410		10/22/18		11:44		G Water	
AY25411		10/22/18		12:50		G Water	
AY25412		10/22/18		12:50		G Water	
AY25413		10/22/18		14:13		G Water	
AY25414		10/22/18		15:06		G Water	
AY25415		10/22/18		16:00		G Water	
AY25416		10/22/18		16:40		G Water	
AY25417		10/22/18		16:50		G Water	
AY25418		10/23/18		9:00		G Water	
AY25419		10/23/18		09:58		G Water	
AY25420		10/23/18		11:03		G Water	
AY25421		10/23/18		12:04		G Water	
AY25422		10/23/18		12:04		G Water	
AY25423		10/23/18		13:18		G Water	
AY25424		10/23/18		14:17		G Water	
AY25425		10/23/18		15:22		G Water	
AY25426		10/23/18		16:12		G Water	
AY25427		10/23/18		16:58		G Water	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Empty Kit Relinquished by:		Date/Time: 10/25/2018 12:00		Date:		Time:	
Relinquished by: Laura Midkiff		Company: APC		Date/Time: 10/29/18 16:45		Company: [Signature]	
Relinquished by:		Company:		Date/Time: 10/30/18 09:38		Company: [Signature]	
Relinquished by:		Company:		Date/Time:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 21.6°C, 21.7°C		Method of Shipment:	



TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record



Client Information		Lab P/N: Whitmire, Cheyenne R		Carrier Tracking Note(s):	
Sampler: Ben Rothschild Phone: Laura Midkiff Client Contact: Laura Midkiff Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL 35040 Phone: 205-664-6197 (Tel) Email: lmidkiff@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1175		Lab P/N: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com		COC No: 400-56525-24537.1 Page: Page 2 of 2 Job #:	
Due Date Requested:		Analysis Requested			
TAT Requested (days):		Perform MS/MSD (Yes or No)			
PO #:		Field Filtered Sample (Yes or No)			
WO #:		SM 4500 F C			
Project #:		SM 4500 Cl E			
CCR:		SM 4500 S04 E			
Site:		9315_Ra226_9320_Ra228_Ra226Ra228_GFPCC			
Gadsden Ash Pond 1175		Total Number of Containers			
		Special Instructions/Note:			
		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 X - EDTA Y - EDA Z - other (specify)			
		Other:			
		<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological <input type="checkbox"/> Deliverable Requested: I, II, III, V, Other (specify)			
		<input type="checkbox"/> Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
		Special Instructions/QC Requirements:			
		Empty Kit Relinquished by: _____ Date: _____ Relinquished by: Laura Midkiff Date/Time: 10/25/2018 12:00 Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____			
		Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____			
		Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks:			



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-161262-1
SDG Number: Gadsden Ash Pond 1175

Login Number: 161262

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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, 21.6°C, 21.7°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	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-1
 SDG: Gadsden Ash Pond 1175

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	10-09-19
Iowa	State Program	7	367	08-01-20
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	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	12-31-18
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	06-30-19
Tennessee	State Program	4	TN02907	06-30-19
Texas	NELAP	6	T104704286-18-16	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

* 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: 400-161262-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1175

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

11/27/2018 11:37:19 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
SDG: Gadsden Ash Pond 1175

Job ID: 400-161262-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-161262-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-398725: The following samples were prepared at a reduced aliquot due to limited sample volume. AY25410 MW-3 (400-161262-1), AY25410 MW-3 (400-161262-1[DU]), AY25411 MW-4 (400-161262-2), AY25412 MW-4 DUP (400-161262-3), AY25413 MW-2 (400-161262-4), AY25414 MW-1 (400-161262-5), AY25415 MW-10 (400-161262-6), AY25416 FB-1 (400-161262-7), AY25417 PZ-1 (400-161262-8), AY25418 PZ-5 (400-161262-9), AY25419 PZ-6 (400-161262-10), AY25419 PZ-6 (400-161262-10[DU]), AY25420 MW-5 (400-161262-11), AY25421 MW-6 (400-161262-12), AY25422 MW-6 DUP (400-161262-13), AY25423 MW-7 (400-161262-14), AY25424 MW-8 (400-161262-15), AY25425 MW-9 (400-161262-16), AY25426 MW-11 (400-161262-17), AY25427 MW-12 (400-161262-18), AY25428 FB-2 (400-161262-19) and AY25429 MW-17 (400-161262-20)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-398750: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: AY25430 MW-16 (400-161262-21), AY25431 MW-14 (400-161262-22) and AY25432 EB-1 (400-161262-23). 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 160-398708: The following samples were prepared at a reduced aliquot due to limited sample volume. AY25410 MW-3 (400-161262-1), AY25410 MW-3 (400-161262-1[DU]), AY25411 MW-4 (400-161262-2), AY25412 MW-4 DUP (400-161262-3), AY25413 MW-2 (400-161262-4), AY25414 MW-1 (400-161262-5), AY25415 MW-10 (400-161262-6), AY25416 FB-1 (400-161262-7), AY25417 PZ-1 (400-161262-8), AY25418 PZ-5 (400-161262-9), AY25419 PZ-6 (400-161262-10), AY25419 PZ-6 (400-161262-10[DU]), AY25420 MW-5 (400-161262-11), AY25421 MW-6 (400-161262-12), AY25422 MW-6 DUP (400-161262-13), AY25423 MW-7 (400-161262-14), AY25424 MW-8 (400-161262-15), AY25425 MW-9 (400-161262-16), AY25426 MW-11 (400-161262-17), AY25427 MW-12 (400-161262-18), AY25428 FB-2 (400-161262-19) and AY25429 MW-17 (400-161262-20)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-398737: Insufficient sample volume was available to perform a sample duplicate (DUP) for the following samples: AY25430 MW-16 (400-161262-21), AY25431 MW-14 (400-161262-22) and AY25432 EB-1 (400-161262-23). A laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) were prepared instead to demonstrate batch precision.

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
SDG: Gadsden Ash Pond 1175

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
SDG: Gadsden Ash Pond 1175

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-161262-1	AY25410 MW-3	Water	10/22/18 11:44	10/29/18 16:45
400-161262-2	AY25411 MW-4	Water	10/22/18 12:50	10/29/18 16:45
400-161262-3	AY25412 MW-4 DUP	Water	10/22/18 12:50	10/29/18 16:45
400-161262-4	AY25413 MW-2	Water	10/22/18 14:13	10/29/18 16:45
400-161262-5	AY25414 MW-1	Water	10/22/18 15:06	10/29/18 16:45
400-161262-6	AY25415 MW-10	Water	10/22/18 16:00	10/29/18 16:45
400-161262-7	AY25416 FB-1	Water	10/22/18 16:40	10/29/18 16:45
400-161262-8	AY25417 PZ-1	Water	10/22/18 16:50	10/29/18 16:45
400-161262-9	AY25418 PZ-5	Water	10/23/18 09:00	10/29/18 16:45
400-161262-10	AY25419 PZ-6	Water	10/23/18 09:58	10/29/18 16:45
400-161262-11	AY25420 MW-5	Water	10/23/18 11:03	10/29/18 16:45
400-161262-12	AY25421 MW-6	Water	10/23/18 12:04	10/29/18 16:45
400-161262-13	AY25422 MW-6 DUP	Water	10/23/18 12:04	10/29/18 16:45
400-161262-14	AY25423 MW-7	Water	10/23/18 13:18	10/29/18 16:45
400-161262-15	AY25424 MW-8	Water	10/23/18 14:17	10/29/18 16:45
400-161262-16	AY25425 MW-9	Water	10/23/18 15:22	10/29/18 16:45
400-161262-17	AY25426 MW-11	Water	10/23/18 16:12	10/29/18 16:45
400-161262-18	AY25427 MW-12	Water	10/23/18 16:58	10/29/18 16:45
400-161262-19	AY25428 FB-2	Water	10/23/18 17:25	10/29/18 16:45
400-161262-20	AY25429 MW-17	Water	10/24/18 11:19	10/29/18 16:45
400-161262-21	AY25430 MW-16	Water	10/24/18 12:51	10/29/18 16:45
400-161262-22	AY25431 MW-14	Water	10/24/18 13:49	10/29/18 16:45
400-161262-23	AY25432 EB-1	Water	10/24/18 14:10	10/29/18 16:45

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25410 MW-3

Lab Sample ID: 400-161262-1

Date Collected: 10/22/18 11:44

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.404		0.166	0.170	1.00	0.163	pCi/L	11/01/18 09:28	11/24/18 13:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/01/18 09:28	11/24/18 13:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.345	U	0.349	0.350	1.00	0.568	pCi/L	11/01/18 10:54	11/21/18 16:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/01/18 10:54	11/21/18 16:35	1
Y Carrier	86.0		40 - 110					11/01/18 10:54	11/21/18 16:35	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.749		0.386	0.389	5.00	0.568	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25411 MW-4

Lab Sample ID: 400-161262-2

Date Collected: 10/22/18 12:50

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.589		0.193	0.200	1.00	0.158	pCi/L	11/01/18 09:28	11/24/18 13:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					11/01/18 09:28	11/24/18 13:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.472	U	0.355	0.358	1.00	0.559	pCi/L	11/01/18 10:54	11/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					11/01/18 10:54	11/21/18 16:36	1
Y Carrier	79.6		40 - 110					11/01/18 10:54	11/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.06		0.404	0.410	5.00	0.559	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25412 MW-4 DUP

Lab Sample ID: 400-161262-3

Date Collected: 10/22/18 12:50

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.676		0.212	0.221	1.00	0.176	pCi/L	11/01/18 09:28	11/24/18 13:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					11/01/18 09:28	11/24/18 13:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.252	U	0.343	0.344	1.00	0.571	pCi/L	11/01/18 10:54	11/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					11/01/18 10:54	11/21/18 16:36	1
Y Carrier	85.2		40 - 110					11/01/18 10:54	11/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.928		0.403	0.409	5.00	0.571	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25413 MW-2

Lab Sample ID: 400-161262-4

Date Collected: 10/22/18 14:13

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.380		0.166	0.170	1.00	0.166	pCi/L	11/01/18 09:28	11/24/18 13:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					11/01/18 09:28	11/24/18 13:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.616		0.370	0.374	1.00	0.565	pCi/L	11/01/18 10:54	11/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.2		40 - 110					11/01/18 10:54	11/21/18 16:36	1
Y Carrier	85.2		40 - 110					11/01/18 10:54	11/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.996		0.406	0.411	5.00	0.565	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25414 MW-1

Lab Sample ID: 400-161262-5

Date Collected: 10/22/18 15:06

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.315		0.149	0.152	1.00	0.152	pCi/L	11/01/18 09:28	11/24/18 13:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					11/01/18 09:28	11/24/18 13:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.376	U	0.304	0.306	1.00	0.479	pCi/L	11/01/18 10:54	11/21/18 16:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					11/01/18 10:54	11/21/18 16:36	1
Y Carrier	86.7		40 - 110					11/01/18 10:54	11/21/18 16:36	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.691		0.339	0.342	5.00	0.479	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25415 MW-10

Lab Sample ID: 400-161262-6

Date Collected: 10/22/18 16:00

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.452		0.168	0.173	1.00	0.148	pCi/L	11/01/18 09:28	11/24/18 13:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					11/01/18 09:28	11/24/18 13:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0922	U	0.267	0.268	1.00	0.496	pCi/L	11/01/18 10:54	11/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					11/01/18 10:54	11/21/18 16:37	1
Y Carrier	85.2		40 - 110					11/01/18 10:54	11/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.360	U	0.315	0.319	5.00	0.496	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25416 FB-1

Lab Sample ID: 400-161262-7

Date Collected: 10/22/18 16:40

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.188		0.120	0.121	1.00	0.146	pCi/L	11/01/18 09:28	11/24/18 13:13	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					11/01/18 09:28	11/24/18 13:13	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.386	U	0.325	0.327	1.00	0.519	pCi/L	11/01/18 10:54	11/21/18 16:37	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					11/01/18 10:54	11/21/18 16:37	1
Y Carrier	81.5		40 - 110					11/01/18 10:54	11/21/18 16:37	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.574		0.346	0.349	5.00	0.519	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25417 PZ-1

Lab Sample ID: 400-161262-8

Date Collected: 10/22/18 16:50

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.470		0.191	0.195	1.00	0.195	pCi/L	11/01/18 09:28	11/24/18 13:14	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					11/01/18 09:28	11/24/18 13:14	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.151	U	0.302	0.302	1.00	0.516	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	86.7		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.621		0.357	0.359	5.00	0.516	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25418 PZ-5

Lab Sample ID: 400-161262-9

Date Collected: 10/23/18 09:00

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.229		0.151	0.152	1.00	0.202	pCi/L	11/01/18 09:28	11/24/18 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110					11/01/18 09:28	11/24/18 13:03	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.154	U	0.272	0.272	1.00	0.463	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	86.7		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.383	U	0.311	0.312	5.00	0.463	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25419 PZ-6

Lab Sample ID: 400-161262-10

Date Collected: 10/23/18 09:58

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.313		0.160	0.162	1.00	0.191	pCi/L	11/01/18 09:28	11/24/18 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/01/18 09:28	11/24/18 13:03	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0391	U	0.288	0.288	1.00	0.509	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	86.0		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.352	U	0.329	0.330	5.00	0.509	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25420 MW-5

Lab Sample ID: 400-161262-11

Date Collected: 10/23/18 11:03

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.521		0.200	0.205	1.00	0.204	pCi/L	11/01/18 09:28	11/24/18 13:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					11/01/18 09:28	11/24/18 13:03	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.486		0.293	0.297	1.00	0.442	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.2		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	87.9		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.01		0.355	0.361	5.00	0.442	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25421 MW-6

Lab Sample ID: 400-161262-12

Date Collected: 10/23/18 12:04

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.308		0.164	0.166	1.00	0.193	pCi/L	11/01/18 09:28	11/24/18 13:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					11/01/18 09:28	11/24/18 13:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0653	U	0.290	0.290	1.00	0.538	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	88.8		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	82.6		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.243	U	0.333	0.334	5.00	0.538	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25422 MW-6 DUP

Lab Sample ID: 400-161262-13

Date Collected: 10/23/18 12:04

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.437		0.197	0.200	1.00	0.211	pCi/L	11/01/18 09:28	11/24/18 13:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/01/18 09:28	11/24/18 13:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0195	U	0.287	0.287	1.00	0.510	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	86.4		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.456	U	0.348	0.350	5.00	0.510	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25423 MW-7

Lab Sample ID: 400-161262-14

Date Collected: 10/23/18 13:18

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.470		0.189	0.194	1.00	0.194	pCi/L	11/01/18 09:28	11/24/18 13:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110					11/01/18 09:28	11/24/18 13:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.233	U	0.316	0.317	1.00	0.527	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	81.5		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.703		0.368	0.372	5.00	0.527	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25424 MW-8

Lab Sample ID: 400-161262-15

Date Collected: 10/23/18 14:17

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.306		0.155	0.157	1.00	0.173	pCi/L	11/01/18 09:28	11/24/18 13:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					11/01/18 09:28	11/24/18 13:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0120	U	0.277	0.277	1.00	0.499	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	83.7		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.319	U	0.317	0.318	5.00	0.499	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25425 MW-9

Lab Sample ID: 400-161262-16

Date Collected: 10/23/18 15:22

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.314		0.167	0.169	1.00	0.205	pCi/L	11/01/18 09:28	11/24/18 13:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					11/01/18 09:28	11/24/18 13:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0811	U	0.276	0.276	1.00	0.485	pCi/L	11/01/18 10:54	11/21/18 16:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					11/01/18 10:54	11/21/18 16:38	1
Y Carrier	83.7		40 - 110					11/01/18 10:54	11/21/18 16:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.395	U	0.323	0.324	5.00	0.485	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25426 MW-11

Lab Sample ID: 400-161262-17

Date Collected: 10/23/18 16:12

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.549		0.196	0.202	1.00	0.180	pCi/L	11/01/18 09:28	11/24/18 13:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					11/01/18 09:28	11/24/18 13:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.748		0.379	0.385	1.00	0.558	pCi/L	11/01/18 10:54	11/21/18 16:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					11/01/18 10:54	11/21/18 16:39	1
Y Carrier	79.6		40 - 110					11/01/18 10:54	11/21/18 16:39	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.30		0.427	0.435	5.00	0.558	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25427 MW-12

Lab Sample ID: 400-161262-18

Date Collected: 10/23/18 16:58

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.377		0.180	0.183	1.00	0.217	pCi/L	11/01/18 09:28	11/24/18 13:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					11/01/18 09:28	11/24/18 13:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.419	U	0.298	0.300	1.00	0.462	pCi/L	11/01/18 10:54	11/21/18 16:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					11/01/18 10:54	11/21/18 16:40	1
Y Carrier	86.4		40 - 110					11/01/18 10:54	11/21/18 16:40	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.796		0.348	0.351	5.00	0.462	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25428 FB-2

Lab Sample ID: 400-161262-19

Date Collected: 10/23/18 17:25

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.292		0.160	0.162	1.00	0.197	pCi/L	11/01/18 09:28	11/24/18 13:04	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					11/01/18 09:28	11/24/18 13:04	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.264	U	0.308	0.309	1.00	0.508	pCi/L	11/01/18 10:54	11/21/18 16:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					11/01/18 10:54	11/21/18 16:40	1
Y Carrier	84.9		40 - 110					11/01/18 10:54	11/21/18 16:40	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.556		0.347	0.349	5.00	0.508	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25429 MW-17

Lab Sample ID: 400-161262-20

Date Collected: 10/24/18 11:19

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.432		0.174	0.178	1.00	0.176	pCi/L	11/01/18 09:28	11/24/18 13:05	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					11/01/18 09:28	11/24/18 13:05	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.262	U	0.298	0.299	1.00	0.489	pCi/L	11/01/18 10:54	11/21/18 16:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					11/01/18 10:54	11/21/18 16:40	1
Y Carrier	83.0		40 - 110					11/01/18 10:54	11/21/18 16:40	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.694		0.345	0.348	5.00	0.489	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25430 MW-16

Lab Sample ID: 400-161262-21

Date Collected: 10/24/18 12:51

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.232		0.117	0.119	1.00	0.136	pCi/L	11/01/18 12:01	11/24/18 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					11/01/18 12:01	11/24/18 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.332	U	0.315	0.316	1.00	0.509	pCi/L	11/01/18 13:13	11/19/18 10:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					11/01/18 13:13	11/19/18 10:09	1
Y Carrier	81.1		40 - 110					11/01/18 13:13	11/19/18 10:09	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.564		0.336	0.338	5.00	0.509	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25431 MW-14

Lab Sample ID: 400-161262-22

Date Collected: 10/24/18 13:49

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.448		0.145	0.151	1.00	0.118	pCi/L	11/01/18 12:01	11/24/18 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					11/01/18 12:01	11/24/18 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.694		0.364	0.370	1.00	0.544	pCi/L	11/01/18 13:13	11/19/18 10:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					11/01/18 13:13	11/19/18 10:09	1
Y Carrier	77.8		40 - 110					11/01/18 13:13	11/19/18 10:09	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.14		0.392	0.400	5.00	0.544	pCi/L		11/26/18 15:23	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25432 EB-1

Lab Sample ID: 400-161262-23

Date Collected: 10/24/18 14:10

Matrix: Water

Date Received: 10/29/18 16:45

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.270		0.128	0.130	1.00	0.141	pCi/L	11/01/18 12:01	11/24/18 13:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					11/01/18 12:01	11/24/18 13:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.607	U	0.437	0.440	1.00	0.690	pCi/L	11/01/18 13:13	11/19/18 10:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.1		40 - 110					11/01/18 13:13	11/19/18 10:09	1
Y Carrier	79.3		40 - 110					11/01/18 13:13	11/19/18 10:09	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.877		0.455	0.459	5.00	0.690	pCi/L		11/26/18 15:23	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
SDG: Gadsden Ash Pond 1175

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25410 MW-3

Date Collected: 10/22/18 11:44

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402364	11/24/18 13:13	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402010	11/21/18 16:35	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25411 MW-4

Date Collected: 10/22/18 12:50

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402364	11/24/18 13:13	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402010	11/21/18 16:36	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25412 MW-4 DUP

Date Collected: 10/22/18 12:50

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402364	11/24/18 13:13	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402010	11/21/18 16:36	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25413 MW-2

Date Collected: 10/22/18 14:13

Date Received: 10/29/18 16:45

Lab Sample ID: 400-161262-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402364	11/24/18 13:13	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402010	11/21/18 16:36	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25414 MW-1

Lab Sample ID: 400-161262-5

Date Collected: 10/22/18 15:06

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402364	11/24/18 13:13	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402010	11/21/18 16:36	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25415 MW-10

Lab Sample ID: 400-161262-6

Date Collected: 10/22/18 16:00

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402364	11/24/18 13:13	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:37	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25416 FB-1

Lab Sample ID: 400-161262-7

Date Collected: 10/22/18 16:40

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402364	11/24/18 13:13	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:37	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25417 PZ-1

Lab Sample ID: 400-161262-8

Date Collected: 10/22/18 16:50

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402364	11/24/18 13:14	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25418 PZ-5

Lab Sample ID: 400-161262-9

Date Collected: 10/23/18 09:00

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:03	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25419 PZ-6

Lab Sample ID: 400-161262-10

Date Collected: 10/23/18 09:58

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:03	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25420 MW-5

Lab Sample ID: 400-161262-11

Date Collected: 10/23/18 11:03

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:03	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25421 MW-6

Lab Sample ID: 400-161262-12

Date Collected: 10/23/18 12:04

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:04	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25422 MW-6 DUP

Lab Sample ID: 400-161262-13

Date Collected: 10/23/18 12:04

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:04	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25423 MW-7

Lab Sample ID: 400-161262-14

Date Collected: 10/23/18 13:18

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:04	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25424 MW-8

Lab Sample ID: 400-161262-15

Date Collected: 10/23/18 14:17

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:04	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25425 MW-9

Lab Sample ID: 400-161262-16

Date Collected: 10/23/18 15:22

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:04	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402011	11/21/18 16:38	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25426 MW-11

Lab Sample ID: 400-161262-17

Date Collected: 10/23/18 16:12

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:04	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402132	11/21/18 16:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25427 MW-12

Lab Sample ID: 400-161262-18

Date Collected: 10/23/18 16:58

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:04	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402132	11/21/18 16:40	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25428 FB-2

Lab Sample ID: 400-161262-19

Date Collected: 10/23/18 17:25

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:04	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402132	11/21/18 16:40	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25429 MW-17

Lab Sample ID: 400-161262-20

Date Collected: 10/24/18 11:19

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398708	11/01/18 09:28	JLC	TAL SL
Total/NA	Analysis	9315		1	402360	11/24/18 13:05	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398725	11/01/18 10:54	JLC	TAL SL
Total/NA	Analysis	9320		1	402132	11/21/18 16:40	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Client Sample ID: AY25430 MW-16

Lab Sample ID: 400-161262-21

Date Collected: 10/24/18 12:51

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398737	11/01/18 12:01	JLC	TAL SL
Total/NA	Analysis	9315		1	402361	11/24/18 13:09	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398750	11/01/18 13:13	JLC	TAL SL
Total/NA	Analysis	9320		1	401582	11/19/18 10:09	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25431 MW-14

Lab Sample ID: 400-161262-22

Date Collected: 10/24/18 13:49

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398737	11/01/18 12:01	JLC	TAL SL
Total/NA	Analysis	9315		1	402361	11/24/18 13:09	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398750	11/01/18 13:13	JLC	TAL SL
Total/NA	Analysis	9320		1	401582	11/19/18 10:09	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	RTM	TAL SL

Client Sample ID: AY25432 EB-1

Lab Sample ID: 400-161262-23

Date Collected: 10/24/18 14:10

Matrix: Water

Date Received: 10/29/18 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			398737	11/01/18 12:01	JLC	TAL SL
Total/NA	Analysis	9315		1	402361	11/24/18 13:09	CDR	TAL SL
Total/NA	Prep	PrecSep_0			398750	11/01/18 13:13	JLC	TAL SL
Total/NA	Analysis	9320		1	401582	11/19/18 10:09	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	402686	11/26/18 15:23	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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Rad

Prep Batch: 398708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-1	AY25410 MW-3	Total/NA	Water	PrecSep-21	
400-161262-2	AY25411 MW-4	Total/NA	Water	PrecSep-21	
400-161262-3	AY25412 MW-4 DUP	Total/NA	Water	PrecSep-21	
400-161262-4	AY25413 MW-2	Total/NA	Water	PrecSep-21	
400-161262-5	AY25414 MW-1	Total/NA	Water	PrecSep-21	
400-161262-6	AY25415 MW-10	Total/NA	Water	PrecSep-21	
400-161262-7	AY25416 FB-1	Total/NA	Water	PrecSep-21	
400-161262-8	AY25417 PZ-1	Total/NA	Water	PrecSep-21	
400-161262-9	AY25418 PZ-5	Total/NA	Water	PrecSep-21	
400-161262-10	AY25419 PZ-6	Total/NA	Water	PrecSep-21	
400-161262-11	AY25420 MW-5	Total/NA	Water	PrecSep-21	
400-161262-12	AY25421 MW-6	Total/NA	Water	PrecSep-21	
400-161262-13	AY25422 MW-6 DUP	Total/NA	Water	PrecSep-21	
400-161262-14	AY25423 MW-7	Total/NA	Water	PrecSep-21	
400-161262-15	AY25424 MW-8	Total/NA	Water	PrecSep-21	
400-161262-16	AY25425 MW-9	Total/NA	Water	PrecSep-21	
400-161262-17	AY25426 MW-11	Total/NA	Water	PrecSep-21	
400-161262-18	AY25427 MW-12	Total/NA	Water	PrecSep-21	
400-161262-19	AY25428 FB-2	Total/NA	Water	PrecSep-21	
400-161262-20	AY25429 MW-17	Total/NA	Water	PrecSep-21	
MB 160-398708/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-398708/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-161262-1 DU	AY25410 MW-3	Total/NA	Water	PrecSep-21	
400-161262-10 DU	AY25419 PZ-6	Total/NA	Water	PrecSep-21	

Prep Batch: 398725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-1	AY25410 MW-3	Total/NA	Water	PrecSep_0	
400-161262-2	AY25411 MW-4	Total/NA	Water	PrecSep_0	
400-161262-3	AY25412 MW-4 DUP	Total/NA	Water	PrecSep_0	
400-161262-4	AY25413 MW-2	Total/NA	Water	PrecSep_0	
400-161262-5	AY25414 MW-1	Total/NA	Water	PrecSep_0	
400-161262-6	AY25415 MW-10	Total/NA	Water	PrecSep_0	
400-161262-7	AY25416 FB-1	Total/NA	Water	PrecSep_0	
400-161262-8	AY25417 PZ-1	Total/NA	Water	PrecSep_0	
400-161262-9	AY25418 PZ-5	Total/NA	Water	PrecSep_0	
400-161262-10	AY25419 PZ-6	Total/NA	Water	PrecSep_0	
400-161262-11	AY25420 MW-5	Total/NA	Water	PrecSep_0	
400-161262-12	AY25421 MW-6	Total/NA	Water	PrecSep_0	
400-161262-13	AY25422 MW-6 DUP	Total/NA	Water	PrecSep_0	
400-161262-14	AY25423 MW-7	Total/NA	Water	PrecSep_0	
400-161262-15	AY25424 MW-8	Total/NA	Water	PrecSep_0	
400-161262-16	AY25425 MW-9	Total/NA	Water	PrecSep_0	
400-161262-17	AY25426 MW-11	Total/NA	Water	PrecSep_0	
400-161262-18	AY25427 MW-12	Total/NA	Water	PrecSep_0	
400-161262-19	AY25428 FB-2	Total/NA	Water	PrecSep_0	
400-161262-20	AY25429 MW-17	Total/NA	Water	PrecSep_0	
MB 160-398725/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-398725/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-161262-1 DU	AY25410 MW-3	Total/NA	Water	PrecSep_0	
400-161262-10 DU	AY25419 PZ-6	Total/NA	Water	PrecSep_0	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
SDG: Gadsden Ash Pond 1175

Prep Batch: 398737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-21	AY25430 MW-16	Total/NA	Water	PrecSep-21	
400-161262-22	AY25431 MW-14	Total/NA	Water	PrecSep-21	
400-161262-23	AY25432 EB-1	Total/NA	Water	PrecSep-21	
MB 160-398737/21-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-398737/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
LCSD 160-398737/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep-21	

Prep Batch: 398750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-161262-21	AY25430 MW-16	Total/NA	Water	PrecSep_0	
400-161262-22	AY25431 MW-14	Total/NA	Water	PrecSep_0	
400-161262-23	AY25432 EB-1	Total/NA	Water	PrecSep_0	
MB 160-398750/21-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-398750/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
LCSD 160-398750/2-A	Lab Control Sample Dup	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-398708/24-A
Matrix: Water
Analysis Batch: 402360

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398708

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2698		0.149	0.151	1.00	0.182	pCi/L	11/01/18 09:28	11/24/18 13:05	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/01/18 09:28	11/24/18 13:05	1

Lab Sample ID: LCS 160-398708/1-A
Matrix: Water
Analysis Batch: 402364

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398708

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	14.49		1.58	1.00	0.192	pCi/L	96	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	101		40 - 110						

Lab Sample ID: 400-161262-1 DU
Matrix: Water
Analysis Batch: 402364

Client Sample ID: AY25410 MW-3
Prep Type: Total/NA
Prep Batch: 398708

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.404		0.4971		0.189	1.00	0.168	pCi/L	0.26	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	96.2		40 - 110							

Lab Sample ID: 400-161262-10 DU
Matrix: Water
Analysis Batch: 402360

Client Sample ID: AY25419 PZ-6
Prep Type: Total/NA
Prep Batch: 398708

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.313		0.4481		0.180	1.00	0.137	pCi/L	0.39	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	95.0		40 - 110							

Lab Sample ID: MB 160-398737/21-A
Matrix: Water
Analysis Batch: 402361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398737

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.2292		0.0924	0.0947	1.00	0.0875	pCi/L	11/01/18 12:01	11/24/18 13:10	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

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

Lab Sample ID: MB 160-398737/21-A
Matrix: Water
Analysis Batch: 402361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398737

Carrier	<i>MB</i> %Yield	<i>MB</i> Qualifier	Limits
Ba Carrier	105		40 - 110

Prepared	Analyzed	Dil Fac
11/01/18 12:01	11/24/18 13:10	1

Lab Sample ID: LCS 160-398737/1-A
Matrix: Water
Analysis Batch: 402360

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398737

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	10.84		1.14	1.00	0.114	pCi/L	95	68 - 137

Carrier	<i>LCS</i> %Yield	<i>LCS</i> Qualifier	Limits
Ba Carrier	103		40 - 110

Lab Sample ID: LCSD 160-398737/2-A
Matrix: Water
Analysis Batch: 402360

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 398737

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	11.4	10.94		1.15	1.00	0.104	pCi/L	96	68 - 137	0.04	1

Carrier	<i>LCSD</i> %Yield	<i>LCSD</i> Qualifier	Limits
Ba Carrier	102		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-398725/24-A
Matrix: Water
Analysis Batch: 402132

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398725

Analyte	<i>MB</i> Result	<i>MB</i> Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.05915	U	0.261	0.261	1.00	0.460	pCi/L	11/01/18 10:54	11/21/18 16:40	1

Carrier	<i>MB</i> %Yield	<i>MB</i> Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	86.7		40 - 110

Prepared	Analyzed	Dil Fac
11/01/18 10:54	11/21/18 16:40	1
11/01/18 10:54	11/21/18 16:40	1

Lab Sample ID: LCS 160-398725/1-A
Matrix: Water
Analysis Batch: 402010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398725

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	12.3	11.76		1.38	1.00	0.468	pCi/L	96	56 - 140

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

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

Lab Sample ID: LCS 160-398725/1-A
Matrix: Water
Analysis Batch: 402010

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398725

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	83.4		40 - 110

Lab Sample ID: 400-161262-1 DU
Matrix: Water
Analysis Batch: 402010

Client Sample ID: AY25410 MW-3
Prep Type: Total/NA
Prep Batch: 398725

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.345	U	0.4300	U	0.334	1.00	0.522	pCi/L	0.12	1

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	96.2		40 - 110
Y Carrier	81.1		40 - 110

Lab Sample ID: 400-161262-10 DU
Matrix: Water
Analysis Batch: 402011

Client Sample ID: AY25419 PZ-6
Prep Type: Total/NA
Prep Batch: 398725

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.0391	U	-0.04094	U	0.280	1.00	0.512	pCi/L	0.14	1

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	95.0		40 - 110
Y Carrier	86.0		40 - 110

Lab Sample ID: MB 160-398750/21-A
Matrix: Water
Analysis Batch: 401582

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398750

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.009633	U	0.252	0.252	1.00	0.452	pCi/L	11/01/18 13:13	11/19/18 10:09	1

	MB	MB		Prepared	Analyzed	Dil Fac
Carrier	%Yield	Qualifier	Limits			
Ba Carrier	105		40 - 110	11/01/18 13:13	11/19/18 10:09	1
Y Carrier	69.2		40 - 110	11/01/18 13:13	11/19/18 10:09	1

Lab Sample ID: LCS 160-398750/1-A
Matrix: Water
Analysis Batch: 401654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398750

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.20	9.263		1.09	1.00	0.406	pCi/L	101	56 - 140

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

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

Lab Sample ID: LCS 160-398750/1-A
Matrix: Water
Analysis Batch: 401654

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398750

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	77.8		40 - 110

Lab Sample ID: LCSD 160-398750/2-A
Matrix: Water
Analysis Batch: 401654

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 398750

Analyte	Spike Added	LCSD Result	LCSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits		RER	RER Limit
									56 - 140	0.16	1	
Radium-228	9.20	9.620		1.13	1.00	0.417	pCi/L	105				

	LCSD	LCSD	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	102		40 - 110
Y Carrier	78.9		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-161262-1 DU
Matrix: Water
Analysis Batch: 402686

Client Sample ID: AY25410 MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
										0.23
Combined Radium 226 + 228	0.749		0.9271		0.384	5.00	0.522	pCi/L		

Lab Sample ID: 400-161262-10 DU
Matrix: Water
Analysis Batch: 402686

Client Sample ID: AY25419 PZ-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
									0.08	
Combined Radium 226 + 228	0.352	U	0.4071	U	0.333	5.00	0.512	pCi/L		

Chain of Custody Record

Client Information		Sampler: Ben Rothschild Phone: Laura Midkiff Lab PM: Whitire, Cheyenne R E-Mail: cheyenne.whitire@testamericainc.com		Carrier Tracking No(s): COC No: 400-56525-24537.1 Page: Page 1 of 2 Job #:			
Company: Alabama Power General Test Laboratory Address: 7444 County Rd 87, CSC #8 City: Callera State, Zip: AL, 35040 Phone: 205-664-6197(Tel) Email: lbmidkiff@southernco.com Project Name: 40007143 CCR Site: Gadsden Ash Pond 1175		Analysis Requested Due Date Requested: TAT Requested (days): PO #: WO #: Project #: SSOW#:				Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 X - other (specify)	
Sample Identification Sample # Sample Date Sample Time Sample Type (C=Comp, G=Grab) Matrix (Water, Solid, Onsite, Air, Tissue, Acid) Preservation Code		Field Filtered Sample (Yes or No) Perform M/MSD (Yes or No) SM 4500 Cl _r SM 4500 SO ₄ F 9315_Ra226_9320_Ra228_Ra226Ra228_GFFC		Total Number of Containers		Special Instructions/Note: MW-3 MW-4 MW-4 Dup (Sample Duplicate) MW-2 MW-1 MW-10 FB-1 (Field Blank) PZ-1 PZ-5 PZ-6 MW-5 MW-6 MW-6 Dup (Sample Duplicate) MW-7 MW-8 MW-9 MW-11 MW-12	
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, Other (specify)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by: Relinquished by: Laura Midkiff Relinquished by: Relinquished by:		Date: Date/Time: 10/25/2018 12:00 Date/Time: Date/Time:		Method of Shipment: Date/Time: 10/29/18 16:45 Date/Time: 10/30/18 09:35 Date/Time:		Company: Company: Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks: 21.6°C, 21.7°C		Signature: [Handwritten Signature]	



TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record



Client Information		Lab P/N: Whitmire, Cheyenne R		Carrier Tracking Note(s):	
Sampler: Ben Rothschild Phone: Client Contact: Laura Midkiff Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL 35040 Phone: 205-664-6197 (Tel) Email: lmidkiff@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1175		E-Mail: cheyenne.whitmire@lestamericainc.com Job #: Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)		COC No: 400-56525-24537.1 Page: Page 2 of 2 Job #:	
Analysis Requested					
Due Date Requested: TAT Requested (days): PO #: WO #: Project #: 40007143 SSOW#:		Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Total Number of Containers:			
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Organic, Acid)	Preservation Code
AY25428	10/23/18	17:25	G	Water	FB-2 (Field Blank)
AY25429	10/24/18	11:19	G	Water	MW-17
AY25430	10/24/18	12:51	G	Water	MW-16
AY25431	10/24/18	13:49	G	Water	MW-14
AY25432	10/24/18	14:10	G	Water	EB-1 (Equipment Blank)
Special Instructions/Note: 9315_Ra226_9320_Ra228_Ra226Ra228_GFPc SM 4500 SO4 E SM 4500 Cl E SM 4500 F C					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, V, Other (specify)					
Empty Kit Relinquished by: _____ Date: _____ Relinquished by: Laura Midkiff Date/Time: 10/25/2018 12:00 Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:					
Received by: _____ Date/Time: 11/29/18 16:45 Received by: _____ Date/Time: 11/30/18 09:58 Received by: _____ Date/Time: _____ Cooler Temperature(s) °C and Other Remarks:					



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-161262-2
SDG Number: Gadsden Ash Pond 1175

Login Number: 161262

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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, 21.6°C, 21.7°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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-161262-2
SDG Number: Gadsden Ash Pond 1175

Login Number: 161262

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 10/31/18 01:07 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	18.0
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
 SDG: Gadsden Ash Pond 1175

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	10-09-19
Iowa	State Program	7	367	08-01-20
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	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	12-31-18
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	06-30-19
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
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	06-30-19
Nevada	State Program	9	MO000542018-1	07-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-161262-2
SDG: Gadsden Ash Pond 1175

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
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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1181
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks, Greg Dyer, & Corey Ladner
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:

Laura Midkiff

Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2018.12.13 12:55:22 -06'00'

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.12.13 15:58:19 -06'00'



Metals ICP

Gadsden Ash Pond

WMWGADAP_1181

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY26910	632779	WMWGADAP_1181
AY26911	632779	WMWGADAP_1181
AY26912	632779	WMWGADAP_1181
AY26913	632779	WMWGADAP_1181
AY26914	632779	WMWGADAP_1181

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1181

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY26910	633265	WMWGADAP_1181
AY26911	633265	WMWGADAP_1181
AY26912	633265	WMWGADAP_1181
AY26913	633265	WMWGADAP_1181
AY26914	633265	WMWGADAP_1181

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes except for Ba. All samples were reanalyzed for Ba after instrument recalibration with passing criteria.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1181

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY26910	633024	WMWGADAP_1181
AY26911	633024	WMWGADAP_1181
AY26912	633024	WMWGADAP_1181
AY26913	633024	WMWGADAP_1181
AY26914	633024	WMWGADAP_1181

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- The laboratory control sample originally failed and was re-analyzed; criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1181

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY26910	633160	WMWGADAP_1181
AY26911	633160	WMWGADAP_1181
AY26912	633160	WMWGADAP_1181
AY26913	633160	WMWGADAP_1181
AY26914	633161	WMWGADAP_1181

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AY26911
 - AY26914

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY26910

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/3/2018	EPA 200.8		5.075	0.002	0.01	0.203	mg/L
* Beryllium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/19/2018	EPA 200.7		2.03	0.02	0.1	J 0.0348	mg/L
* Calcium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.1	0.5	27.5	mg/L
* Cadmium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/21/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	J 0.00358	mg/L
* Lead, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	11/21/2018	SM 2540C		1		25	170	mg/L
Filter Completion Date	CRB	11/15/2018	SM 2540C		1			11/15/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY26910

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Limit	
			MB	Limit					Rec	Limit			
AY26914	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0984	0.0991	0.104	0.085 to 0.115	98.4	70 to 130	0.696	20
AY26914	Antimony, Total	mg/L	0.0000202	0.00176	0.10	0.0941	0.0944	0.0992	0.085 to 0.115	94.1	70 to 130	0.343	20
AY26914	Cobalt, Total	mg/L	-0.000204	0.0044	0.10	0.0929	0.0933	0.0948	0.085 to 0.115	92.9	70 to 130	0.385	20
AY26914	Molybdenum, Total	mg/L	0.0000182	0.0044	0.10	0.0907	0.0887	0.0897	0.085 to 0.115	90.7	70 to 130	2.21	20
AY26914	Selenium, Total	mg/L	0.0000102	0.0044	0.10	0.0999	0.103	0.105	0.085 to 0.115	99.9	70 to 130	3.48	20
AY26914	Arsenic, Total	mg/L	0.0000347	0.0022	0.10	0.0973	0.0921	0.101	0.085 to 0.115	97.3	70 to 130	5.45	20
AY26914	Lithium, Total	mg/L	-0.0000797	0.022	0.20	0.193	0.195	0.190	0.17 to 0.23	96.3	70 to 130	1.40	20
AY26914	Beryllium, Total	mg/L	0.0000201	0.00132	0.10	0.0968	0.0961	0.0982	0.085 to 0.115	96.8	70 to 130	0.777	20
AY26914	Boron, Total	mg/L	0.000149	0.044	1.00	0.959	0.980	0.954	0.85 to 1.15	95.9	70 to 130	2.17	20
AY26914	Lead, Total	mg/L	-0.00000340	0.0022	0.10	0.0872	0.0856	0.0885	0.085 to 0.115	87.2	70 to 130	1.84	20
AY26914	Mercury, Total by CVAA	mg/L	0.0000888	0.0005	0.004	0.00354	0.00352	0.00350	0.0034 to 0.0046	88.6	70 to 130	0.552	20
AY26914	Thallium, Total	mg/L	-0.0000481	0.00044	0.10	0.0896	0.0905	0.0907	0.085 to 0.115	89.6	70 to 130	0.957	20
AY26914	Barium, Total	mg/L	0.00000928	0.0044	0.10	0.0884	0.0944	0.0954	0.085 to 0.115	88.4	70 to 130	6.59	20
AY26914	Calcium, Total	mg/L	0.00401	0.22	5.00	4.91	5.03	4.92	4.25 to 5.75	98.2	70 to 130	2.36	20
AY26914	Chromium, Total	mg/L	0.0000474	0.0044	0.10	0.0946	0.0930	0.0964	0.085 to 0.115	94.6	70 to 130	1.68	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY26910

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY26913	Solids, Dissolved	mg/L	-4.00	25			99.3	52.0	40 to 60		0.337	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY26911

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/3/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/19/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/21/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	11/21/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	11/15/2018	SM 2540C		1			11/15/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY26911

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec Limit		
			MB	Limit					Rec	Limit			
AY26914	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0984	0.0991	0.104	0.085 to 0.115	98.4	70 to 130	0.696	20
AY26914	Antimony, Total	mg/L	0.0000202	0.00176	0.10	0.0941	0.0944	0.0992	0.085 to 0.115	94.1	70 to 130	0.343	20
AY26914	Arsenic, Total	mg/L	0.0000347	0.0022	0.10	0.0973	0.0921	0.101	0.085 to 0.115	97.3	70 to 130	5.45	20
AY26914	Lithium, Total	mg/L	-0.0000797	0.022	0.20	0.193	0.195	0.190	0.17 to 0.23	96.3	70 to 130	1.40	20
AY26914	Barium, Total	mg/L	0.0000928	0.0044	0.10	0.0884	0.0944	0.0954	0.085 to 0.115	88.4	70 to 130	6.59	20
AY26914	Calcium, Total	mg/L	0.00401	0.22	5.00	4.91	5.03	4.92	4.25 to 5.75	98.2	70 to 130	2.36	20
AY26914	Chromium, Total	mg/L	0.0000474	0.0044	0.10	0.0946	0.0930	0.0964	0.085 to 0.115	94.6	70 to 130	1.68	20
AY26914	Cobalt, Total	mg/L	-0.000204	0.0044	0.10	0.0929	0.0933	0.0948	0.085 to 0.115	92.9	70 to 130	0.385	20
AY26914	Molybdenum, Total	mg/L	0.0000182	0.0044	0.10	0.0907	0.0887	0.0897	0.085 to 0.115	90.7	70 to 130	2.21	20
AY26914	Selenium, Total	mg/L	0.0000102	0.0044	0.10	0.0999	0.103	0.105	0.085 to 0.115	99.9	70 to 130	3.48	20
AY26914	Beryllium, Total	mg/L	0.0000201	0.00132	0.10	0.0968	0.0961	0.0982	0.085 to 0.115	96.8	70 to 130	0.777	20
AY26914	Boron, Total	mg/L	0.000149	0.044	1.00	0.959	0.980	0.954	0.85 to 1.15	95.9	70 to 130	2.17	20
AY26914	Lead, Total	mg/L	-0.00000340	0.0022	0.10	0.0872	0.0856	0.0885	0.085 to 0.115	87.2	70 to 130	1.84	20
AY26914	Mercury, Total by CVAA	mg/L	0.0000888	0.0005	0.004	0.00354	0.00352	0.00350	0.0034 to 0.0046	88.6	70 to 130	0.552	20
AY26914	Thallium, Total	mg/L	-0.0000481	0.00044	0.10	0.0896	0.0905	0.0907	0.085 to 0.115	89.6	70 to 130	0.957	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY26911

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY26913	Solids, Dissolved	mg/L	-4.00	25			99.3	52.0	40 to 60			0.337	5

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY26912

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/3/2018	EPA 200.8		5.075	0.002	0.01	0.0458	mg/L
* Beryllium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/19/2018	EPA 200.7		2.03	0.02	0.1	J 0.0209	mg/L
* Calcium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.1	0.5	14.9	mg/L
* Cadmium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000417	mg/L
* Antimony, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.005	0.0114	mg/L
* Chromium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/21/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	11/21/2018	SM 2540C		1		25	96.7	mg/L
Filter Completion Date	CRB	11/15/2018	SM 2540C		1			11/15/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY26912

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY26914	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0984	0.0991	0.104	0.085 to 0.115	98.4	70 to 130	0.696	20
AY26914	Antimony, Total	mg/L	0.0000202	0.00176	0.10	0.0941	0.0944	0.0992	0.085 to 0.115	94.1	70 to 130	0.343	20
AY26914	Cobalt, Total	mg/L	-0.000204	0.0044	0.10	0.0929	0.0933	0.0948	0.085 to 0.115	92.9	70 to 130	0.385	20
AY26914	Molybdenum, Total	mg/L	0.0000182	0.0044	0.10	0.0907	0.0887	0.0897	0.085 to 0.115	90.7	70 to 130	2.21	20
AY26914	Selenium, Total	mg/L	0.0000102	0.0044	0.10	0.0999	0.103	0.105	0.085 to 0.115	99.9	70 to 130	3.48	20
AY26914	Beryllium, Total	mg/L	0.0000201	0.00132	0.10	0.0968	0.0961	0.0982	0.085 to 0.115	96.8	70 to 130	0.777	20
AY26914	Boron, Total	mg/L	0.000149	0.044	1.00	0.959	0.980	0.954	0.85 to 1.15	95.9	70 to 130	2.17	20
AY26914	Lead, Total	mg/L	-0.00000340	0.0022	0.10	0.0872	0.0856	0.0885	0.085 to 0.115	87.2	70 to 130	1.84	20
AY26914	Mercury, Total by CVAA	mg/L	0.0000888	0.0005	0.004	0.00354	0.00352	0.00350	0.0034 to 0.0046	88.6	70 to 130	0.552	20
AY26914	Thallium, Total	mg/L	-0.0000481	0.00044	0.10	0.0896	0.0905	0.0907	0.085 to 0.115	89.6	70 to 130	0.957	20
AY26914	Barium, Total	mg/L	0.00000928	0.0044	0.10	0.0884	0.0944	0.0954	0.085 to 0.115	88.4	70 to 130	6.59	20
AY26914	Calcium, Total	mg/L	0.00401	0.22	5.00	4.91	5.03	4.92	4.25 to 5.75	98.2	70 to 130	2.36	20
AY26914	Chromium, Total	mg/L	0.0000474	0.0044	0.10	0.0946	0.0930	0.0964	0.085 to 0.115	94.6	70 to 130	1.68	20
AY26914	Arsenic, Total	mg/L	0.0000347	0.0022	0.10	0.0973	0.0921	0.101	0.085 to 0.115	97.3	70 to 130	5.45	20
AY26914	Lithium, Total	mg/L	-0.0000797	0.022	0.20	0.193	0.195	0.190	0.17 to 0.23	96.3	70 to 130	1.40	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY26912

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY26913	Solids, Dissolved	mg/L	-4.00	25			99.3	52.0	40 to 60		0.337	5

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AY26913

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/3/2018	EPA 200.8		5.075	0.002	0.01	0.0474	mg/L
* Beryllium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/19/2018	EPA 200.7		2.03	0.02	0.1	J 0.0218	mg/L
* Calcium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.1	0.5	14.9	mg/L
* Cadmium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.005	0.0122	mg/L
* Chromium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/21/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	11/21/2018	SM 2540C		1		25	98.7	mg/L
Filter Completion Date	CRB	11/15/2018	SM 2540C		1			11/15/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AY26913

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY26914	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0984	0.0991	0.104	0.085 to 0.115	98.4	70 to 130	0.696	20
AY26914	Antimony, Total	mg/L	0.0000202	0.00176	0.10	0.0941	0.0944	0.0992	0.085 to 0.115	94.1	70 to 130	0.343	20
AY26914	Arsenic, Total	mg/L	0.0000347	0.0022	0.10	0.0973	0.0921	0.101	0.085 to 0.115	97.3	70 to 130	5.45	20
AY26914	Lithium, Total	mg/L	-0.0000797	0.022	0.20	0.193	0.195	0.190	0.17 to 0.23	96.3	70 to 130	1.40	20
AY26914	Beryllium, Total	mg/L	0.0000201	0.00132	0.10	0.0968	0.0961	0.0982	0.085 to 0.115	96.8	70 to 130	0.777	20
AY26914	Boron, Total	mg/L	0.000149	0.044	1.00	0.959	0.980	0.954	0.85 to 1.15	95.9	70 to 130	2.17	20
AY26914	Lead, Total	mg/L	-0.00000340	0.0022	0.10	0.0872	0.0856	0.0885	0.085 to 0.115	87.2	70 to 130	1.84	20
AY26914	Mercury, Total by CVAA	mg/L	0.0000888	0.0005	0.004	0.00354	0.00352	0.00350	0.0034 to 0.0046	88.6	70 to 130	0.552	20
AY26914	Thallium, Total	mg/L	-0.0000481	0.00044	0.10	0.0896	0.0905	0.0907	0.085 to 0.115	89.6	70 to 130	0.957	20
AY26914	Cobalt, Total	mg/L	-0.000204	0.0044	0.10	0.0929	0.0933	0.0948	0.085 to 0.115	92.9	70 to 130	0.385	20
AY26914	Molybdenum, Total	mg/L	0.0000182	0.0044	0.10	0.0907	0.0887	0.0897	0.085 to 0.115	90.7	70 to 130	2.21	20
AY26914	Selenium, Total	mg/L	0.0000102	0.0044	0.10	0.0999	0.103	0.105	0.085 to 0.115	99.9	70 to 130	3.48	20
AY26914	Barium, Total	mg/L	0.00000928	0.0044	0.10	0.0884	0.0944	0.0954	0.085 to 0.115	88.4	70 to 130	6.59	20
AY26914	Calcium, Total	mg/L	0.00401	0.22	5.00	4.91	5.03	4.92	4.25 to 5.75	98.2	70 to 130	2.36	20
AY26914	Chromium, Total	mg/L	0.0000474	0.0044	0.10	0.0946	0.0930	0.0964	0.085 to 0.115	94.6	70 to 130	1.68	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AY26913

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY26913	Solids, Dissolved	mg/L	-4.00	25			99.3	52.0	40 to 60		0.337	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY26914

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/3/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	11/19/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	11/21/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	11/19/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	11/26/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	11/26/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	11/21/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	11/15/2018	SM 2540C		1			11/15/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY26914

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit				Limit	Rec	Limit	Prec		
AY26914	Antimony, Total	mg/L	0.0000202	0.00176	0.10	0.0941	0.0944	0.0992	0.085 to 0.115	94.1	70 to 130	0.343	20
AY26914	Cadmium, Total	mg/L	0.000000	0.00066	0.10	0.0984	0.0991	0.104	0.085 to 0.115	98.4	70 to 130	0.696	20
AY26914	Arsenic, Total	mg/L	0.0000347	0.0022	0.10	0.0973	0.0921	0.101	0.085 to 0.115	97.3	70 to 130	5.45	20
AY26914	Lithium, Total	mg/L	-0.0000797	0.022	0.20	0.193	0.195	0.190	0.17 to 0.23	96.3	70 to 130	1.40	20
AY26914	Beryllium, Total	mg/L	0.0000201	0.00132	0.10	0.0968	0.0961	0.0982	0.085 to 0.115	96.8	70 to 130	0.777	20
AY26914	Boron, Total	mg/L	0.000149	0.044	1.00	0.959	0.980	0.954	0.85 to 1.15	95.9	70 to 130	2.17	20
AY26914	Lead, Total	mg/L	-0.00000340	0.0022	0.10	0.0872	0.0856	0.0885	0.085 to 0.115	87.2	70 to 130	1.84	20
AY26914	Mercury, Total by CVAA	mg/L	0.0000888	0.0005	0.004	0.00354	0.00352	0.00350	0.0034 to 0.0046	88.6	70 to 130	0.552	20
AY26914	Thallium, Total	mg/L	-0.0000481	0.00044	0.10	0.0896	0.0905	0.0907	0.085 to 0.115	89.6	70 to 130	0.957	20
AY26914	Cobalt, Total	mg/L	-0.000204	0.0044	0.10	0.0929	0.0933	0.0948	0.085 to 0.115	92.9	70 to 130	0.385	20
AY26914	Molybdenum, Total	mg/L	0.0000182	0.0044	0.10	0.0907	0.0887	0.0897	0.085 to 0.115	90.7	70 to 130	2.21	20
AY26914	Selenium, Total	mg/L	0.0000102	0.0044	0.10	0.0999	0.103	0.105	0.085 to 0.115	99.9	70 to 130	3.48	20
AY26914	Barium, Total	mg/L	0.00000928	0.0044	0.10	0.0884	0.0944	0.0954	0.085 to 0.115	88.4	70 to 130	6.59	20
AY26914	Calcium, Total	mg/L	0.00401	0.22	5.00	4.91	5.03	4.92	4.25 to 5.75	98.2	70 to 130	2.36	20
AY26914	Chromium, Total	mg/L	0.0000474	0.0044	0.10	0.0946	0.0930	0.0964	0.085 to 0.115	94.6	70 to 130	1.68	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 14-Nov-18
 Customer ID:
 Delivery Date: 15-Nov-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY26914

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY26914	Solids, Dissolved	mg/L	-4.00	25			-0.67	52.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information

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: 400-162253-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1181

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

11/29/2018 5:25:29 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
SDG: Gadsden Ash Pond 1181

Job ID: 400-162253-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-162253-1

General Chemistry

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AY26917 MW-16 (400-162253-3) and AY26918 MW-16 DUP (400-162253-4). Elevated reporting limits (RLs) are provided.

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Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
SDG: Gadsden Ash Pond 1181

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
SDG: Gadsden Ash Pond 1181

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162253-1	AY26915 MW-17	Water	11/14/18 11:34	11/16/18 09:30
400-162253-2	AY26916 FB-1	Water	11/14/18 12:15	11/16/18 09:30
400-162253-3	AY26917 MW-16	Water	11/14/18 13:42	11/16/18 09:30
400-162253-4	AY26918 MW-16 DUP	Water	11/14/18 13:42	11/16/18 09:30
400-162253-5	AY26919 EB-1	Water	11/14/18 14:15	11/16/18 09:30

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
 SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26915 MW-17

Lab Sample ID: 400-162253-1

Date Collected: 11/14/18 11:34

Matrix: Water

Date Received: 11/16/18 09:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		2.0	1.4	mg/L			11/28/18 12:29	1
Fluoride	0.20		0.10	0.032	mg/L			11/28/18 15:14	1
Sulfate	13		5.0	1.4	mg/L			11/27/18 13:30	1

Client Sample ID: AY26916 FB-1

Lab Sample ID: 400-162253-2

Date Collected: 11/14/18 12:15

Matrix: Water

Date Received: 11/16/18 09:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/28/18 12:29	1
Fluoride	<0.032		0.10	0.032	mg/L			11/28/18 15:18	1
Sulfate	<1.4		5.0	1.4	mg/L			11/27/18 13:30	1

Client Sample ID: AY26917 MW-16

Lab Sample ID: 400-162253-3

Date Collected: 11/14/18 13:42

Matrix: Water

Date Received: 11/16/18 09:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		2.0	1.4	mg/L			11/28/18 12:29	1
Fluoride	0.10		0.10	0.032	mg/L			11/28/18 15:22	1
Sulfate	44		25	7.0	mg/L			11/27/18 13:49	5

Client Sample ID: AY26918 MW-16 DUP

Lab Sample ID: 400-162253-4

Date Collected: 11/14/18 13:42

Matrix: Water

Date Received: 11/16/18 09:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.7		2.0	1.4	mg/L			11/28/18 12:29	1
Fluoride	0.10		0.10	0.032	mg/L			11/28/18 15:26	1
Sulfate	44		25	7.0	mg/L			11/27/18 13:49	5

Client Sample ID: AY26919 EB-1

Lab Sample ID: 400-162253-5

Date Collected: 11/14/18 14:15

Matrix: Water

Date Received: 11/16/18 09:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/28/18 12:36	1
Fluoride	<0.032		0.10	0.032	mg/L			11/28/18 15:30	1
Sulfate	<1.4		5.0	1.4	mg/L			11/27/18 13:30	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
SDG: Gadsden Ash Pond 1181

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26915 MW-17

Date Collected: 11/14/18 11:34

Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	421176	11/28/18 12:29	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 15:14	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	420988	11/27/18 13:30	RRC	TAL PEN

Client Sample ID: AY26916 FB-1

Date Collected: 11/14/18 12:15

Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	421176	11/28/18 12:29	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 15:18	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	420988	11/27/18 13:30	RRC	TAL PEN

Client Sample ID: AY26917 MW-16

Date Collected: 11/14/18 13:42

Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	421176	11/28/18 12:29	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 15:22	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	420988	11/27/18 13:49	RRC	TAL PEN

Client Sample ID: AY26918 MW-16 DUP

Date Collected: 11/14/18 13:42

Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	421176	11/28/18 12:29	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 15:26	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	420988	11/27/18 13:49	RRC	TAL PEN

Client Sample ID: AY26919 EB-1

Date Collected: 11/14/18 14:15

Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	421176	11/28/18 12:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	421180	11/28/18 15:30	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	420988	11/27/18 13:30	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
SDG: Gadsden Ash Pond 1181

Laboratory References:

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

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QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
 SDG: Gadsden Ash Pond 1181

General Chemistry

Analysis Batch: 420988

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162253-1	AY26915 MW-17	Total/NA	Water	SM 4500 SO4 E	
400-162253-2	AY26916 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-162253-3	AY26917 MW-16	Total/NA	Water	SM 4500 SO4 E	
400-162253-4	AY26918 MW-16 DUP	Total/NA	Water	SM 4500 SO4 E	
400-162253-5	AY26919 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-420988/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-420988/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-420988/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-162396-A-2 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-162396-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 421176

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162253-1	AY26915 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-162253-2	AY26916 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-162253-3	AY26917 MW-16	Total/NA	Water	SM 4500 Cl- E	
400-162253-4	AY26918 MW-16 DUP	Total/NA	Water	SM 4500 Cl- E	
400-162253-5	AY26919 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-421176/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-421176/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-421176/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-162375-A-1 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-162375-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 421180

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162253-1	AY26915 MW-17	Total/NA	Water	SM 4500 F C	
400-162253-2	AY26916 FB-1	Total/NA	Water	SM 4500 F C	
400-162253-3	AY26917 MW-16	Total/NA	Water	SM 4500 F C	
400-162253-4	AY26918 MW-16 DUP	Total/NA	Water	SM 4500 F C	
400-162253-5	AY26919 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-421180/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-421180/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-162396-A-9 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-162396-A-9 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-162396-A-17 DU	Duplicate	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
 SDG: Gadsden Ash Pond 1181

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-421176/6
Matrix: Water
Analysis Batch: 421176

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			11/28/18 12:26	1

Lab Sample ID: LCS 400-421176/7
Matrix: Water
Analysis Batch: 421176

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

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

Lab Sample ID: MRL 400-421176/3
Matrix: Water
Analysis Batch: 421176

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.60	J	mg/L		80	50 - 150

Lab Sample ID: 400-162375-A-1 MS
Matrix: Water
Analysis Batch: 421176

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	15		10.0	25.1		mg/L		97	73 - 120

Lab Sample ID: 400-162375-A-1 MSD
Matrix: Water
Analysis Batch: 421176

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	15		10.0	24.8		mg/L		94	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-421180/3
Matrix: Water
Analysis Batch: 421180

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			11/28/18 14:20	1

Lab Sample ID: LCS 400-421180/4
Matrix: Water
Analysis Batch: 421180

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.90		mg/L		98	90 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
 SDG: Gadsden Ash Pond 1181

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 400-162396-A-9 MS
Matrix: Water
Analysis Batch: 421180

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.13		1.00	1.10		mg/L		97	75 - 125

Lab Sample ID: 400-162396-A-9 MSD
Matrix: Water
Analysis Batch: 421180

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.13		1.00	1.10		mg/L		97	75 - 125	0	4

Lab Sample ID: 400-162396-A-17 DU
Matrix: Water
Analysis Batch: 421180

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	<0.032		<0.032		mg/L		NC	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-420988/6
Matrix: Water
Analysis Batch: 420988

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			11/27/18 13:19	1

Lab Sample ID: LCS 400-420988/7
Matrix: Water
Analysis Batch: 420988

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	16.1		mg/L		107	90 - 110

Lab Sample ID: MRL 400-420988/3
Matrix: Water
Analysis Batch: 420988

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.48	J	mg/L		90	50 - 150

Lab Sample ID: 400-162396-A-2 MS
Matrix: Water
Analysis Batch: 420988

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<1.4		10.0	8.50		mg/L		85	77 - 128

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
 SDG: Gadsden Ash Pond 1181

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

Lab Sample ID: 400-162396-A-2 MSD
Matrix: Water
Analysis Batch: 420988

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<1.4		10.0	8.92		mg/L		89	77 - 128	5	5

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TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information
 Client Contact: Laura Midkiff
 Company: Alabama Power General Test Laboratory
 Address: 744 County Rd 87 GSC #8
 City: Calera
 State/Zip: AL 35040
 Phone: 205-664-6197 (Tel)
 Email: lmidkiff@southemco.com
 Project Name: CCR
 Site: Gadsden Ash Pond 1181

Analysis Requested
 Due Date Requested:
 TAT Requested (days):
 PO #:
 WO #:
 Project #:
 SSO#W#:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Solid, Other)	Preservation Code	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Analysis Requested		Special Instructions/Note:
						Y	N	Y	N	Y	N	
AY26915	11/14/18	11:34	G	Water		X		X		SM 4500 F, C		4 MW-17
AY26916	11/14/18	12:15	G	Water		X		X		SM 4500 CL, E		2 FB-1 (Field Blank)
AY26917	11/14/18	13:42	G	Water		X		X		SM 4500 SO4, E		2 MW-16
AY26918	11/14/18	13:42	G	Water		X		X		9315_Ra226, 9320_Ra228, Ra226Ra228_GFPC		2 MW-16 DUP (Sample Duplicate)
AY26919	11/14/18	14:15	G	Water		X		X				2 EB-1 (Equipment Blank)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months
 Special Instructions/QC Requirements:

Relinquished by: Laura Midkiff
 Date/Time: 11/15/2018 09:35
 Company: APC

Relinquished by:
 Date/Time:
 Company:

Relinquished by:
 Date/Time:
 Company:

Custody Seals Intact: Yes No



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-162253-1
SDG Number: Gadsden Ash Pond 1181

Login Number: 162253

List Number: 1

Creator: Avery, Kathy R

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
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, 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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-1
 SDG: Gadsden Ash Pond 1181

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	10-09-19
Iowa	State Program	7	367	08-01-20
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	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	12-31-18
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	06-30-19
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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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: 400-162253-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1181

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

12/19/2018 5:52:30 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
SDG: Gadsden Ash Pond 1181

Job ID: 400-162253-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-162253-2

RAD

Method(s) 9320: Ra-228 Prep Batch 160-402321: The following sample did not meet the requested limit (RL) due to the reduced sample volume attributed to limited sample volume (see prep NCM 160-154903). The data have been reported with this narrative. AY26916 FB-1 (400-162253-2), AY26917 MW-16 (400-162253-3), AY26918 MW-16 DUP (400-162253-4) and AY26919 EB-1 (400-162253-5)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-402321: The following sample aliquots were reduced due to limited sample volume. AY26915 MW-17 (400-162253-1), AY26915 MW-17 (400-162253-1[DU]), AY26916 FB-1 (400-162253-2), AY26917 MW-16 (400-162253-3), AY26918 MW-16 DUP (400-162253-4) and AY26919 EB-1 (400-162253-5)

Method(s) PrecSep-21: Radium 226 Prep Batch 160-402320: The following sample aliquots were reduced due to limited sample volume. AY26915 MW-17 (400-162253-1), AY26915 MW-17 (400-162253-1[DU]), AY26916 FB-1 (400-162253-2), AY26917 MW-16 (400-162253-3), AY26918 MW-16 DUP (400-162253-4) and AY26919 EB-1 (400-162253-5)

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
SDG: Gadsden Ash Pond 1181

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
SDG: Gadsden Ash Pond 1181

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162253-1	AY26915 MW-17	Water	11/14/18 11:34	11/16/18 09:30
400-162253-2	AY26916 FB-1	Water	11/14/18 12:15	11/16/18 09:30
400-162253-3	AY26917 MW-16	Water	11/14/18 13:42	11/16/18 09:30
400-162253-4	AY26918 MW-16 DUP	Water	11/14/18 13:42	11/16/18 09:30
400-162253-5	AY26919 EB-1	Water	11/14/18 14:15	11/16/18 09:30

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26915 MW-17

Lab Sample ID: 400-162253-1

Date Collected: 11/14/18 11:34

Matrix: Water

Date Received: 11/16/18 09:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.231		0.117	0.118	1.00	0.136	pCi/L	11/23/18 08:26	12/17/18 08:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					11/23/18 08:26	12/17/18 08:57	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.167	U	0.310	0.311	1.00	0.530	pCi/L	11/23/18 09:37	12/11/18 17:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					11/23/18 09:37	12/11/18 17:38	1
Y Carrier	79.6		40 - 110					11/23/18 09:37	12/11/18 17:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.398	U	0.331	0.333	5.00	0.530	pCi/L		12/17/18 16:04	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26916 FB-1

Lab Sample ID: 400-162253-2

Date Collected: 11/14/18 12:15

Matrix: Water

Date Received: 11/16/18 09:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.115	U	0.174	0.175	1.00	0.301	pCi/L	11/23/18 08:26	12/17/18 08:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					11/23/18 08:26	12/17/18 08:57	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.278	U G	0.762	0.762	1.00	1.32	pCi/L	11/23/18 09:37	12/11/18 17:38	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.5		40 - 110					11/23/18 09:37	12/11/18 17:38	1
Y Carrier	79.6		40 - 110					11/23/18 09:37	12/11/18 17:38	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.393	U	0.782	0.782	5.00	1.32	pCi/L		12/17/18 16:04	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26917 MW-16

Lab Sample ID: 400-162253-3

Date Collected: 11/14/18 13:42

Matrix: Water

Date Received: 11/16/18 09:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.371		0.220	0.223	1.00	0.266	pCi/L	11/23/18 08:26	12/17/18 08:57	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					11/23/18 08:26	12/17/18 08:57	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.374	U G	0.660	0.661	1.00	1.26	pCi/L	11/23/18 09:37	12/11/18 17:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					11/23/18 09:37	12/11/18 17:39	1
Y Carrier	81.1		40 - 110					11/23/18 09:37	12/11/18 17:39	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.00270	U	0.696	0.698	5.00	1.26	pCi/L		12/17/18 16:04	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26918 MW-16 DUP

Lab Sample ID: 400-162253-4

Date Collected: 11/14/18 13:42

Matrix: Water

Date Received: 11/16/18 09:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.167	U	0.192	0.192	1.00	0.308	pCi/L	11/23/18 08:26	12/17/18 09:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					11/23/18 08:26	12/17/18 09:22	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.439	U G	0.693	0.695	1.00	1.17	pCi/L	11/23/18 09:37	12/11/18 17:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					11/23/18 09:37	12/11/18 17:39	1
Y Carrier	81.9		40 - 110					11/23/18 09:37	12/11/18 17:39	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.606	U	0.719	0.721	5.00	1.17	pCi/L		12/17/18 16:04	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26919 EB-1

Lab Sample ID: 400-162253-5

Date Collected: 11/14/18 14:15

Matrix: Water

Date Received: 11/16/18 09:30

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.148	U	0.178	0.178	1.00	0.288	pCi/L	11/23/18 08:26	12/17/18 09:22	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/23/18 08:26	12/17/18 09:22	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.472	U G	0.783	0.784	1.00	1.32	pCi/L	11/23/18 09:37	12/11/18 17:39	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					11/23/18 09:37	12/11/18 17:39	1
Y Carrier	82.2		40 - 110					11/23/18 09:37	12/11/18 17:39	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.620	U	0.803	0.804	5.00	1.32	pCi/L		12/17/18 16:04	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
SDG: Gadsden Ash Pond 1181

Qualifiers

Rad

Qualifier	Qualifier Description
U	Result is less than the sample detection limit.
G	The Sample MDC is greater than the requested RL.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26915 MW-17
Date Collected: 11/14/18 11:34
Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			402320	11/23/18 08:26	REG	TAL SL
Total/NA	Analysis	9315		1	406074	12/17/18 08:57	CDR	TAL SL
Total/NA	Prep	PrecSep_0			402321	11/23/18 09:37	REG	TAL SL
Total/NA	Analysis	9320		1	404941	12/11/18 17:38	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	406213	12/17/18 16:04	RTM	TAL SL

Client Sample ID: AY26916 FB-1
Date Collected: 11/14/18 12:15
Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			402320	11/23/18 08:26	REG	TAL SL
Total/NA	Analysis	9315		1	406074	12/17/18 08:57	CDR	TAL SL
Total/NA	Prep	PrecSep_0			402321	11/23/18 09:37	REG	TAL SL
Total/NA	Analysis	9320		1	404941	12/11/18 17:38	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	406213	12/17/18 16:04	RTM	TAL SL

Client Sample ID: AY26917 MW-16
Date Collected: 11/14/18 13:42
Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			402320	11/23/18 08:26	REG	TAL SL
Total/NA	Analysis	9315		1	406074	12/17/18 08:57	CDR	TAL SL
Total/NA	Prep	PrecSep_0			402321	11/23/18 09:37	REG	TAL SL
Total/NA	Analysis	9320		1	404941	12/11/18 17:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	406213	12/17/18 16:04	RTM	TAL SL

Client Sample ID: AY26918 MW-16 DUP
Date Collected: 11/14/18 13:42
Date Received: 11/16/18 09:30

Lab Sample ID: 400-162253-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			402320	11/23/18 08:26	REG	TAL SL
Total/NA	Analysis	9315		1	406053	12/17/18 09:22	CDR	TAL SL
Total/NA	Prep	PrecSep_0			402321	11/23/18 09:37	REG	TAL SL
Total/NA	Analysis	9320		1	404941	12/11/18 17:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	406213	12/17/18 16:04	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
SDG: Gadsden Ash Pond 1181

Client Sample ID: AY26919 EB-1

Lab Sample ID: 400-162253-5

Date Collected: 11/14/18 14:15

Matrix: Water

Date Received: 11/16/18 09:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			402320	11/23/18 08:26	REG	TAL SL
Total/NA	Analysis	9315		1	406053	12/17/18 09:22	CDR	TAL SL
Total/NA	Prep	PrecSep_0			402321	11/23/18 09:37	REG	TAL SL
Total/NA	Analysis	9320		1	404941	12/11/18 17:39	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	406213	12/17/18 16:04	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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Rad

Prep Batch: 402320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162253-1	AY26915 MW-17	Total/NA	Water	PrecSep-21	
400-162253-2	AY26916 FB-1	Total/NA	Water	PrecSep-21	
400-162253-3	AY26917 MW-16	Total/NA	Water	PrecSep-21	
400-162253-4	AY26918 MW-16 DUP	Total/NA	Water	PrecSep-21	
400-162253-5	AY26919 EB-1	Total/NA	Water	PrecSep-21	
MB 160-402320/25-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-402320/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
310-144265-D-1-H MS	Matrix Spike	Total/NA	Water	PrecSep-21	
310-144265-D-1-I MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep-21	
400-162253-1DU	AY26915 MW-17	Total/NA	Water	PrecSep-21	

Prep Batch: 402321

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162253-1	AY26915 MW-17	Total/NA	Water	PrecSep_0	
400-162253-2	AY26916 FB-1	Total/NA	Water	PrecSep_0	
400-162253-3	AY26917 MW-16	Total/NA	Water	PrecSep_0	
400-162253-4	AY26918 MW-16 DUP	Total/NA	Water	PrecSep_0	
400-162253-5	AY26919 EB-1	Total/NA	Water	PrecSep_0	
MB 160-402321/25-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-402321/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
310-144265-D-1-K MS	Matrix Spike	Total/NA	Water	PrecSep_0	
310-144265-D-1-L MSD	Matrix Spike Duplicate	Total/NA	Water	PrecSep_0	
400-162253-1DU	AY26915 MW-17	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-402320/25-A
Matrix: Water
Analysis Batch: 406074

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 402320

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.03131	U	0.0533	0.0534	1.00	0.0942	pCi/L	11/23/18 08:26	12/17/18 11:33	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					11/23/18 08:26	12/17/18 11:33	1

Lab Sample ID: LCS 160-402320/1-A
Matrix: Water
Analysis Batch: 406074

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 402320

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.451		1.01	1.00	0.107	pCi/L	83	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	97.6		40 - 110						

Lab Sample ID: 310-144265-D-1-H MS
Matrix: Water
Analysis Batch: 406074

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 402320

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	0.115	U	11.4	8.927		0.956	1.00	0.0849	pCi/L	78	75 - 138
Carrier	MS %Yield	MS Qualifier	Limits								
Ba Carrier	104		40 - 110								

Lab Sample ID: 310-144265-D-1-I MSD
Matrix: Water
Analysis Batch: 406074

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 402320

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-226	0.115	U	11.4	8.931		0.958	1.00	0.0978	pCi/L	78	75 - 138	0	1
Carrier	MSD %Yield	MSD Qualifier	Limits										
Ba Carrier	102		40 - 110										

Lab Sample ID: 400-162253-1DU
Matrix: Water
Analysis Batch: 406074

Client Sample ID: AY26915 MW-17
Prep Type: Total/NA
Prep Batch: 402320

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.231		0.1046		0.0789	1.00	0.103	pCi/L	0.64	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

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

Lab Sample ID: 400-162253-1DU
 Matrix: Water
 Analysis Batch: 406074

Client Sample ID: AY26915 MW-17
 Prep Type: Total/NA
 Prep Batch: 402320

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	108		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-402321/25-A
 Matrix: Water
 Analysis Batch: 404943

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 402321

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.008141	U	0.276	0.276	1.00	0.496	pCi/L	11/23/18 09:37	12/11/18 17:43	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110	11/23/18 09:37	12/11/18 17:43	1
Y Carrier	74.4		40 - 110	11/23/18 09:37	12/11/18 17:43	1

Lab Sample ID: LCS 160-402321/1-A
 Matrix: Water
 Analysis Batch: 404941

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 402321

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.14	8.647		1.06	1.00	0.441	pCi/L	95	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	97.6		40 - 110
Y Carrier	80.4		40 - 110

Lab Sample ID: 310-144265-D-1-K MS
 Matrix: Water
 Analysis Batch: 404941

Client Sample ID: Matrix Spike
 Prep Type: Total/NA
 Prep Batch: 402321

Analyte	Sample Result	Sample Qual	Spike Added	MS Result	MS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	0.350	U	9.14	8.703		1.04	1.00	0.399	pCi/L	91	45 - 150

Carrier	MS %Yield	MS Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	84.5		40 - 110

Lab Sample ID: 310-144265-D-1-L MSD
 Matrix: Water
 Analysis Batch: 404941

Client Sample ID: Matrix Spike Duplicate
 Prep Type: Total/NA
 Prep Batch: 402321

Analyte	Sample Result	Sample Qual	Spike Added	MSD Result	MSD Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits	RER	RER Limit
Radium-228	0.350	U	9.13	8.754		1.08	1.00	0.463	pCi/L	92	45 - 150	0.02	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

Carrier	MSD		Limits
	%Yield	Qualifier	
Ba Carrier	102		40 - 110
Y Carrier	76.6		40 - 110

Lab Sample ID: 400-162253-1DU
Matrix: Water
Analysis Batch: 404941

Client Sample ID: AY26915 MW-17
Prep Type: Total/NA
Prep Batch: 402321

Analyte	Sample		DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual						
Radium-228	0.167	U	0.1497	U	0.298	1.00	0.510	pCi/L	0.03	1

Carrier	DU		Limits
	%Yield	Qualifier	
Ba Carrier	108		40 - 110
Y Carrier	81.9		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-162253-1DU
Matrix: Water
Analysis Batch: 406213

Client Sample ID: AY26915 MW-17
Prep Type: Total/NA

Analyte	Sample		DU		Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual						
Combined Radium 226 + 228			0.2543	U	0.308	5.00	0.510	pCi/L		

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-162253-2
SDG Number: Gadsden Ash Pond 1181

Login Number: 162253

List Number: 1

Creator: Avery, Kathy R

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
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, 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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-162253-2
SDG Number: Gadsden Ash Pond 1181

Login Number: 162253

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 11/20/18 06:03 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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.	False	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	17.0
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
 SDG: Gadsden Ash Pond 1181

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	01-12-20
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

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	10-31-19
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	06-30-19
Missouri	State Program	7	780	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162253-2
SDG: Gadsden Ash Pond 1181

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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1188
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks, Greg Dyer, & Corey Ladner
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control: Laura Midkiff
Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2018.12.26 15:26:52 -0600

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.12.27 09:30:09 -0600



Metals ICP

Gadsden Ash Pond

WMWGADAP_1188

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY27566	633696	WMWGADAP_1188
AY27567	633696	WMWGADAP_1188
AY27568	633696	WMWGADAP_1188
AY27569	633696	WMWGADAP_1188
AY27570	633696	WMWGADAP_1188

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1188

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY27566	634084	WMWGADAP_1188
AY27567	634084	WMWGADAP_1188
AY27568	634084	WMWGADAP_1188
AY27569	634084	WMWGADAP_1188
AY27570	634084	WMWGADAP_1188

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1188

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY27566	633594	WMWGADAP_1188
AY27567	633594	WMWGADAP_1188
AY27568	633594	WMWGADAP_1188
AY27569	633594	WMWGADAP_1188
AY27570	633594	WMWGADAP_1188

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1188

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY27566	633707	WMWGADAP_1188
AY27567	633707	WMWGADAP_1188
AY27568	633707	WMWGADAP_1188
AY27569	633707	WMWGADAP_1188
AY27570	633707	WMWGADAP_1188

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%, except for the following:
 - Precision was outside of the acceptable limits for sample AY27570, but the results were below the reporting limit. Therefore, the results are acceptable.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AY27567
 - AY27570

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY27566

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	J 0.00124	mg/L
* Barium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	0.0476	mg/L
* Beryllium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0006	0.003	J 0.00133	mg/L
* Boron, Total	RDA	12/5/2018	EPA 200.7		2.03	0.02	0.1	J 0.0239	mg/L
* Calcium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.1	0.5	14.8	mg/L
* Cadmium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000387	mg/L
* Antimony, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.005	0.0168	mg/L
* Chromium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	12/4/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/3/2018	SM 2540C		1		25	102	mg/L
Filter Completion Date	CRB	11/29/2018	SM 2540C		1			11/29/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY27566

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY27570	Cadmium, Total	mg/L	0.00000563	0.00066	0.10	0.104	0.105	0.103	0.085 to 0.115	104	70 to 130	0.961	20	
AY27570	Arsenic, Total	mg/L	0.00000923	0.0022	0.10	0.0971	0.0990	0.104	0.085 to 0.115	97.1	70 to 130	1.96	20	
AY27570	Lead, Total	mg/L	0.00000719	0.0022	0.10	0.101	0.103	0.0999	0.085 to 0.115	101	70 to 130	1.39	20	
AY27570	Boron, Total	mg/L	0.000377	0.044	1.00	0.977	0.959	0.984	0.85 to 1.15	97.7	70 to 130	1.83	20	
AY27570	Antimony, Total	mg/L	0.0000350	0.00176	0.10	0.0968	0.0970	0.0995	0.085 to 0.115	96.8	70 to 130	0.262	20	
AY27570	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.102	0.108	0.085 to 0.115	110	70 to 130	8.23	20	
AY27570	Molybdenum, Total	mg/L	0.00000581	0.0044	0.10	0.0923	0.0904	0.0925	0.085 to 0.115	92.3	70 to 130	2.00	20	
AY27570	Selenium, Total	mg/L	0.0000335	0.0044	0.10	0.103	0.103	0.106	0.085 to 0.115	103	70 to 130	0.0557	20	
AY27570	Calcium, Total	mg/L	-0.00457	0.22	5.00	4.92	4.90	4.96	4.25 to 5.75	98.5	70 to 130	0.420	20	
AY27570	Chromium, Total	mg/L	0.0000329	0.0044	0.10	0.0956	0.0967	0.0955	0.085 to 0.115	95.6	70 to 130	1.18	20	
AY27570	Lithium, Total	mg/L	-0.0000598	0.022	0.20	0.195	0.191	0.194	0.17 to 0.23	97.5	70 to 130	2.29	20	
AY27570	Mercury, Total by CVAA	mg/L	0.000196	0.0005	0.004	0.00412	0.00416	0.00415	0.0034 to 0.0046	103	70 to 130	1.08	20	
AY27570	Barium, Total	mg/L	0.0000167	0.0044	0.10	0.0955	0.0966	0.0947	0.085 to 0.115	95.5	70 to 130	1.15	20	
AY27570	Cobalt, Total	mg/L	-0.00000110	0.0044	0.10	0.0992	0.0991	0.0977	0.085 to 0.115	99.2	70 to 130	0.138	20	
AY27570	Thallium, Total	mg/L	0.00000148	0.00044	0.10	0.101	0.102	0.0979	0.085 to 0.115	101	70 to 130	1.81	20	

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY27566

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY27570	Solids, Dissolved	mg/L	-1.00	25			-4.0	53.0	40 to 60			0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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CC:

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 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY27567

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	12/5/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	12/4/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/3/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	11/29/2018	SM 2540C		1			11/29/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY27567

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AY27570	Arsenic, Total	mg/L	0.00000923	0.0022	0.10	0.0971	0.0990	0.104	0.085 to 0.115		97.1	70 to 130	1.96	20
AY27570	Cadmium, Total	mg/L	0.00000563	0.00066	0.10	0.104	0.105	0.103	0.085 to 0.115		104	70 to 130	0.961	20
AY27570	Lead, Total	mg/L	0.00000719	0.0022	0.10	0.101	0.103	0.0999	0.085 to 0.115		101	70 to 130	1.39	20
AY27570	Boron, Total	mg/L	0.000377	0.044	1.00	0.977	0.959	0.984	0.85 to 1.15		97.7	70 to 130	1.83	20
AY27570	Antimony, Total	mg/L	0.0000350	0.00176	0.10	0.0968	0.0970	0.0995	0.085 to 0.115		96.8	70 to 130	0.262	20
AY27570	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.102	0.108	0.085 to 0.115		110	70 to 130	8.23	20
AY27570	Molybdenum, Total	mg/L	0.00000581	0.0044	0.10	0.0923	0.0904	0.0925	0.085 to 0.115		92.3	70 to 130	2.00	20
AY27570	Selenium, Total	mg/L	0.0000335	0.0044	0.10	0.103	0.103	0.106	0.085 to 0.115		103	70 to 130	0.0557	20
AY27570	Calcium, Total	mg/L	-0.00457	0.22	5.00	4.92	4.90	4.96	4.25 to 5.75		98.5	70 to 130	0.420	20
AY27570	Chromium, Total	mg/L	0.0000329	0.0044	0.10	0.0956	0.0967	0.0955	0.085 to 0.115		95.6	70 to 130	1.18	20
AY27570	Lithium, Total	mg/L	-0.0000598	0.022	0.20	0.195	0.191	0.194	0.17 to 0.23		97.5	70 to 130	2.29	20
AY27570	Mercury, Total by CVAA	mg/L	0.000196	0.0005	0.004	0.00412	0.00416	0.00415	0.0034 to 0.0046		103	70 to 130	1.08	20
AY27570	Barium, Total	mg/L	0.0000167	0.0044	0.10	0.0955	0.0966	0.0947	0.085 to 0.115		95.5	70 to 130	1.15	20
AY27570	Cobalt, Total	mg/L	-0.00000110	0.0044	0.10	0.0992	0.0991	0.0977	0.085 to 0.115		99.2	70 to 130	0.138	20
AY27570	Thallium, Total	mg/L	0.00000148	0.00044	0.10	0.101	0.102	0.0979	0.085 to 0.115		101	70 to 130	1.81	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY27567

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY27570	Solids, Dissolved	mg/L	-1.00	25			-4.0	53.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY27568

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	0.191	mg/L
* Beryllium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	12/5/2018	EPA 200.7		2.03	0.02	0.1	J 0.0313	mg/L
* Calcium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.1	0.5	20.7	mg/L
* Cadmium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	12/4/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.01	0.02	J 0.0111	mg/L
* Molybdenum, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	J 0.00322	mg/L
* Lead, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/3/2018	SM 2540C		1		25	167	mg/L
Filter Completion Date	CRB	11/29/2018	SM 2540C		1			11/29/2018	Date

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY27568

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY27570	Cadmium, Total	mg/L	0.00000563	0.00066	0.10	0.104	0.105	0.103	0.085 to 0.115	104	70 to 130	0.961	20
AY27570	Lead, Total	mg/L	0.00000719	0.0022	0.10	0.101	0.103	0.0999	0.085 to 0.115	101	70 to 130	1.39	20
AY27570	Boron, Total	mg/L	0.000377	0.044	1.00	0.977	0.959	0.984	0.85 to 1.15	97.7	70 to 130	1.83	20
AY27570	Arsenic, Total	mg/L	0.00000923	0.0022	0.10	0.0971	0.0990	0.104	0.085 to 0.115	97.1	70 to 130	1.96	20
AY27570	Calcium, Total	mg/L	-0.00457	0.22	5.00	4.92	4.90	4.96	4.25 to 5.75	98.5	70 to 130	0.420	20
AY27570	Chromium, Total	mg/L	0.0000329	0.0044	0.10	0.0956	0.0967	0.0955	0.085 to 0.115	95.6	70 to 130	1.18	20
AY27570	Lithium, Total	mg/L	-0.0000598	0.022	0.20	0.195	0.191	0.194	0.17 to 0.23	97.5	70 to 130	2.29	20
AY27570	Mercury, Total by CVAA	mg/L	0.000196	0.0005	0.004	0.00412	0.00416	0.00415	0.0034 to 0.0046	103	70 to 130	1.08	20
AY27570	Antimony, Total	mg/L	0.0000350	0.00176	0.10	0.0968	0.0970	0.0995	0.085 to 0.115	96.8	70 to 130	0.262	20
AY27570	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.102	0.108	0.085 to 0.115	110	70 to 130	8.23	20
AY27570	Molybdenum, Total	mg/L	0.00000581	0.0044	0.10	0.0923	0.0904	0.0925	0.085 to 0.115	92.3	70 to 130	2.00	20
AY27570	Selenium, Total	mg/L	0.0000335	0.0044	0.10	0.103	0.103	0.106	0.085 to 0.115	103	70 to 130	0.0557	20
AY27570	Barium, Total	mg/L	0.0000167	0.0044	0.10	0.0955	0.0966	0.0947	0.085 to 0.115	95.5	70 to 130	1.15	20
AY27570	Cobalt, Total	mg/L	-0.00000110	0.0044	0.10	0.0992	0.0991	0.0977	0.085 to 0.115	99.2	70 to 130	0.138	20
AY27570	Thallium, Total	mg/L	0.00000148	0.00044	0.10	0.101	0.102	0.0979	0.085 to 0.115	101	70 to 130	1.81	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY27568

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY27570	Solids, Dissolved	mg/L	-1.00	25			-4.0	53.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-17 DUP

Laboratory ID Number: AY27569

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	0.188	mg/L
* Beryllium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	12/5/2018	EPA 200.7		2.03	0.02	0.1	J 0.0313	mg/L
* Calcium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.1	0.5	20.6	mg/L
* Cadmium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	12/4/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.01	0.02	J 0.0109	mg/L
* Molybdenum, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	J 0.00321	mg/L
* Lead, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/3/2018	SM 2540C		1		25	161	mg/L
Filter Completion Date	CRB	11/29/2018	SM 2540C		1			11/29/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-17 DUP

Laboratory ID Number: AY27569

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			Limit	MB					Limit	Rec	Limit	Prec			
AY27570	Cadmium, Total	mg/L	0.00000563	0.00066	0.10	0.104	0.105	0.103	0.085 to 0.115		104	70 to 130		0.961	20
AY27570	Boron, Total	mg/L	0.000377	0.044	1.00	0.977	0.959	0.984	0.85 to 1.15		97.7	70 to 130		1.83	20
AY27570	Arsenic, Total	mg/L	0.00000923	0.0022	0.10	0.0971	0.0990	0.104	0.085 to 0.115		97.1	70 to 130		1.96	20
AY27570	Lead, Total	mg/L	0.00000719	0.0022	0.10	0.101	0.103	0.0999	0.085 to 0.115		101	70 to 130		1.39	20
AY27570	Barium, Total	mg/L	0.0000167	0.0044	0.10	0.0955	0.0966	0.0947	0.085 to 0.115		95.5	70 to 130		1.15	20
AY27570	Cobalt, Total	mg/L	-0.00000110	0.0044	0.10	0.0992	0.0991	0.0977	0.085 to 0.115		99.2	70 to 130		0.138	20
AY27570	Thallium, Total	mg/L	0.00000148	0.00044	0.10	0.101	0.102	0.0979	0.085 to 0.115		101	70 to 130		1.81	20
AY27570	Antimony, Total	mg/L	0.0000350	0.00176	0.10	0.0968	0.0970	0.0995	0.085 to 0.115		96.8	70 to 130		0.262	20
AY27570	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.102	0.108	0.085 to 0.115		110	70 to 130		8.23	20
AY27570	Molybdenum, Total	mg/L	0.00000581	0.0044	0.10	0.0923	0.0904	0.0925	0.085 to 0.115		92.3	70 to 130		2.00	20
AY27570	Selenium, Total	mg/L	0.0000335	0.0044	0.10	0.103	0.103	0.106	0.085 to 0.115		103	70 to 130		0.0557	20
AY27570	Calcium, Total	mg/L	-0.00457	0.22	5.00	4.92	4.90	4.96	4.25 to 5.75		98.5	70 to 130		0.420	20
AY27570	Chromium, Total	mg/L	0.0000329	0.0044	0.10	0.0956	0.0967	0.0955	0.085 to 0.115		95.6	70 to 130		1.18	20
AY27570	Lithium, Total	mg/L	-0.0000598	0.022	0.20	0.195	0.191	0.194	0.17 to 0.23		97.5	70 to 130		2.29	20
AY27570	Mercury, Total by CVAA	mg/L	0.000196	0.0005	0.004	0.00412	0.00416	0.00415	0.0034 to 0.0046		103	70 to 130		1.08	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond - MW-17 DUP

Laboratory ID Number: AY27569

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY27570	Solids, Dissolved	mg/L	-1.00	25			-4.0	53.0	40 to 60		0.00	5

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 Laboratory certification ID: E571114
 Issued By: State of Florida, Department of Health
 Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY27570

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	RDA	12/5/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	GAS	12/4/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	RDA	12/5/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	ABB	12/7/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	ABB	12/7/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/3/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	11/29/2018	SM 2540C		1			11/29/2018	Date

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Precision for TDS was outside of the acceptable limits, but the results were below the reporting limit. Therefore, the results are acceptable. LBM 12/04/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY27570

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY27570	Boron, Total	mg/L	0.000377	0.044	1.00	0.977	0.959	0.984	0.85 to 1.15	97.7	70 to 130	1.83	20
AY27570	Arsenic, Total	mg/L	0.00000923	0.0022	0.10	0.0971	0.0990	0.104	0.085 to 0.115	97.1	70 to 130	1.96	20
AY27570	Cadmium, Total	mg/L	0.00000563	0.00066	0.10	0.104	0.105	0.103	0.085 to 0.115	104	70 to 130	0.961	20
AY27570	Lead, Total	mg/L	0.00000719	0.0022	0.10	0.101	0.103	0.0999	0.085 to 0.115	101	70 to 130	1.39	20
AY27570	Antimony, Total	mg/L	0.0000350	0.00176	0.10	0.0968	0.0970	0.0995	0.085 to 0.115	96.8	70 to 130	0.262	20
AY27570	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.102	0.108	0.085 to 0.115	110	70 to 130	8.23	20
AY27570	Molybdenum, Total	mg/L	0.00000581	0.0044	0.10	0.0923	0.0904	0.0925	0.085 to 0.115	92.3	70 to 130	2.00	20
AY27570	Selenium, Total	mg/L	0.0000335	0.0044	0.10	0.103	0.103	0.106	0.085 to 0.115	103	70 to 130	0.0557	20
AY27570	Calcium, Total	mg/L	-0.00457	0.22	5.00	4.92	4.90	4.96	4.25 to 5.75	98.5	70 to 130	0.420	20
AY27570	Chromium, Total	mg/L	0.0000329	0.0044	0.10	0.0956	0.0967	0.0955	0.085 to 0.115	95.6	70 to 130	1.18	20
AY27570	Lithium, Total	mg/L	-0.0000598	0.022	0.20	0.195	0.191	0.194	0.17 to 0.23	97.5	70 to 130	2.29	20
AY27570	Mercury, Total by CVAA	mg/L	0.000196	0.0005	0.004	0.00412	0.00416	0.00415	0.0034 to 0.0046	103	70 to 130	1.08	20
AY27570	Barium, Total	mg/L	0.0000167	0.0044	0.10	0.0955	0.0966	0.0947	0.085 to 0.115	95.5	70 to 130	1.15	20
AY27570	Cobalt, Total	mg/L	-0.00000110	0.0044	0.10	0.0992	0.0991	0.0977	0.085 to 0.115	99.2	70 to 130	0.138	20
AY27570	Thallium, Total	mg/L	0.00000148	0.00044	0.10	0.101	0.102	0.0979	0.085 to 0.115	101	70 to 130	1.81	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Precision for TDS was outside of the acceptable limits, but the results were below the reporting limit. Therefore, the results are acceptable. LBM 12/04/18

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 28-Nov-18
 Customer ID:
 Delivery Date: 28-Nov-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY27570

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY27570	Solids, Dissolved	mg/L	-1.00	25			-4.0	53.0	40 to 60		0.00	5

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Precision for TDS was outside of the acceptable limits, but the results were below the reporting limit. Therefore, the results are acceptable. LBM 12/04/18

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information

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: 400-162853-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1188

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

12/14/2018 6:08:21 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
SDG: Gadsden Ash Pond 1188

Job ID: 400-162853-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-162853-1

General Chemistry

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 422889 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: 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. (400-162853-A-1 MS) and (400-162853-A-1 MSD)

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AY27571 MW-16 (400-162853-1), (400-162853-A-1 MS) and (400-162853-A-1 MSD). Elevated reporting limits (RLs) are provided.



Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
SDG: Gadsden Ash Pond 1188

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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



Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
SDG: Gadsden Ash Pond 1188

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162853-1	AY27571 MW-16	Water	11/28/18 11:26	12/01/18 15:15
400-162853-2	AY27572 FB-1	Water	11/28/18 10:56	12/01/18 15:15
400-162853-3	AY27573 MW-17	Water	11/28/18 13:15	12/01/18 15:15
400-162853-4	AY27574 MW-17 DUP	Water	11/28/18 13:15	12/01/18 15:15
400-162853-5	AY27575 EB-1	Water	11/28/18 13:52	12/01/18 15:15

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
 SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27571 MW-16

Lab Sample ID: 400-162853-1

Date Collected: 11/28/18 11:26

Matrix: Water

Date Received: 12/01/18 15:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.5		2.0	1.4	mg/L			12/12/18 11:52	1
Fluoride	0.10		0.10	0.032	mg/L			12/13/18 10:46	1
Sulfate	46		25	7.0	mg/L			12/13/18 11:55	5

Client Sample ID: AY27572 FB-1

Lab Sample ID: 400-162853-2

Date Collected: 11/28/18 10:56

Matrix: Water

Date Received: 12/01/18 15:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/12/18 13:33	1
Fluoride	<0.032		0.10	0.032	mg/L			12/13/18 10:50	1
Sulfate	<1.4		5.0	1.4	mg/L			12/13/18 11:06	1

Client Sample ID: AY27573 MW-17

Lab Sample ID: 400-162853-3

Date Collected: 11/28/18 13:15

Matrix: Water

Date Received: 12/01/18 15:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.5		2.0	1.4	mg/L			12/12/18 13:33	1
Fluoride	0.19		0.10	0.032	mg/L			12/13/18 10:52	1
Sulfate	11		5.0	1.4	mg/L			12/13/18 11:06	1

Client Sample ID: AY27574 MW-17 DUP

Lab Sample ID: 400-162853-4

Date Collected: 11/28/18 13:15

Matrix: Water

Date Received: 12/01/18 15:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.4		2.0	1.4	mg/L			12/12/18 13:33	1
Fluoride	0.19		0.10	0.032	mg/L			12/13/18 10:54	1
Sulfate	12		5.0	1.4	mg/L			12/13/18 11:06	1

Client Sample ID: AY27575 EB-1

Lab Sample ID: 400-162853-5

Date Collected: 11/28/18 13:52

Matrix: Water

Date Received: 12/01/18 15:15

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/12/18 13:36	1
Fluoride	<0.032		0.10	0.032	mg/L			12/13/18 10:58	1
Sulfate	<1.4		5.0	1.4	mg/L			12/13/18 14:02	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
SDG: Gadsden Ash Pond 1188

Qualifiers

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27571 MW-16

Date Collected: 11/28/18 11:26

Date Received: 12/01/18 15:15

Lab Sample ID: 400-162853-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	422889	12/12/18 11:52	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	423073	12/13/18 10:46	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	423102	12/13/18 11:55	RRC	TAL PEN

Client Sample ID: AY27572 FB-1

Date Collected: 11/28/18 10:56

Date Received: 12/01/18 15:15

Lab Sample ID: 400-162853-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	422929	12/12/18 13:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	423073	12/13/18 10:50	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	423102	12/13/18 11:06	RRC	TAL PEN

Client Sample ID: AY27573 MW-17

Date Collected: 11/28/18 13:15

Date Received: 12/01/18 15:15

Lab Sample ID: 400-162853-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	422929	12/12/18 13:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	423073	12/13/18 10:52	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	423102	12/13/18 11:06	RRC	TAL PEN

Client Sample ID: AY27574 MW-17 DUP

Date Collected: 11/28/18 13:15

Date Received: 12/01/18 15:15

Lab Sample ID: 400-162853-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	422929	12/12/18 13:33	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	423073	12/13/18 10:54	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	423102	12/13/18 11:06	RRC	TAL PEN

Client Sample ID: AY27575 EB-1

Date Collected: 11/28/18 13:52

Date Received: 12/01/18 15:15

Lab Sample ID: 400-162853-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	422929	12/12/18 13:36	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	423073	12/13/18 10:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	423131	12/13/18 14:02	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
SDG: Gadsden Ash Pond 1188

Laboratory References:

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

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QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
SDG: Gadsden Ash Pond 1188

General Chemistry

Analysis Batch: 422889

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162853-1	AY27571 MW-16	Total/NA	Water	SM 4500 Cl- E	
MB 400-422889/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-422889/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-422889/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-162854-A-8 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-162854-A-8 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 422929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162853-2	AY27572 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-162853-3	AY27573 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-162853-4	AY27574 MW-17 DUP	Total/NA	Water	SM 4500 Cl- E	
400-162853-5	AY27575 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-422929/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-422929/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-422929/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-162853-3 MS	AY27573 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-162853-3 MSD	AY27573 MW-17	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 423073

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162853-1	AY27571 MW-16	Total/NA	Water	SM 4500 F C	
400-162853-2	AY27572 FB-1	Total/NA	Water	SM 4500 F C	
400-162853-3	AY27573 MW-17	Total/NA	Water	SM 4500 F C	
400-162853-4	AY27574 MW-17 DUP	Total/NA	Water	SM 4500 F C	
400-162853-5	AY27575 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-423073/2	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-423073/3	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-162856-A-5 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-162856-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-162856-A-15 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 423102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162853-1	AY27571 MW-16	Total/NA	Water	SM 4500 SO4 E	
400-162853-2	AY27572 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-162853-3	AY27573 MW-17	Total/NA	Water	SM 4500 SO4 E	
400-162853-4	AY27574 MW-17 DUP	Total/NA	Water	SM 4500 SO4 E	
MB 400-423102/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-423102/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-423102/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-162853-1 MS	AY27571 MW-16	Total/NA	Water	SM 4500 SO4 E	
400-162853-1 MSD	AY27571 MW-16	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 423131

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162853-5	AY27575 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-423131/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-423131/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-423131/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-163039-D-4 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
SDG: Gadsden Ash Pond 1188

General Chemistry (Continued)

Analysis Batch: 423131 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163039-D-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

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QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
 SDG: Gadsden Ash Pond 1188

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-422889/6
Matrix: Water
Analysis Batch: 422889

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/12/18 11:42	1

Lab Sample ID: LCS 400-422889/7
Matrix: Water
Analysis Batch: 422889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.9		mg/L		110	90 - 110

Lab Sample ID: MRL 400-422889/3
Matrix: Water
Analysis Batch: 422889

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.64	J	mg/L		82	50 - 150

Lab Sample ID: 400-162854-A-8 MS
Matrix: Water
Analysis Batch: 422889

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.7	F1	10.0	16.8	F1	mg/L		132	73 - 120

Lab Sample ID: 400-162854-A-8 MSD
Matrix: Water
Analysis Batch: 422889

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	3.7	F1	10.0	16.6	F1	mg/L		129	73 - 120	2	8

Lab Sample ID: MB 400-422929/6
Matrix: Water
Analysis Batch: 422929

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/12/18 13:33	1

Lab Sample ID: LCS 400-422929/7
Matrix: Water
Analysis Batch: 422929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.9		mg/L		110	90 - 110

Lab Sample ID: MRL 400-422929/3
Matrix: Water
Analysis Batch: 422929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.52	J	mg/L		76	50 - 150

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
 SDG: Gadsden Ash Pond 1188

Lab Sample ID: 400-162853-3 MS
Matrix: Water
Analysis Batch: 422929

Client Sample ID: AY27573 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.5		10.0	15.1		mg/L		116	73 - 120

Lab Sample ID: 400-162853-3 MSD
Matrix: Water
Analysis Batch: 422929

Client Sample ID: AY27573 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.5		10.0	15.1		mg/L		116	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-423073/2
Matrix: Water
Analysis Batch: 423073

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			12/13/18 09:51	1

Lab Sample ID: LCS 400-423073/3
Matrix: Water
Analysis Batch: 423073

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.91		mg/L		98	90 - 110

Lab Sample ID: 400-162856-A-5 MS
Matrix: Water
Analysis Batch: 423073

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.040	J	1.00	1.08		mg/L		104	75 - 125

Lab Sample ID: 400-162856-A-5 MSD
Matrix: Water
Analysis Batch: 423073

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.040	J	1.00	1.08		mg/L		104	75 - 125	0	4

Lab Sample ID: 400-162856-A-15 DU
Matrix: Water
Analysis Batch: 423073

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.060	J	0.0600	J	mg/L		0	4

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
 SDG: Gadsden Ash Pond 1188

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-423102/6
Matrix: Water
Analysis Batch: 423102

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			12/13/18 10:55	1

Lab Sample ID: LCS 400-423102/7
Matrix: Water
Analysis Batch: 423102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.2		mg/L		95	90 - 110

Lab Sample ID: MRL 400-423102/3
Matrix: Water
Analysis Batch: 423102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.80	J	mg/L		76	50 - 150

Lab Sample ID: 400-162853-1 MS
Matrix: Water
Analysis Batch: 423102

Client Sample ID: AY27571 MW-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	46		10.0	54.5	4	mg/L		82	77 - 128

Lab Sample ID: 400-162853-1 MSD
Matrix: Water
Analysis Batch: 423102

Client Sample ID: AY27571 MW-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Sulfate	46		10.0	54.7	4	mg/L		84	77 - 128	0	5

Lab Sample ID: MB 400-423131/6
Matrix: Water
Analysis Batch: 423131

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			12/13/18 14:02	1

Lab Sample ID: LCS 400-423131/7
Matrix: Water
Analysis Batch: 423131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.4		mg/L		96	90 - 110

Lab Sample ID: MRL 400-423131/3
Matrix: Water
Analysis Batch: 423131

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	3.88	J	mg/L		78	50 - 150

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QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
 SDG: Gadsden Ash Pond 1188

Lab Sample ID: 400-163039-D-4 MS
Matrix: Water
Analysis Batch: 423131

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<1.4		10.0	10.7		mg/L		107	77 - 128

Lab Sample ID: 400-163039-D-4 MSD
Matrix: Water
Analysis Batch: 423131

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<1.4		10.0	10.6		mg/L		106	77 - 128	1	5



Chain of Custody Record



400-56525-24537.1
 Page 1 of 1
 Job # 1102853

Client Information Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6197(Tel) Email: lbmidkiff@southemco.com Project Name: CCR Site: Gadsden Ash Pond 1188		Sampler: Anthony Goggins Phone: Lab PM: Whitmire, Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com		Carmer Tracking No(s): COC No: 400-56525-24537.1 Page: 1 of 1 Job # 1102853	
Analysis Requested Due Date Requested: TAT Requested (days): Routine PO #: WO #: Project #: 40007143 SSOW#:		Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No SM 4500 F C <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No SM 4500 CL E <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No SM 4500 SO4 E <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 9315 Ra226, 9320 Ra228, Ra228Ra228_GFP <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (Water, Solid, Organic, Inorganic, Acid) Preservation Code		Special Instructions/Note: Total Number of containers MW-16 2 FB-1 (Field Blank) 2 MW-17 4 MW-17 DUP (Sample Duplicate) 2 EB-1 (Equipment Blank) 2			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/OC Requirements:			
Empty Kit Relinquished by: Relinquished by: Laura Midkiff Relinquished by: Relinquished by:		Time: Date: 11/30/2018 08:35 Date/Time: 12/11/18 15:15 Date/Time: Date/Time:			
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.: Cooler Temperature and Other Remarks:			



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-162853-1
SDG Number: Gadsden Ash Pond 1188

Login Number: 162853

List Number: 1

Creator: Whitmire, Cheyenne R

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	18.2°C IR7 - Rads
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-162853-1
SDG Number: Gadsden Ash Pond 1188

Login Number: 162853

List Number: 3

Creator: Johnson, Jeremy N

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	Not present
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	3.5°C IR8 - wet chemistry
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	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-1
 SDG: Gadsden Ash Pond 1188

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	01-12-20
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



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: 400-162853-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1188

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

12/31/2018 1:02:43 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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
SDG: Gadsden Ash Pond 1188

Job ID: 400-162853-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-162853-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-404516: The following samples were prepared at a reduced aliquot due to limited volume: AY27571 MW-16 (400-162853-1), AY27572 FB-1 (400-162853-2), AY27573 MW-17 (400-162853-3), AY27573 MW-17 (400-162853-3[DU]), AY27574 MW-17 DUP (400-162853-4) and AY27575 EB-1 (400-162853-5).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-404513: The following samples were prepared at a reduced aliquot due to limited volume: AY27571 MW-16 (400-162853-1), AY27572 FB-1 (400-162853-2), AY27573 MW-17 (400-162853-3), AY27573 MW-17 (400-162853-3[DU]), AY27574 MW-17 DUP (400-162853-4) and AY27575 EB-1 (400-162853-5).



Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
SDG: Gadsden Ash Pond 1188

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
SDG: Gadsden Ash Pond 1188

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-162853-1	AY27571 MW-16	Water	11/28/18 11:26	12/01/18 15:15
400-162853-2	AY27572 FB-1	Water	11/28/18 10:56	12/01/18 15:15
400-162853-3	AY27573 MW-17	Water	11/28/18 13:15	12/01/18 15:15
400-162853-4	AY27574 MW-17 DUP	Water	11/28/18 13:15	12/01/18 15:15
400-162853-5	AY27575 EB-1	Water	11/28/18 13:52	12/01/18 15:15

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27571 MW-16

Lab Sample ID: 400-162853-1

Date Collected: 11/28/18 11:26

Matrix: Water

Date Received: 12/01/18 15:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.177		0.102	0.103	1.00	0.126	pCi/L	12/06/18 18:40	12/28/18 09:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110					12/06/18 18:40	12/28/18 09:40	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0457	U	0.278	0.278	1.00	0.491	pCi/L	12/06/18 19:14	12/18/18 10:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.1		40 - 110					12/06/18 19:14	12/18/18 10:52	1
Y Carrier	85.6		40 - 110					12/06/18 19:14	12/18/18 10:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.222	U	0.296	0.296	5.00	0.491	pCi/L		12/29/18 15:37	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27572 FB-1

Lab Sample ID: 400-162853-2

Date Collected: 11/28/18 10:56

Matrix: Water

Date Received: 12/01/18 15:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.103	U	0.0939	0.0943	1.00	0.143	pCi/L	12/06/18 18:40	12/28/18 09:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					12/06/18 18:40	12/28/18 09:40	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.116	U	0.292	0.293	1.00	0.504	pCi/L	12/06/18 19:14	12/18/18 10:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.8		40 - 110					12/06/18 19:14	12/18/18 10:52	1
Y Carrier	84.1		40 - 110					12/06/18 19:14	12/18/18 10:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.220	U	0.307	0.308	5.00	0.504	pCi/L		12/29/18 15:37	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27573 MW-17

Lab Sample ID: 400-162853-3

Date Collected: 11/28/18 13:15

Matrix: Water

Date Received: 12/01/18 15:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.188		0.110	0.111	1.00	0.138	pCi/L	12/06/18 18:40	12/28/18 09:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					12/06/18 18:40	12/28/18 09:40	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.240	U	0.302	0.303	1.00	0.501	pCi/L	12/06/18 19:14	12/18/18 10:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.0		40 - 110					12/06/18 19:14	12/18/18 10:52	1
Y Carrier	84.1		40 - 110					12/06/18 19:14	12/18/18 10:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.428	U	0.321	0.323	5.00	0.501	pCi/L		12/29/18 15:37	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27574 MW-17 DUP

Lab Sample ID: 400-162853-4

Date Collected: 11/28/18 13:15

Matrix: Water

Date Received: 12/01/18 15:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0986	U	0.0969	0.0973	1.00	0.150	pCi/L	12/06/18 18:40	12/28/18 09:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110					12/06/18 18:40	12/28/18 09:40	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.339	U	0.305	0.306	1.00	0.488	pCi/L	12/06/18 19:14	12/18/18 10:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.9		40 - 110					12/06/18 19:14	12/18/18 10:52	1
Y Carrier	86.4		40 - 110					12/06/18 19:14	12/18/18 10:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.438	U	0.320	0.321	5.00	0.488	pCi/L		12/29/18 15:37	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27575 EB-1

Lab Sample ID: 400-162853-5

Date Collected: 11/28/18 13:52

Matrix: Water

Date Received: 12/01/18 15:15

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0302	U	0.0437	0.0438	1.00	0.122	pCi/L	12/06/18 18:40	12/28/18 09:40	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					12/06/18 18:40	12/28/18 09:40	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.167	U	0.298	0.298	1.00	0.505	pCi/L	12/06/18 19:14	12/18/18 10:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.9		40 - 110					12/06/18 19:14	12/18/18 10:52	1
Y Carrier	86.4		40 - 110					12/06/18 19:14	12/18/18 10:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.137	U	0.301	0.301	5.00	0.505	pCi/L		12/29/18 15:37	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
SDG: Gadsden Ash Pond 1188

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27571 MW-16

Lab Sample ID: 400-162853-1

Date Collected: 11/28/18 11:26

Matrix: Water

Date Received: 12/01/18 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			404513	12/06/18 18:40	CLP	TAL SL
Total/NA	Analysis	9315		1	407777	12/28/18 09:40	KLS	TAL SL
Total/NA	Prep	PrecSep_0			404516	12/06/18 19:14	CLP	TAL SL
Total/NA	Analysis	9320		1	406293	12/18/18 10:52	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	408243	12/29/18 15:37	RTM	TAL SL

Client Sample ID: AY27572 FB-1

Lab Sample ID: 400-162853-2

Date Collected: 11/28/18 10:56

Matrix: Water

Date Received: 12/01/18 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			404513	12/06/18 18:40	CLP	TAL SL
Total/NA	Analysis	9315		1	407777	12/28/18 09:40	KLS	TAL SL
Total/NA	Prep	PrecSep_0			404516	12/06/18 19:14	CLP	TAL SL
Total/NA	Analysis	9320		1	406293	12/18/18 10:52	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	408243	12/29/18 15:37	RTM	TAL SL

Client Sample ID: AY27573 MW-17

Lab Sample ID: 400-162853-3

Date Collected: 11/28/18 13:15

Matrix: Water

Date Received: 12/01/18 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			404513	12/06/18 18:40	CLP	TAL SL
Total/NA	Analysis	9315		1	407777	12/28/18 09:40	KLS	TAL SL
Total/NA	Prep	PrecSep_0			404516	12/06/18 19:14	CLP	TAL SL
Total/NA	Analysis	9320		1	406293	12/18/18 10:52	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	408243	12/29/18 15:37	RTM	TAL SL

Client Sample ID: AY27574 MW-17 DUP

Lab Sample ID: 400-162853-4

Date Collected: 11/28/18 13:15

Matrix: Water

Date Received: 12/01/18 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			404513	12/06/18 18:40	CLP	TAL SL
Total/NA	Analysis	9315		1	407777	12/28/18 09:40	KLS	TAL SL
Total/NA	Prep	PrecSep_0			404516	12/06/18 19:14	CLP	TAL SL
Total/NA	Analysis	9320		1	406293	12/18/18 10:52	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	408243	12/29/18 15:37	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
SDG: Gadsden Ash Pond 1188

Client Sample ID: AY27575 EB-1

Lab Sample ID: 400-162853-5

Date Collected: 11/28/18 13:52

Matrix: Water

Date Received: 12/01/18 15:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			404513	12/06/18 18:40	CLP	TAL SL
Total/NA	Analysis	9315		1	407777	12/28/18 09:40	KLS	TAL SL
Total/NA	Prep	PrecSep_0			404516	12/06/18 19:14	CLP	TAL SL
Total/NA	Analysis	9320		1	406293	12/18/18 10:52	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	408243	12/29/18 15:37	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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
SDG: Gadsden Ash Pond 1188

Rad

Prep Batch: 404513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162853-1	AY27571 MW-16	Total/NA	Water	PrecSep-21	
400-162853-2	AY27572 FB-1	Total/NA	Water	PrecSep-21	
400-162853-3	AY27573 MW-17	Total/NA	Water	PrecSep-21	
400-162853-4	AY27574 MW-17 DUP	Total/NA	Water	PrecSep-21	
400-162853-5	AY27575 EB-1	Total/NA	Water	PrecSep-21	
MB 160-404513/22-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-404513/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-162853-3 DU	AY27573 MW-17	Total/NA	Water	PrecSep-21	

Prep Batch: 404516

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-162853-1	AY27571 MW-16	Total/NA	Water	PrecSep_0	
400-162853-2	AY27572 FB-1	Total/NA	Water	PrecSep_0	
400-162853-3	AY27573 MW-17	Total/NA	Water	PrecSep_0	
400-162853-4	AY27574 MW-17 DUP	Total/NA	Water	PrecSep_0	
400-162853-5	AY27575 EB-1	Total/NA	Water	PrecSep_0	
MB 160-404516/22-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-404516/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-162853-3 DU	AY27573 MW-17	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-404513/22-A
Matrix: Water
Analysis Batch: 407767

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 404513

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.03084	U	0.0478	0.0479	1.00	0.123	pCi/L	12/06/18 18:40	12/28/18 09:44	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110					12/06/18 18:40	12/28/18 09:44	1

Lab Sample ID: LCS 160-404513/1-A
Matrix: Water
Analysis Batch: 407777

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 404513

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	14.63		1.52	1.00	0.127	pCi/L	97	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	95.3		40 - 110						

Lab Sample ID: 400-162853-3 DU
Matrix: Water
Analysis Batch: 407777

Client Sample ID: AY27573 MW-17
Prep Type: Total/NA
Prep Batch: 404513

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.188		0.1583		0.103	1.00	0.135	pCi/L	0.14	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	99.1		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-404516/22-A
Matrix: Water
Analysis Batch: 406245

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 404516

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.02165	U	0.263	0.263	1.00	0.470	pCi/L	12/06/18 19:14	12/18/18 10:55	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110					12/06/18 19:14	12/18/18 10:55	1
Y Carrier	84.5		40 - 110					12/06/18 19:14	12/18/18 10:55	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

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

Lab Sample ID: LCS 160-404516/1-A
Matrix: Water
Analysis Batch: 406293

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 404516

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	12.2	12.11		1.41	1.00	0.523	pCi/L	100	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	95.3		40 - 110
Y Carrier	83.4		40 - 110

Lab Sample ID: 400-162853-3 DU
Matrix: Water
Analysis Batch: 406293

Client Sample ID: AY27573 MW-17
Prep Type: Total/NA
Prep Batch: 404516

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.240	U	0.4023	U	0.303	1.00	0.473	pCi/L	0.27	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	99.1		40 - 110
Y Carrier	84.5		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-162853-3 DU
Matrix: Water
Analysis Batch: 408243

Client Sample ID: AY27573 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.428	U	0.5606		0.320	5.00	0.473	pCi/L	0.21	

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-162853-2
SDG Number: Gadsden Ash Pond 1188

Login Number: 162853

List Number: 1

Creator: Whitmire, Cheyenne R

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	18.2°C IR7 - Rads
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-162853-2
SDG Number: Gadsden Ash Pond 1188

Login Number: 162853
List Number: 2
Creator: Dupart, Lacey S

List Source: TestAmerica St. Louis
List Creation: 12/04/18 11:04 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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	18.0
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	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
 SDG: Gadsden Ash Pond 1188

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	01-12-20
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	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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

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	12-08-19
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	10-31-19
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	06-30-19
Missouri	State Program	7	780	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-162853-2
SDG: Gadsden Ash Pond 1188

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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1189
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks, Greg Dyer, & Corey Ladner
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control: Laura Midkiff
Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2018.12.27 14:23:05 -0600

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2018.12.28 14:59:25 -0600



Metals ICP

Gadsden Ash Pond

WMWGADAP_1189

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY27905	634963	WMWGADAP_1189
AY27906	634963	WMWGADAP_1189
AY28177	634963	WMWGADAP_1189
AY28178	634963	WMWGADAP_1189
AY28179	634963	WMWGADAP_1189
AY28180	634963	WMWGADAP_1189
AY28181	634963	WMWGADAP_1189
AY28182	634963	WMWGADAP_1189
AY28183	634963	WMWGADAP_1189
AY28184	634963	WMWGADAP_1189
AY28185	634964	WMWGADAP_1189
AY28186	634964	WMWGADAP_1189
AY28187	634964	WMWGADAP_1189
AY28188	634964	WMWGADAP_1189
AY28189	634964	WMWGADAP_1189
AY28190	634964	WMWGADAP_1189
AY28191	634964	WMWGADAP_1189
AY28192	634964	WMWGADAP_1189
AY28193	634964	WMWGADAP_1189
AY28194	634964	WMWGADAP_1189
AY28195	634965	WMWGADAP_1189
AY28196	634965	WMWGADAP_1189
AY28197	634965	WMWGADAP_1189

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes, however, CCB following AY28184 was not analyzed initially because the internal standard line came off during run. It was placed back on with analyses done on CCV and CCB with acceptable results.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met, except for the following:
 - AY28184 Calcium MS/MSD spike level is less than 30% of the sample nominal concentration.
- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.



7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects, except for the following:

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AY27905	Calcium	x10.15
AY28183	Calcium	x10.15
AY28184	Calcium	x10.15
AY28184MS	Calcium	x10.15
AY28184MSD	Calcium	x10.15

8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1189

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY27905	634735	WMWGADAP_1189
AY27906	634735	WMWGADAP_1189
AY28177	634735	WMWGADAP_1189
AY28178	634735	WMWGADAP_1189
AY28179	634735	WMWGADAP_1189
AY28180	634735	WMWGADAP_1189
AY28181	634735	WMWGADAP_1189
AY28182	634735	WMWGADAP_1189
AY28183	634735	WMWGADAP_1189
AY28184	634735	WMWGADAP_1189
AY28185	634736	WMWGADAP_1189
AY28186	634736	WMWGADAP_1189
AY28187	634736	WMWGADAP_1189
AY28188	634736	WMWGADAP_1189
AY28189	634736	WMWGADAP_1189
AY28190	634736	WMWGADAP_1189
AY28191	634736	WMWGADAP_1189
AY28192	634736	WMWGADAP_1189
AY28193	634736	WMWGADAP_1189
AY28194	634736	WMWGADAP_1189
AY28195	634737	WMWGADAP_1189
AY28196	634737	WMWGADAP_1189
AY28197	634737	WMWGADAP_1189

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1189

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY27905	634625	WMWGADAP_1189
AY27906	634625	WMWGADAP_1189
AY28177	634625	WMWGADAP_1189
AY28178	634625	WMWGADAP_1189
AY28179	634625	WMWGADAP_1189
AY28180	634625	WMWGADAP_1189
AY28181	634625	WMWGADAP_1189
AY28182	634625	WMWGADAP_1189
AY28183	634625	WMWGADAP_1189
AY28184	634625	WMWGADAP_1189
AY28185	634626	WMWGADAP_1189
AY28186	634626	WMWGADAP_1189
AY28187	634626	WMWGADAP_1189
AY28188	634626	WMWGADAP_1189
AY28189	634626	WMWGADAP_1189
AY28190	634626	WMWGADAP_1189
AY28191	634626	WMWGADAP_1189
AY28192	634626	WMWGADAP_1189
AY28193	634626	WMWGADAP_1189
AY28194	634626	WMWGADAP_1189
AY28195	634627	WMWGADAP_1189
AY28196	634627	WMWGADAP_1189
AY28197	634627	WMWGADAP_1189

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1189

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY27905	634466	WMWGADAP_1189
AY27906	634466	WMWGADAP_1189
AY28177	634466	WMWGADAP_1189
AY28178	634467	WMWGADAP_1189
AY28179	634467	WMWGADAP_1189
AY28180	634467	WMWGADAP_1189
AY28181	634467	WMWGADAP_1189
AY28182	634467	WMWGADAP_1189
AY28183	634467	WMWGADAP_1189
AY28184	634467	WMWGADAP_1189
AY28185	634467	WMWGADAP_1189
AY28186	634467	WMWGADAP_1189
AY28187	634467	WMWGADAP_1189
AY28188	634751	WMWGADAP_1189
AY28189	634751	WMWGADAP_1189
AY28190	634751	WMWGADAP_1189
AY28191	634751	WMWGADAP_1189
AY28192	634751	WMWGADAP_1189
AY28193	634751	WMWGADAP_1189
AY28194	634751	WMWGADAP_1189
AY28195	634751	WMWGADAP_1189
AY28196	634751	WMWGADAP_1189
AY28197	634751	WMWGADAP_1189

4. All of the above samples analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AY28182
 - AY28189
 - AY28197

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 03-Dec-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY27905

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0545	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	1.05	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		10.15	1.015	5.075	105	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	0.0238	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	492	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 03-Dec-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY27905

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
			MB	Limit								
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.0034 to 0.0046	102	70 to 130	1.71	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.085 to 0.115	104	70 to 130	2.27	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.085 to 0.115	94.3	70 to 130	3.31	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.085 to 0.115	109	70 to 130	1.63	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	0.85 to 1.15	108	70 to 130	0.464	20

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 Calera, AL 35040
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 03-Dec-18

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AY27905

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28177	Solids, Dissolved	mg/L	0.0000	25			42.7	54.0	40 to 60			3.76	5

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Expiration: June 30, 2019

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CC:

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 (205) 664-6032 or 6171
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Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 03-Dec-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY27906

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	0.0119	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.214	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	0.510	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	32.3	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	0.0228	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	168	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 03-Dec-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY27906

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec
			MB	Limit					Limit	Rec	Limit	Prec	
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.106	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.102	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.196	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.0911	0.085 to 0.115	94.3	70 to 130	3.31	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.0986	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.100	0.085 to 0.115	109	70 to 130	1.63	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.101	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	1.01	0.85 to 1.15	108	70 to 130	0.464	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.110	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	5.20	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.00430	0.0034 to 0.0046	102	70 to 130	1.71	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.0985	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.105	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.105	0.085 to 0.115	104	70 to 130	2.27	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 03-Dec-18

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AY27906

Sample	Analysis	Units	MB	MB Limit	Spike	LFM	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AY28177	Solids, Dissolved	mg/L	0.0000	25			42.7	54.0	40 to 60			3.76	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY28177

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0307	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	3.79	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	46.0	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY28177

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.101	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	1.01	0.85 to 1.15	108	70 to 130	0.464	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.0986	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.100	0.085 to 0.115	109	70 to 130	1.63	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.110	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	5.20	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.00430	0.0034 to 0.0046	102	70 to 130	1.71	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.0985	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.105	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.105	0.085 to 0.115	104	70 to 130	2.27	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.106	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.102	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.196	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.0911	0.085 to 0.115	94.3	70 to 130	3.31	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AY28177

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28177	Solids, Dissolved	mg/L	0.0000	25			42.7	54.0	40 to 60			3.76	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY28178

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.126	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	3.67	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	J 0.00227	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	48.7	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY28178

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
			MB	Limit						Rec	Limit		
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.0986	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.100	0.085 to 0.115	109	70 to 130	1.63	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.0985	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.105	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.105	0.085 to 0.115	104	70 to 130	2.27	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.101	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	1.01	0.85 to 1.15	108	70 to 130	0.464	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.106	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.102	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.196	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.0911	0.085 to 0.115	94.3	70 to 130	3.31	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.110	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	5.20	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.00430	0.0034 to 0.0046	102	70 to 130	1.71	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AY28178

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60		0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY28179

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0784	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	33.7	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	127	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY28179

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec
			Limit	MB					Limit	Rec	Limit	Prec	
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.0986	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.100	0.085 to 0.115	109	70 to 130	1.63	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.101	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	1.01	0.85 to 1.15	108	70 to 130	0.464	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.106	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.102	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.196	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.0911	0.085 to 0.115	94.3	70 to 130	3.31	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.0985	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.105	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.105	0.085 to 0.115	104	70 to 130	2.27	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.110	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	5.20	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.00430	0.0034 to 0.0046	102	70 to 130	1.71	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AY28179

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY28180

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0780	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	34.3	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	133	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY28180

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.101	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	1.01	0.85 to 1.15	108	70 to 130	0.464	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.110	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	5.20	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.00430	0.0034 to 0.0046	102	70 to 130	1.71	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.0986	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.100	0.085 to 0.115	109	70 to 130	1.63	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.106	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.102	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.196	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.0911	0.085 to 0.115	94.3	70 to 130	3.31	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.0985	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.105	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.105	0.085 to 0.115	104	70 to 130	2.27	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AY28180

Sample	Analysis	Units	MB	MB	Limit	Spike	LFM	Sample	LCS	Rec	Prec
				Limit				Duplicate	LCS	Limit	Prec
AY28187	Solids, Dissolved	mg/L	0.0000	25				122	54.0	40 to 60	0.549
											5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY28181

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0633	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	J 0.0568	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	16.6	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	102	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY28181

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit
			MB	Limit					Rec	Limit		
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	0.85 to 1.15	108	70 to 130	0.464	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.0034 to 0.0046	102	70 to 130	1.71	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.085 to 0.115	109	70 to 130	1.63	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.085 to 0.115	94.3	70 to 130	3.31	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.085 to 0.115	104	70 to 130	2.27	20

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AY28181

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60			0.549	5

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Laboratory certification ID: E571114

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Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28182

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28182

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit
			MB	Limit					Rec	Limit		
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.0034 to 0.0046	102	70 to 130	1.71	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.102	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.085 to 0.115	94.3	70 to 130	3.31	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	0.85 to 1.15	108	70 to 130	0.464	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.085 to 0.115	104	70 to 130	2.27	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.085 to 0.115	109	70 to 130	1.63	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 03-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28182

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY28183

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	0.553	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0589	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	0.737	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		10.15	1.015	5.075	120	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	0.0252	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	0.0474	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0118	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	504	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY28183

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.0953	0.085 to 0.115		98.7	70 to 130	3.50	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.101	0.085 to 0.115		99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	1.01	0.85 to 1.15		108	70 to 130	0.464	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.0986	0.085 to 0.115		99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.100	0.085 to 0.115		109	70 to 130	1.63	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.106	0.103	0.085 to 0.115		106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.102	0.085 to 0.115		108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.196	0.17 to 0.23		120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.0911	0.085 to 0.115		94.3	70 to 130	3.31	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.110	0.085 to 0.115		106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	5.20	4.25 to 5.75		-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.00430	0.0034 to 0.0046		102	70 to 130	1.71	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.0985	0.085 to 0.115		99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.105	0.085 to 0.115		102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.105	0.085 to 0.115		104	70 to 130	2.27	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AY28183

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			0.0000	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY28184

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00471	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0434	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	1.08	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		10.15	1.015	5.075	254	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	0.0166	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		50	1090	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Recovery for Calcium is out of spec. Spike amount is less than 30% of the sample amount. LBM 12/26/2018

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY28184

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit
			MB	Limit					Rec	Limit		
AY28184	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0987	0.0953	0.085 to 0.115	98.7	70 to 130	3.50	20
AY28184	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0998	0.0991	0.085 to 0.115	99.8	70 to 130	0.738	20
AY28184	Boron, Total	mg/L	0.000721	0.044	1.00	2.16	2.15	0.85 to 1.15	108	70 to 130	0.464	20
AY28184	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.116	0.113	0.085 to 0.115	99.5	70 to 130	2.89	20
AY28184	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.109	0.107	0.085 to 0.115	109	70 to 130	1.63	20
AY28184	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.106	0.0989	0.085 to 0.115	106	70 to 130	7.17	20
AY28184	Calcium, Total	mg/L	0.00740	0.22	5.00	250	252	4.25 to 5.75	-82.3	70 to 130	0.851	20
AY28184	Mercury, Total by CVAA	mg/L	0.0000381	0.0005	0.004	0.00409	0.00416	0.0034 to 0.0046	102	70 to 130	1.71	20
AY28184	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.143	0.142	0.085 to 0.115	99.6	70 to 130	0.351	20
AY28184	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.102	0.101	0.085 to 0.115	102	70 to 130	1.15	20
AY28184	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.104	0.101	0.085 to 0.115	104	70 to 130	2.27	20
AY28184	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.110	0.103	0.085 to 0.115	106	70 to 130	3.64	20
AY28184	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.108	0.106	0.085 to 0.115	108	70 to 130	2.09	20
AY28184	Lithium, Total	mg/L	-0.0000364	0.022	0.200	0.239	0.240	0.17 to 0.23	120	70 to 130	0.418	20
AY28184	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0943	0.0912	0.085 to 0.115	94.3	70 to 130	3.31	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Recovery for Calcium is out of spec. Spike amount is less than 30% of the sample amount. LBM 12/26/2018

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AY28184

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Recovery for Calcium is out of spec. Spike amount is less than 30% of the sample amount. LBM 12/26/2018

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY28185

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00271	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.331	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	0.124	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	74.0	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	343	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY28185

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec Limit	
			MB	Limit					Limit	Rec	Limit	Prec		
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115		103	70 to 130	1.04	20
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115		97.1	70 to 130	1.43	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75		96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115		97.4	70 to 130	0.748	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115		98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115		89.4	70 to 130	0.398	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115		107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115		103	70 to 130	2.64	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115		110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115		104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046		103	70 to 130	1.62	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115		93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115		107	70 to 130	0.0158	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15		102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23		106	70 to 130	0.458	20

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AY28185

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY28186

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00332	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.305	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	0.103	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	42.1	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	J 0.000302	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	215	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY28186

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec
			MB	Limit					Limit	Rec	Limit	Prec	
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115	103	70 to 130	1.04	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115	107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115	103	70 to 130	2.64	20
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115	97.1	70 to 130	1.43	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115	93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115	107	70 to 130	0.0158	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15	102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23	106	70 to 130	0.458	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75	96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115	97.4	70 to 130	0.748	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115	110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115	104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046	103	70 to 130	1.62	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115	98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115	89.4	70 to 130	0.398	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AY28186

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60			0.549	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY28187

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0789	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	J 0.0850	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	19.0	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	J 0.000340	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/12/2018	SM 2540C		1		25	121	mg/L
Filter Completion Date	CRB	12/7/2018	SM 2540C		1			12/07/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY28187

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	
				Limit	Spike				Limit	Rec	Limit	Prec		
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115		103	70 to 130	1.04	20
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115		97.1	70 to 130	1.43	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115		98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115		89.4	70 to 130	0.398	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115		110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115		104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046		103	70 to 130	1.62	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115		93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115		107	70 to 130	0.0158	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115		107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115		103	70 to 130	2.64	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15		102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23		106	70 to 130	0.458	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75		96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115		97.4	70 to 130	0.748	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AY28187

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY28187	Solids, Dissolved	mg/L	0.0000	25			122	54.0	40 to 60		0.549	5

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY28188

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00328	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.189	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	J 0.0617	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	51.9	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	J 0.000284	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	213	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY28188

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115		97.1	70 to 130	1.43	20
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115		103	70 to 130	1.04	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75		96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115		97.4	70 to 130	0.748	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115		107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115		103	70 to 130	2.64	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115		110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115		104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046		103	70 to 130	1.62	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115		98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115		89.4	70 to 130	0.398	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115		93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115		107	70 to 130	0.0158	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15		102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23		106	70 to 130	0.458	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AY28188

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60			0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28189

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28189

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Limit	
			MB	Limit					Rec	Limit			
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115	97.1	70 to 130	1.43	20
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115	103	70 to 130	1.04	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75	96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115	97.4	70 to 130	0.748	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115	98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115	89.4	70 to 130	0.398	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115	110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115	104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046	103	70 to 130	1.62	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115	107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115	103	70 to 130	2.64	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15	102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23	106	70 to 130	0.458	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115	93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115	107	70 to 130	0.0158	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 04-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28189

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60			0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY28190

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.209	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	J 0.0363	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	25.3	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	J 0.0124	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	J 0.00256	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	185	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY28190

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115		103	70 to 130		1.04	20
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115		97.1	70 to 130		1.43	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115		107	70 to 130		0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115		103	70 to 130		2.64	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15		102	70 to 130		0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23		106	70 to 130		0.458	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115		110	70 to 130		5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115		104	70 to 130		4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046		103	70 to 130		1.62	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115		98.7	70 to 130		1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115		89.4	70 to 130		0.398	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115		93.9	70 to 130		0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115		107	70 to 130		0.0158	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75		96.1	70 to 130		0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115		97.4	70 to 130		0.748	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY28190

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY28191

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00113	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0475	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	14.8	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000317	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	0.0161	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	J 0.00349	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	103	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY28191

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115	103	70 to 130	1.04	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115	107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115	103	70 to 130	2.64	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75	96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115	97.4	70 to 130	0.748	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115	93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115	107	70 to 130	0.0158	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115	110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115	104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046	103	70 to 130	1.62	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15	102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23	106	70 to 130	0.458	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115	98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115	89.4	70 to 130	0.398	20
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115	97.1	70 to 130	1.43	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY28191

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec
			Limit	Limit			Duplicate	LCS	Limit	Limit	Limit	Limit
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60		0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY28192

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0256	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	J 0.00141	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	9.14	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000307	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	0.0215	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	J 0.000253	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00117	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	J 0.00208	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	101	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY28192

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	
				Limit	Spike				Limit	Rec	Limit	Prec		
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115		103	70 to 130	1.04	20
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115		97.1	70 to 130	1.43	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115		93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115		107	70 to 130	0.0158	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115		107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115		103	70 to 130	2.64	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75		96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115		97.4	70 to 130	0.748	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15		102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23		106	70 to 130	0.458	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115		110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115		104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046		103	70 to 130	1.62	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115		98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115		89.4	70 to 130	0.398	20

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MDL's and RL's are adjusted for sample dilution, as applicable

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AY28192

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60			0.00	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-14 DUP

Laboratory ID Number: AY28193

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0257	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	J 0.000800	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	9.13	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	0.0215	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	J 0.000254	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00120	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	J 0.00214	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	102	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-14 DUP

Laboratory ID Number: AY28193

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec Limit	
			Limit	MB					Limit	Rec	Limit	Prec		
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115		103	70 to 130	1.04	20
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115		97.1	70 to 130	1.43	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115		107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115		103	70 to 130	2.64	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15		102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23		106	70 to 130	0.458	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75		96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115		97.4	70 to 130	0.748	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115		110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115		104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046		103	70 to 130	1.62	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115		93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115		107	70 to 130	0.0158	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115		98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115		89.4	70 to 130	0.398	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-14 DUP

Laboratory ID Number: AY28193

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60			0.00	5

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Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY28194

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.245	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	0.456	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	36.3	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	J 0.00233	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	177	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY28194

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec Limit	
			MB	Limit					Limit	Rec	Limit	Prec		
AY28194	Arsenic, Total	mg/L	0.0000279	0.0022	0.10	0.103	0.102	0.103	0.085 to 0.115		103	70 to 130	1.04	20
AY28194	Cobalt, Total	mg/L	0.00000443	0.0044	0.10	0.0994	0.0980	0.0986	0.085 to 0.115		97.1	70 to 130	1.43	20
AY28194	Lead, Total	mg/L	0.0000149	0.0022	0.10	0.107	0.106	0.102	0.085 to 0.115		107	70 to 130	0.805	20
AY28194	Selenium, Total	mg/L	0.0000531	0.0044	0.10	0.103	0.101	0.105	0.085 to 0.115		103	70 to 130	2.64	20
AY28194	Barium, Total	mg/L	0.0000114	0.0044	0.10	0.339	0.337	0.0985	0.085 to 0.115		93.9	70 to 130	0.319	20
AY28194	Thallium, Total	mg/L	0.00000929	0.00044	0.10	0.107	0.107	0.100	0.085 to 0.115		107	70 to 130	0.0158	20
AY28194	Calcium, Total	mg/L	0.000343	0.22	5.00	41.1	40.8	5.17	4.25 to 5.75		96.1	70 to 130	0.707	20
AY28194	Chromium, Total	mg/L	0.000118	0.0044	0.10	0.0974	0.0967	0.0953	0.085 to 0.115		97.4	70 to 130	0.748	20
AY28194	Boron, Total	mg/L	0.000585	0.044	1.00	1.48	1.48	1.02	0.85 to 1.15		102	70 to 130	0.111	20
AY28194	Lithium, Total	mg/L	-0.00000990	0.022	0.20	0.212	0.213	0.197	0.17 to 0.23		106	70 to 130	0.458	20
AY28194	Antimony, Total	mg/L	0.000117	0.00176	0.10	0.0987	0.0976	0.101	0.085 to 0.115		98.7	70 to 130	1.14	20
AY28194	Molybdenum, Total	mg/L	0.0000339	0.0044	0.10	0.0894	0.0897	0.0911	0.085 to 0.115		89.4	70 to 130	0.398	20
AY28194	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.110	0.104	0.110	0.085 to 0.115		110	70 to 130	5.55	20
AY28194	Cadmium, Total	mg/L	0.00000825	0.00066	0.10	0.104	0.0996	0.105	0.085 to 0.115		104	70 to 130	4.09	20
AY28194	Mercury, Total by CVAA	mg/L	0.0000638	0.0005	0.004	0.00411	0.00405	0.00431	0.0034 to 0.0046		103	70 to 130	1.62	20

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Alabama Power General Test Laboratory
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 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AY28194

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60			0.00	5

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Expiration: June 30, 2019

Comments:

CC:

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY28195

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	J 0.00111	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.186	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	J 0.0561	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	43.8	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	200	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

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Comments:

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 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY28195

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Limit	
			MB	Limit					Rec	Limit			
AY28197	Thallium, Total	mg/L	0.0000123	0.00044	0.10	0.106	0.107	0.102	0.085 to 0.115	106	70 to 130	1.11	20
AY28197	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.112	0.109	0.111	0.085 to 0.115	112	70 to 130	2.05	20
AY28197	Cobalt, Total	mg/L	0.00000594	0.0044	0.10	0.0972	0.0976	0.0986	0.085 to 0.115	97.2	70 to 130	0.451	20
AY28197	Selenium, Total	mg/L	0.0000325	0.0044	0.10	0.105	0.105	0.107	0.085 to 0.115	105	70 to 130	0.179	20
AY28197	Antimony, Total	mg/L	0.0000761	0.00176	0.10	0.0970	0.0970	0.0995	0.085 to 0.115	97.0	70 to 130	0.0117	20
AY28197	Chromium, Total	mg/L	0.0000512	0.0044	0.10	0.0960	0.0982	0.0971	0.085 to 0.115	96.0	70 to 130	2.25	20
AY28197	Barium, Total	mg/L	-0.00000289	0.0044	0.10	0.0986	0.0990	0.0997	0.085 to 0.115	98.6	70 to 130	0.348	20
AY28197	Lithium, Total	mg/L	0.00000521	0.022	0.20	0.201	0.199	0.200	0.17 to 0.23	100	70 to 130	0.710	20
AY28197	Molybdenum, Total	mg/L	0.0000235	0.0044	0.10	0.0877	0.0890	0.0912	0.085 to 0.115	87.7	70 to 130	1.47	20
AY28197	Arsenic, Total	mg/L	0.0000220	0.0022	0.10	0.0996	0.102	0.104	0.085 to 0.115	99.6	70 to 130	2.78	20
AY28197	Calcium, Total	mg/L	0.00180	0.22	5.00	5.21	5.21	5.20	4.25 to 5.75	104	70 to 130	0.116	20
AY28197	Lead, Total	mg/L	0.0000125	0.0022	0.10	0.106	0.107	0.103	0.085 to 0.115	106	70 to 130	0.934	20
AY28197	Boron, Total	mg/L	0.0000257	0.044	1.00	1.01	0.993	1.01	0.85 to 1.15	101	70 to 130	1.76	20
AY28197	Cadmium, Total	mg/L	0.0000117	0.00066	0.10	0.101	0.103	0.104	0.085 to 0.115	101	70 to 130	1.78	20
AY28197	Mercury, Total by CVAA	mg/L	0.0000210	0.0005	0.004	0.00358	0.00380	0.00412	0.0034 to 0.0046	89.5	70 to 130	5.89	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AY28195

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60			0.00	5

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY28196

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	0.0493	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	J 0.0652	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	64.3	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	J 0.000661	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	J 0.00466	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	479	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY28196

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AY28197	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.112	0.109	0.111	0.085 to 0.115	112	70 to 130	2.05	20
AY28197	Cobalt, Total	mg/L	0.00000594	0.0044	0.10	0.0972	0.0976	0.0986	0.085 to 0.115	97.2	70 to 130	0.451	20
AY28197	Thallium, Total	mg/L	0.0000123	0.00044	0.10	0.106	0.107	0.102	0.085 to 0.115	106	70 to 130	1.11	20
AY28197	Barium, Total	mg/L	-0.00000289	0.0044	0.10	0.0986	0.0990	0.0997	0.085 to 0.115	98.6	70 to 130	0.348	20
AY28197	Lithium, Total	mg/L	0.00000521	0.022	0.20	0.201	0.199	0.200	0.17 to 0.23	100	70 to 130	0.710	20
AY28197	Molybdenum, Total	mg/L	0.0000235	0.0044	0.10	0.0877	0.0890	0.0912	0.085 to 0.115	87.7	70 to 130	1.47	20
AY28197	Antimony, Total	mg/L	0.0000761	0.00176	0.10	0.0970	0.0970	0.0995	0.085 to 0.115	97.0	70 to 130	0.0117	20
AY28197	Chromium, Total	mg/L	0.0000512	0.0044	0.10	0.0960	0.0982	0.0971	0.085 to 0.115	96.0	70 to 130	2.25	20
AY28197	Selenium, Total	mg/L	0.0000325	0.0044	0.10	0.105	0.105	0.107	0.085 to 0.115	105	70 to 130	0.179	20
AY28197	Arsenic, Total	mg/L	0.0000220	0.0022	0.10	0.0996	0.102	0.104	0.085 to 0.115	99.6	70 to 130	2.78	20
AY28197	Calcium, Total	mg/L	0.00180	0.22	5.00	5.21	5.21	5.20	4.25 to 5.75	104	70 to 130	0.116	20
AY28197	Lead, Total	mg/L	0.0000125	0.0022	0.10	0.106	0.107	0.103	0.085 to 0.115	106	70 to 130	0.934	20
AY28197	Boron, Total	mg/L	0.0000257	0.044	1.00	1.01	0.993	1.01	0.85 to 1.15	101	70 to 130	1.76	20
AY28197	Cadmium, Total	mg/L	0.0000117	0.00066	0.10	0.101	0.103	0.104	0.085 to 0.115	101	70 to 130	1.78	20
AY28197	Mercury, Total by CVAA	mg/L	0.0000210	0.0005	0.004	0.00358	0.00380	0.00412	0.0034 to 0.0046	89.5	70 to 130	5.89	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AY28196

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60		0.00	5

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY28197

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	12/17/2018	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/14/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	12/17/2018	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	12/14/2018	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CES	12/14/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	12/11/2018	SM 2540C		1			12/11/2018	Date

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY28197

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AY28197	Thallium, Total	mg/L	0.0000123	0.00044	0.10	0.106	0.107	0.102	0.085 to 0.115		106	70 to 130		1.11	20
AY28197	Cobalt, Total	mg/L	0.00000594	0.0044	0.10	0.0972	0.0976	0.0986	0.085 to 0.115		97.2	70 to 130		0.451	20
AY28197	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.112	0.109	0.111	0.085 to 0.115		112	70 to 130		2.05	20
AY28197	Selenium, Total	mg/L	0.0000325	0.0044	0.10	0.105	0.105	0.107	0.085 to 0.115		105	70 to 130		0.179	20
AY28197	Antimony, Total	mg/L	0.0000761	0.00176	0.10	0.0970	0.0970	0.0995	0.085 to 0.115		97.0	70 to 130		0.0117	20
AY28197	Chromium, Total	mg/L	0.0000512	0.0044	0.10	0.0960	0.0982	0.0971	0.085 to 0.115		96.0	70 to 130		2.25	20
AY28197	Barium, Total	mg/L	-0.00000289	0.0044	0.10	0.0986	0.0990	0.0997	0.085 to 0.115		98.6	70 to 130		0.348	20
AY28197	Lithium, Total	mg/L	0.00000521	0.022	0.20	0.201	0.199	0.200	0.17 to 0.23		100	70 to 130		0.710	20
AY28197	Molybdenum, Total	mg/L	0.0000235	0.0044	0.10	0.0877	0.0890	0.0912	0.085 to 0.115		87.7	70 to 130		1.47	20
AY28197	Arsenic, Total	mg/L	0.0000220	0.0022	0.10	0.0996	0.102	0.104	0.085 to 0.115		99.6	70 to 130		2.78	20
AY28197	Calcium, Total	mg/L	0.00180	0.22	5.00	5.21	5.21	5.20	4.25 to 5.75		104	70 to 130		0.116	20
AY28197	Lead, Total	mg/L	0.0000125	0.0022	0.10	0.106	0.107	0.103	0.085 to 0.115		106	70 to 130		0.934	20
AY28197	Boron, Total	mg/L	0.0000257	0.044	1.00	1.01	0.993	1.01	0.85 to 1.15		101	70 to 130		1.76	20
AY28197	Cadmium, Total	mg/L	0.0000117	0.00066	0.10	0.101	0.103	0.104	0.085 to 0.115		101	70 to 130		1.78	20
AY28197	Mercury, Total by CVAA	mg/L	0.0000210	0.0005	0.004	0.00358	0.00380	0.00412	0.0034 to 0.0046		89.5	70 to 130		5.89	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 05-Dec-18
 Customer ID:
 Delivery Date: 06-Dec-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY28197

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28197	Solids, Dissolved	mg/L	0.0000	25			0.67	55.0	40 to 60			0.00	5

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Laboratory certification ID: E571114

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Comments:

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information



Chain of Custody Groundwater

APC General Testing Laboratory

Field Complete

Outside Lab

Lab Complete

Lab ETA 12/06/2018 09:00

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer, Corey Ladner
Site Representative	Gerson Pickett	Requested By	Corey Ladner
Collector	Ben Rothschild	Location	Gadsden Ash Pond

Bottles	1	Metals	500 mL	3	TDS	500 mL	5	N/A	N/A	7	N/A	N/A
	2	Hg	250 mL	4	N/A	N/A	6	N/A	N/A	8	N/A	N/A

Comments

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
PZ-6	12/3/18	11:40	3	Groundwater		AY28177
PZ-5	12/03/2018	13:13	3	Groundwater		AY28178
PZ-1	12/03/2018	14:48	3	Groundwater		AY28179
PZ-1 DUP	12/03/2018	14:48	3	Sample Duplicate		AY28180
MW-6	12/03/2018	15:52	3	Groundwater		AY28181
FB-1	12/03/2018	16:15	3	Field Blank		AY28182
MW-2	12/04/2018	09:34	3	Groundwater		AY28183
MW-1	12/04/2018	10:26	3	Groundwater		AY28184
MW-11	12/04/2018	12:07	3	Groundwater		AY28185
MW-10	12/04/2018	13:05	3	Groundwater		AY28186
MW-7	12/04/2018	14:36	3	Groundwater		AY28187
MW-8	12/04/2018	15:58	3	Groundwater		AY28188
FB-2	12/04/2018	16:25	3	Field Blank		AY28189
MW-17	12/05/2018	10:36	3	Groundwater		AY28190
MW-16	12/05/2018	11:53	3	Groundwater		AY28191
MW-14	12/05/2018	12:53	3	Groundwater		AY28192
MW-14 DUP	12/05/2018	12:53	3	Sample Duplicate		AY28193
MW-5	12/05/2018	14:16	3	Groundwater		AY28194
MW-9	12/05/2018	15:10	3	Groundwater		AY28195
MW-12	12/05/2018	16:09	3	Groundwater		AY28196
EB-1	12/05/2018	16:30	3	Equipment Blank		AY28197

Relinquished By	Received By	Date/Time
		12/06/2018 09:50

SmarTroll ID	6496-34170-1-1
Turbidity ID	4677-23342-4-1
Sample Event	1189

All metals and radiological bottles have pH < 2

Cooler Temp	0.5 degrees C
Thermometer ID	5408-27568-2-2
pH Strip ID	7114-38608-1-1



Chain of Custody

Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA 12/06/2018 09:00

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer, Corey Ladner
Site Representative	Gerson Pickett	Requested By	Corey Ladner
Collector	Ben Rothschild	Location	Gadsden Ash Pond

Bottles	1	Radium	1 L	3	N/A	N/A	5	N/A	N/A	7	N/A	N/A
	2	Anions	250 mL	4	N/A	N/A	6	N/A	N/A	8	N/A	N/A

Comments	Radium Duplicate Collected at PZ-6 and MW-1
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Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
PZ-6	12/3/18	11:40	4	Groundwater		AY28198
PZ-5	12/03/2018	13:13	2	Groundwater		AY28199
PZ-1	12/03/2018	14:48	2	Groundwater		AY28200
PZ-1 DUP	12/03/2018	14:48	2	Sample Duplicate		AY28201
MW-6	12/03/2018	15:52	2	Groundwater		AY28202
FB-1	12/03/2018	16:15	2	Field Blank		AY28203
MW-2	12/04/2018	09:34	2	Groundwater		AY28204
MW-1	12/04/2018	10:26	4	Groundwater		AY28205
MW-11	12/04/2018	12:07	2	Groundwater		AY28206
MW-10	12/04/2018	13:05	2	Groundwater		AY28207
MW-7	12/04/2018	14:36	2	Groundwater		AY28208
MW-8	12/04/2018	15:58	2	Groundwater		AY28209
FB-2	12/04/2018	16:25	2	Field Blank		AY28210
MW-17	12/05/2018	10:36	2	Groundwater		AY28211
MW-16	12/05/2018	11:53	2	Groundwater		AY28212
MW-14	12/05/2018	12:53	2	Groundwater		AY28213
MW-14 DUP	12/05/2018	12:53	2	Sample Duplicate		AY28214
MW-5	12/05/2018	14:16	2	Groundwater		AY28215
MW-9	12/05/2018	15:10	2	Groundwater		AY28216
MW-12	12/05/2018	16:09	2	Groundwater		AY28217
EB-1	12/05/2018	16:30	2	Equipment Blank		AY28218

Relinquished By	Received By	Date/Time
		12/06/2018 09:51

SmarTroll ID	6496-34170-1-1
Turbidity ID	4677-23342-4-1
Sample Event	1189

All metals and radiological bottles have pH < 2

Cooler Temp	0.5 degrees C
Thermometer ID	5408-27568-2-2
pH Strip ID	7114-38608-1-1

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: 400-163351-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1189

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

12/31/2018 5:45:16 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Job ID: 400-163351-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-163351-1

General Chemistry

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 424194 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control 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. (400-163388-B-17 MS), (400-163388-B-17 MSD), (400-163469-A-1 MS) and (400-163469-A-1 MSD)

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AY27907 MW-3 (400-163351-1), (400-163388-B-17), (400-163388-B-17 MS), (400-163388-B-17 MSD), (400-163469-A-1), (400-163469-A-1 MS) and (400-163469-A-1 MSD). 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. (400-163299-J-3 MS) and (400-163299-J-3 MSD)

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 424228 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: 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. The MS/MSD was spiked after the manual dilution. (400-163299-J-8 MS) and (400-163299-J-8 MSD)

Method(s) SM 4500 SO4 E: The matrix spike (MS) recoveries for analytical batch 424245 were outside control limits. Non-homogeneity is 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: AY28204 MW-2 (400-163351-9), AY28206 MW-11 (400-163351-10), AY28205 MW-1 (400-163351-23), (400-163299-J-3), (400-163299-J-3 MS), (400-163299-J-3 MSD), AY28212 MW-16 (400-163351-16), AY28213 MW-14 (400-163351-17), AY28214 MW-14 DUP (400-163351-18), AY28217 MW-12 (400-163351-21), (400-163299-J-8), (400-163299-J-8 MS) and (400-163299-J-8 MSD). Elevated reporting limits (RLs) are provided.

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Client Sample ID: AY27907 MW-3

Lab Sample ID: 400-163351-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	200		100	28	mg/L	20		SM 4500 SO4 E	Total/NA

Client Sample ID: AY27908 MW-4

Lab Sample ID: 400-163351-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	9.1		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.22		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA

Client Sample ID: AY28198 PZ-6

Lab Sample ID: 400-163351-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: AY28199 PZ-5

Lab Sample ID: 400-163351-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.6		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA

Client Sample ID: AY28200 PZ-1

Lab Sample ID: 400-163351-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.2		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2.1	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28201 PZ-1 DUP

Lab Sample ID: 400-163351-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.1		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	2.1	J	5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28202 MW-6

Lab Sample ID: 400-163351-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.7		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	12		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28203 FB-1

Lab Sample ID: 400-163351-8

No Detections.

Client Sample ID: AY28204 MW-2

Lab Sample ID: 400-163351-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.1		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.15		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	170		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28206 MW-11

Lab Sample ID: 400-163351-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.3		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	97		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28207 MW-10

Lab Sample ID: 400-163351-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.6		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	11		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28208 MW-7

Lab Sample ID: 400-163351-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.7		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.060	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	9.8		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28209 MW-8

Lab Sample ID: 400-163351-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	4.2		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.080	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	8.2		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28210 FB-2

Lab Sample ID: 400-163351-14

No Detections.

Client Sample ID: AY28211 MW-17

Lab Sample ID: 400-163351-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.2		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.19		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	12		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28212 MW-16

Lab Sample ID: 400-163351-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.3		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.11		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	51		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28213 MW-14

Lab Sample ID: 400-163351-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.2		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.070	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	54		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28214 MW-14 DUP

Lab Sample ID: 400-163351-18

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28214 MW-14 DUP (Continued)

Lab Sample ID: 400-163351-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	2.3		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.18		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	47		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28215 MW-5

Lab Sample ID: 400-163351-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.7		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	20		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28216 MW-9

Lab Sample ID: 400-163351-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.9		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	7.8		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28217 MW-12

Lab Sample ID: 400-163351-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.0		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Sulfate	280		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28218 EB-1

Lab Sample ID: 400-163351-22

No Detections.

Client Sample ID: AY28205 MW-1

Lab Sample ID: 400-163351-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.8		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.040	J	0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	580		150	42	mg/L	30		SM 4500 SO4 E	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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

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Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-163351-1	AY27907 MW-3	Water	12/03/18 10:02	12/11/18 09:18
400-163351-2	AY27908 MW-4	Water	12/03/18 10:56	12/11/18 09:18
400-163351-3	AY28198 PZ-6	Water	12/03/18 11:40	12/11/18 09:18
400-163351-4	AY28199 PZ-5	Water	12/03/18 13:13	12/11/18 09:18
400-163351-5	AY28200 PZ-1	Water	12/03/18 14:48	12/11/18 09:18
400-163351-6	AY28201 PZ-1 DUP	Water	12/03/18 14:48	12/11/18 09:18
400-163351-7	AY28202 MW-6	Water	12/03/18 15:52	12/11/18 09:18
400-163351-8	AY28203 FB-1	Water	12/03/18 16:15	12/11/18 09:18
400-163351-9	AY28204 MW-2	Water	12/04/18 09:34	12/11/18 09:18
400-163351-10	AY28206 MW-11	Water	12/04/18 12:07	12/11/18 09:18
400-163351-11	AY28207 MW-10	Water	12/04/18 13:05	12/11/18 09:18
400-163351-12	AY28208 MW-7	Water	12/04/18 14:36	12/11/18 09:18
400-163351-13	AY28209 MW-8	Water	12/04/18 15:58	12/11/18 09:18
400-163351-14	AY28210 FB-2	Water	12/04/18 16:25	12/11/18 09:18
400-163351-15	AY28211 MW-17	Water	12/05/18 10:36	12/11/18 09:18
400-163351-16	AY28212 MW-16	Water	12/05/18 11:53	12/11/18 09:18
400-163351-17	AY28213 MW-14	Water	12/05/18 12:53	12/11/18 09:18
400-163351-18	AY28214 MW-14 DUP	Water	12/05/18 12:53	12/11/18 09:18
400-163351-19	AY28215 MW-5	Water	12/05/18 14:16	12/11/18 09:18
400-163351-20	AY28216 MW-9	Water	12/05/18 15:10	12/11/18 09:18
400-163351-21	AY28217 MW-12	Water	12/05/18 16:09	12/11/18 09:18
400-163351-22	AY28218 EB-1	Water	12/05/18 16:30	12/11/18 09:18
400-163351-23	AY28205 MW-1	Water	12/04/18 10:26	12/11/18 09:18

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY27907 MW-3

Lab Sample ID: 400-163351-1

Date Collected: 12/03/18 10:02

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.8		2.0	1.4	mg/L			12/21/18 18:43	1
Fluoride	0.080	J	0.10	0.032	mg/L			12/20/18 16:33	1
Sulfate	200		100	28	mg/L			12/21/18 09:47	20

Client Sample ID: AY27908 MW-4

Lab Sample ID: 400-163351-2

Date Collected: 12/03/18 10:56

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	9.1		2.0	1.4	mg/L			12/21/18 18:46	1
Fluoride	0.22		0.10	0.032	mg/L			12/20/18 16:35	1
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 09:15	1

Client Sample ID: AY28198 PZ-6

Lab Sample ID: 400-163351-3

Date Collected: 12/03/18 11:40

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.8		2.0	1.4	mg/L			12/21/18 18:46	1
Fluoride	<0.032		0.10	0.032	mg/L			12/20/18 16:51	1
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 10:36	1

Client Sample ID: AY28199 PZ-5

Lab Sample ID: 400-163351-4

Date Collected: 12/03/18 13:13

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		2.0	1.4	mg/L			12/21/18 18:46	1
Fluoride	<0.032		0.10	0.032	mg/L			12/20/18 16:56	1
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 10:36	1

Client Sample ID: AY28200 PZ-1

Lab Sample ID: 400-163351-5

Date Collected: 12/03/18 14:48

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.2		2.0	1.4	mg/L			12/21/18 18:46	1
Fluoride	0.080	J	0.10	0.032	mg/L			12/20/18 16:58	1
Sulfate	2.1	J	5.0	1.4	mg/L			12/21/18 10:43	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28201 PZ-1 DUP

Date Collected: 12/03/18 14:48

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.1		2.0	1.4	mg/L			12/21/18 18:46	1
Fluoride	0.080	J	0.10	0.032	mg/L			12/20/18 17:00	1
Sulfate	2.1	J	5.0	1.4	mg/L			12/21/18 10:43	1

Client Sample ID: AY28202 MW-6

Date Collected: 12/03/18 15:52

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-7

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.7		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	<0.032		0.10	0.032	mg/L			12/20/18 17:03	1
Sulfate	12		5.0	1.4	mg/L			12/21/18 10:43	1

Client Sample ID: AY28203 FB-1

Date Collected: 12/03/18 16:15

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-8

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	<0.032		0.10	0.032	mg/L			12/20/18 17:06	1
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 10:43	1

Client Sample ID: AY28204 MW-2

Date Collected: 12/04/18 09:34

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-9

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.1		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	0.15		0.10	0.032	mg/L			12/20/18 17:08	1
Sulfate	170		50	14	mg/L			12/21/18 11:06	10

Client Sample ID: AY28206 MW-11

Date Collected: 12/04/18 12:07

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-10

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.3		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	<0.032		0.10	0.032	mg/L			12/20/18 17:10	1
Sulfate	97		25	7.0	mg/L			12/21/18 11:06	5

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28207 MW-10

Lab Sample ID: 400-163351-11

Date Collected: 12/04/18 13:05

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.6		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	0.070	J	0.10	0.032	mg/L			12/20/18 17:13	1
Sulfate	11		5.0	1.4	mg/L			12/21/18 10:43	1

Client Sample ID: AY28208 MW-7

Lab Sample ID: 400-163351-12

Date Collected: 12/04/18 14:36

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.7		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	0.060	J	0.10	0.032	mg/L			12/21/18 09:36	1
Sulfate	9.8		5.0	1.4	mg/L			12/21/18 10:47	1

Client Sample ID: AY28209 MW-8

Lab Sample ID: 400-163351-13

Date Collected: 12/04/18 15:58

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	4.2		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	0.080	J	0.10	0.032	mg/L			12/21/18 09:44	1
Sulfate	8.2		5.0	1.4	mg/L			12/21/18 10:47	1

Client Sample ID: AY28210 FB-2

Lab Sample ID: 400-163351-14

Date Collected: 12/04/18 16:25

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	<0.032		0.10	0.032	mg/L			12/21/18 09:46	1
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 10:47	1

Client Sample ID: AY28211 MW-17

Lab Sample ID: 400-163351-15

Date Collected: 12/05/18 10:36

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.2		2.0	1.4	mg/L			12/21/18 19:35	1
Fluoride	0.19		0.10	0.032	mg/L			12/21/18 09:53	1
Sulfate	12		5.0	1.4	mg/L			12/21/18 11:55	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28212 MW-16

Lab Sample ID: 400-163351-16

Date Collected: 12/05/18 11:53

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.3		2.0	1.4	mg/L			12/21/18 19:32	1
Fluoride	0.11		0.10	0.032	mg/L			12/21/18 09:57	1
Sulfate	51		25	7.0	mg/L			12/21/18 12:30	5

Client Sample ID: AY28213 MW-14

Lab Sample ID: 400-163351-17

Date Collected: 12/05/18 12:53

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.2		2.0	1.4	mg/L			12/21/18 19:32	1
Fluoride	0.070	J	0.10	0.032	mg/L			12/21/18 10:01	1
Sulfate	54		25	7.0	mg/L			12/21/18 12:30	5

Client Sample ID: AY28214 MW-14 DUP

Lab Sample ID: 400-163351-18

Date Collected: 12/05/18 12:53

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	2.3		2.0	1.4	mg/L			12/21/18 19:35	1
Fluoride	0.18		0.10	0.032	mg/L			12/21/18 10:05	1
Sulfate	47		25	7.0	mg/L			12/21/18 12:30	5

Client Sample ID: AY28215 MW-5

Lab Sample ID: 400-163351-19

Date Collected: 12/05/18 14:16

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.7		2.0	1.4	mg/L			12/21/18 19:35	1
Fluoride	0.040	J	0.10	0.032	mg/L			12/21/18 10:15	1
Sulfate	20		5.0	1.4	mg/L			12/21/18 11:55	1

Client Sample ID: AY28216 MW-9

Lab Sample ID: 400-163351-20

Date Collected: 12/05/18 15:10

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.9		2.0	1.4	mg/L			12/21/18 19:35	1
Fluoride	0.040	J	0.10	0.032	mg/L			12/21/18 10:21	1
Sulfate	7.8		5.0	1.4	mg/L			12/21/18 11:55	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28217 MW-12

Lab Sample ID: 400-163351-21

Date Collected: 12/05/18 16:09

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.0		2.0	1.4	mg/L			12/21/18 19:35	1
Fluoride	<0.032		0.10	0.032	mg/L			12/21/18 10:25	1
Sulfate	280		50	14	mg/L			12/21/18 12:38	10

Client Sample ID: AY28218 EB-1

Lab Sample ID: 400-163351-22

Date Collected: 12/05/18 16:30

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/21/18 19:35	1
Fluoride	<0.032		0.10	0.032	mg/L			12/21/18 10:29	1
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 12:00	1

Client Sample ID: AY28205 MW-1

Lab Sample ID: 400-163351-23

Date Collected: 12/04/18 10:26

Matrix: Water

Date Received: 12/11/18 09:18

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.8		2.0	1.4	mg/L			12/21/18 18:53	1
Fluoride	0.040	J	0.10	0.032	mg/L			12/21/18 09:49	1
Sulfate	580		150	42	mg/L			12/21/18 11:10	30

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Qualifiers

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Client Sample ID: AY27907 MW-3

Date Collected: 12/03/18 10:02

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:43	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 16:33	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		20	424194	12/21/18 09:47	RRC	TAL PEN

Client Sample ID: AY27908 MW-4

Date Collected: 12/03/18 10:56

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 16:35	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424194	12/21/18 09:15	RRC	TAL PEN

Client Sample ID: AY28198 PZ-6

Date Collected: 12/03/18 11:40

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 16:51	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:36	RRC	TAL PEN

Client Sample ID: AY28199 PZ-5

Date Collected: 12/03/18 13:13

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 16:56	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:36	RRC	TAL PEN

Client Sample ID: AY28200 PZ-1

Date Collected: 12/03/18 14:48

Date Received: 12/11/18 09:18

Lab Sample ID: 400-163351-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 16:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:43	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28201 PZ-1 DUP

Lab Sample ID: 400-163351-6

Date Collected: 12/03/18 14:48

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:46	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 17:00	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:43	RRC	TAL PEN

Client Sample ID: AY28202 MW-6

Lab Sample ID: 400-163351-7

Date Collected: 12/03/18 15:52

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 17:03	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:43	RRC	TAL PEN

Client Sample ID: AY28203 FB-1

Lab Sample ID: 400-163351-8

Date Collected: 12/03/18 16:15

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 17:06	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:43	RRC	TAL PEN

Client Sample ID: AY28204 MW-2

Lab Sample ID: 400-163351-9

Date Collected: 12/04/18 09:34

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 17:08	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	424228	12/21/18 11:06	RRC	TAL PEN

Client Sample ID: AY28206 MW-11

Lab Sample ID: 400-163351-10

Date Collected: 12/04/18 12:07

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 17:10	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	424228	12/21/18 11:06	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28207 MW-10

Lab Sample ID: 400-163351-11

Date Collected: 12/04/18 13:05

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424125	12/20/18 17:13	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:43	RRC	TAL PEN

Client Sample ID: AY28208 MW-7

Lab Sample ID: 400-163351-12

Date Collected: 12/04/18 14:36

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 09:36	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:47	RRC	TAL PEN

Client Sample ID: AY28209 MW-8

Lab Sample ID: 400-163351-13

Date Collected: 12/04/18 15:58

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 09:44	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:47	RRC	TAL PEN

Client Sample ID: AY28210 FB-2

Lab Sample ID: 400-163351-14

Date Collected: 12/04/18 16:25

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 09:46	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424228	12/21/18 10:47	RRC	TAL PEN

Client Sample ID: AY28211 MW-17

Lab Sample ID: 400-163351-15

Date Collected: 12/05/18 10:36

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424336	12/21/18 19:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 09:53	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424245	12/21/18 11:55	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28212 MW-16

Lab Sample ID: 400-163351-16

Date Collected: 12/05/18 11:53

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424336	12/21/18 19:32	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 09:57	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	424245	12/21/18 12:30	RRC	TAL PEN

Client Sample ID: AY28213 MW-14

Lab Sample ID: 400-163351-17

Date Collected: 12/05/18 12:53

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424336	12/21/18 19:32	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 10:01	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	424245	12/21/18 12:30	RRC	TAL PEN

Client Sample ID: AY28214 MW-14 DUP

Lab Sample ID: 400-163351-18

Date Collected: 12/05/18 12:53

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424336	12/21/18 19:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 10:05	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	424245	12/21/18 12:30	RRC	TAL PEN

Client Sample ID: AY28215 MW-5

Lab Sample ID: 400-163351-19

Date Collected: 12/05/18 14:16

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424336	12/21/18 19:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 10:15	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424245	12/21/18 11:55	RRC	TAL PEN

Client Sample ID: AY28216 MW-9

Lab Sample ID: 400-163351-20

Date Collected: 12/05/18 15:10

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424336	12/21/18 19:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 10:21	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424245	12/21/18 11:55	RRC	TAL PEN

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28217 MW-12

Lab Sample ID: 400-163351-21

Date Collected: 12/05/18 16:09

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424336	12/21/18 19:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 10:25	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	424245	12/21/18 12:38	RRC	TAL PEN

Client Sample ID: AY28218 EB-1

Lab Sample ID: 400-163351-22

Date Collected: 12/05/18 16:30

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424336	12/21/18 19:35	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 10:29	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	424245	12/21/18 12:00	RRC	TAL PEN

Client Sample ID: AY28205 MW-1

Lab Sample ID: 400-163351-23

Date Collected: 12/04/18 10:26

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	424331	12/21/18 18:53	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	424224	12/21/18 09:49	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		30	424228	12/21/18 11:10	RRC	TAL PEN

Laboratory References:

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

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

General Chemistry

Analysis Batch: 424125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-1	AY27907 MW-3	Total/NA	Water	SM 4500 F C	
400-163351-2	AY27908 MW-4	Total/NA	Water	SM 4500 F C	
400-163351-3	AY28198 PZ-6	Total/NA	Water	SM 4500 F C	
400-163351-4	AY28199 PZ-5	Total/NA	Water	SM 4500 F C	
400-163351-5	AY28200 PZ-1	Total/NA	Water	SM 4500 F C	
400-163351-6	AY28201 PZ-1 DUP	Total/NA	Water	SM 4500 F C	
400-163351-7	AY28202 MW-6	Total/NA	Water	SM 4500 F C	
400-163351-8	AY28203 FB-1	Total/NA	Water	SM 4500 F C	
400-163351-9	AY28204 MW-2	Total/NA	Water	SM 4500 F C	
400-163351-10	AY28206 MW-11	Total/NA	Water	SM 4500 F C	
400-163351-11	AY28207 MW-10	Total/NA	Water	SM 4500 F C	
MB 400-424125/15	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-424125/14	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-163233-A-10 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-163233-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-163351-3 DU	AY28198 PZ-6	Total/NA	Water	SM 4500 F C	

Analysis Batch: 424194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-1	AY27907 MW-3	Total/NA	Water	SM 4500 SO4 E	
400-163351-2	AY27908 MW-4	Total/NA	Water	SM 4500 SO4 E	
MB 400-424194/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-424194/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-424194/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-163388-B-17 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-163388-B-17 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	
400-163469-A-1 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-163469-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 424224

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-12	AY28208 MW-7	Total/NA	Water	SM 4500 F C	
400-163351-13	AY28209 MW-8	Total/NA	Water	SM 4500 F C	
400-163351-14	AY28210 FB-2	Total/NA	Water	SM 4500 F C	
400-163351-15	AY28211 MW-17	Total/NA	Water	SM 4500 F C	
400-163351-16	AY28212 MW-16	Total/NA	Water	SM 4500 F C	
400-163351-17	AY28213 MW-14	Total/NA	Water	SM 4500 F C	
400-163351-18	AY28214 MW-14 DUP	Total/NA	Water	SM 4500 F C	
400-163351-19	AY28215 MW-5	Total/NA	Water	SM 4500 F C	
400-163351-20	AY28216 MW-9	Total/NA	Water	SM 4500 F C	
400-163351-21	AY28217 MW-12	Total/NA	Water	SM 4500 F C	
400-163351-22	AY28218 EB-1	Total/NA	Water	SM 4500 F C	
400-163351-23	AY28205 MW-1	Total/NA	Water	SM 4500 F C	
MB 400-424224/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-424224/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-163351-12 MS	AY28208 MW-7	Total/NA	Water	SM 4500 F C	
400-163351-12 MSD	AY28208 MW-7	Total/NA	Water	SM 4500 F C	
400-163351-19 DU	AY28215 MW-5	Total/NA	Water	SM 4500 F C	

QC Association Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

General Chemistry (Continued)

Analysis Batch: 424228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-3	AY28198 PZ-6	Total/NA	Water	SM 4500 SO4 E	
400-163351-4	AY28199 PZ-5	Total/NA	Water	SM 4500 SO4 E	
400-163351-5	AY28200 PZ-1	Total/NA	Water	SM 4500 SO4 E	
400-163351-6	AY28201 PZ-1 DUP	Total/NA	Water	SM 4500 SO4 E	
400-163351-7	AY28202 MW-6	Total/NA	Water	SM 4500 SO4 E	
400-163351-8	AY28203 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-163351-9	AY28204 MW-2	Total/NA	Water	SM 4500 SO4 E	
400-163351-10	AY28206 MW-11	Total/NA	Water	SM 4500 SO4 E	
400-163351-11	AY28207 MW-10	Total/NA	Water	SM 4500 SO4 E	
400-163351-12	AY28208 MW-7	Total/NA	Water	SM 4500 SO4 E	
400-163351-13	AY28209 MW-8	Total/NA	Water	SM 4500 SO4 E	
400-163351-14	AY28210 FB-2	Total/NA	Water	SM 4500 SO4 E	
400-163351-23	AY28205 MW-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-424228/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-424228/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-424228/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-163351-7 MS	AY28202 MW-6	Total/NA	Water	SM 4500 SO4 E	
400-163351-7 MSD	AY28202 MW-6	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 424243

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 400-424243/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-424243/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-163353-A-6 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-163353-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-162757-E-6 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 424245

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-15	AY28211 MW-17	Total/NA	Water	SM 4500 SO4 E	
400-163351-16	AY28212 MW-16	Total/NA	Water	SM 4500 SO4 E	
400-163351-17	AY28213 MW-14	Total/NA	Water	SM 4500 SO4 E	
400-163351-18	AY28214 MW-14 DUP	Total/NA	Water	SM 4500 SO4 E	
400-163351-19	AY28215 MW-5	Total/NA	Water	SM 4500 SO4 E	
400-163351-20	AY28216 MW-9	Total/NA	Water	SM 4500 SO4 E	
400-163351-21	AY28217 MW-12	Total/NA	Water	SM 4500 SO4 E	
400-163351-22	AY28218 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-424245/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-424245/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-424245/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-163146-G-10 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-163146-G-10 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	
400-163299-J-8 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 424331

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-1	AY27907 MW-3	Total/NA	Water	SM 4500 Cl- E	
400-163351-2	AY27908 MW-4	Total/NA	Water	SM 4500 Cl- E	
400-163351-3	AY28198 PZ-6	Total/NA	Water	SM 4500 Cl- E	
400-163351-4	AY28199 PZ-5	Total/NA	Water	SM 4500 Cl- E	
400-163351-5	AY28200 PZ-1	Total/NA	Water	SM 4500 Cl- E	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
SDG: Gadsden Ash Pond 1189

General Chemistry (Continued)

Analysis Batch: 424331 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-6	AY28201 PZ-1 DUP	Total/NA	Water	SM 4500 Cl- E	
400-163351-7	AY28202 MW-6	Total/NA	Water	SM 4500 Cl- E	
400-163351-8	AY28203 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-163351-9	AY28204 MW-2	Total/NA	Water	SM 4500 Cl- E	
400-163351-10	AY28206 MW-11	Total/NA	Water	SM 4500 Cl- E	
400-163351-11	AY28207 MW-10	Total/NA	Water	SM 4500 Cl- E	
400-163351-12	AY28208 MW-7	Total/NA	Water	SM 4500 Cl- E	
400-163351-13	AY28209 MW-8	Total/NA	Water	SM 4500 Cl- E	
400-163351-14	AY28210 FB-2	Total/NA	Water	SM 4500 Cl- E	
400-163351-23	AY28205 MW-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-424331/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-424331/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-424331/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-163351-1 MS	AY27907 MW-3	Total/NA	Water	SM 4500 Cl- E	
400-163351-1 MSD	AY27907 MW-3	Total/NA	Water	SM 4500 Cl- E	
400-163351-4 MS	AY28199 PZ-5	Total/NA	Water	SM 4500 Cl- E	
400-163351-4 MSD	AY28199 PZ-5	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 424336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-15	AY28211 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-163351-16	AY28212 MW-16	Total/NA	Water	SM 4500 Cl- E	
400-163351-17	AY28213 MW-14	Total/NA	Water	SM 4500 Cl- E	
400-163351-18	AY28214 MW-14 DUP	Total/NA	Water	SM 4500 Cl- E	
400-163351-19	AY28215 MW-5	Total/NA	Water	SM 4500 Cl- E	
400-163351-20	AY28216 MW-9	Total/NA	Water	SM 4500 Cl- E	
400-163351-21	AY28217 MW-12	Total/NA	Water	SM 4500 Cl- E	
400-163351-22	AY28218 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-424336/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-424336/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-424336/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-163351-15 MS	AY28211 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-163351-15 MSD	AY28211 MW-17	Total/NA	Water	SM 4500 Cl- E	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-424331/6
Matrix: Water
Analysis Batch: 424331

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/21/18 18:43	1

Lab Sample ID: LCS 400-424331/7
Matrix: Water
Analysis Batch: 424331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.5		mg/L		108	90 - 110

Lab Sample ID: MRL 400-424331/3
Matrix: Water
Analysis Batch: 424331

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.82	J	mg/L		91	50 - 150

Lab Sample ID: 400-163351-1 MS
Matrix: Water
Analysis Batch: 424331

Client Sample ID: AY27907 MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	6.8		10.0	17.9		mg/L		111	73 - 120

Lab Sample ID: 400-163351-1 MSD
Matrix: Water
Analysis Batch: 424331

Client Sample ID: AY27907 MW-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	6.8		10.0	17.9		mg/L		112	73 - 120	0	8

Lab Sample ID: 400-163351-4 MS
Matrix: Water
Analysis Batch: 424331

Client Sample ID: AY28199 PZ-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.6		10.0	15.1		mg/L		114	73 - 120

Lab Sample ID: 400-163351-4 MSD
Matrix: Water
Analysis Batch: 424331

Client Sample ID: AY28199 PZ-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	3.6		10.0	14.8		mg/L		112	73 - 120	2	8

Lab Sample ID: MB 400-424336/6
Matrix: Water
Analysis Batch: 424336

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/21/18 19:32	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Lab Sample ID: LCS 400-424336/7
Matrix: Water
Analysis Batch: 424336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.6		mg/L		109	90 - 110

Lab Sample ID: MRL 400-424336/3
Matrix: Water
Analysis Batch: 424336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	1.95	J	mg/L		98	50 - 150

Lab Sample ID: 400-163351-15 MS
Matrix: Water
Analysis Batch: 424336

Client Sample ID: AY28211 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.2		10.0	14.6		mg/L		114	73 - 120

Lab Sample ID: 400-163351-15 MSD
Matrix: Water
Analysis Batch: 424336

Client Sample ID: AY28211 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.2		10.0	14.4		mg/L		112	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-424125/15
Matrix: Water
Analysis Batch: 424125

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			12/20/18 15:58	1

Lab Sample ID: LCS 400-424125/14
Matrix: Water
Analysis Batch: 424125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.76		mg/L		94	90 - 110

Lab Sample ID: 400-163233-A-10 MS
Matrix: Water
Analysis Batch: 424125

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.75		1.00	1.75		mg/L		100	75 - 125

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 400-163233-A-10 MSD

Matrix: Water
Analysis Batch: 424125

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.75		1.00	1.75		mg/L		100	75 - 125	0	4

Lab Sample ID: 400-163351-3 DU

Matrix: Water
Analysis Batch: 424125

Client Sample ID: AY28198 PZ-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	<0.032		<0.032		mg/L		NC	4

Lab Sample ID: MB 400-424224/3

Matrix: Water
Analysis Batch: 424224

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			12/21/18 09:20	1

Lab Sample ID: LCS 400-424224/4

Matrix: Water
Analysis Batch: 424224

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.91		mg/L		98	90 - 110

Lab Sample ID: 400-163351-12 MS

Matrix: Water
Analysis Batch: 424224

Client Sample ID: AY28208 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.060	J	1.00	1.14		mg/L		108	75 - 125

Lab Sample ID: 400-163351-12 MSD

Matrix: Water
Analysis Batch: 424224

Client Sample ID: AY28208 MW-7
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.060	J	1.00	1.14		mg/L		108	75 - 125	0	4

Lab Sample ID: 400-163351-19 DU

Matrix: Water
Analysis Batch: 424224

Client Sample ID: AY28215 MW-5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.040	J	0.0400	J	mg/L		0	4

Lab Sample ID: MB 400-424243/3

Matrix: Water
Analysis Batch: 424243

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			12/21/18 11:53	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Lab Sample ID: LCS 400-424243/4
Matrix: Water
Analysis Batch: 424243

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.84		mg/L		96	90 - 110

Lab Sample ID: 400-163353-A-6 MS
Matrix: Water
Analysis Batch: 424243

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	<0.032		1.00	1.08		mg/L		108	75 - 125

Lab Sample ID: 400-163353-A-6 MSD
Matrix: Water
Analysis Batch: 424243

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.032		1.00	1.10		mg/L				2	4

Lab Sample ID: 400-162757-E-6 DU
Matrix: Water
Analysis Batch: 424243

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	10		10.6		mg/L		2	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-424194/6
Matrix: Water
Analysis Batch: 424194

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 09:04	1

Lab Sample ID: LCS 400-424194/7
Matrix: Water
Analysis Batch: 424194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.5		mg/L		97	90 - 110

Lab Sample ID: MRL 400-424194/3
Matrix: Water
Analysis Batch: 424194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.32	J	mg/L		86	50 - 150

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

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

Lab Sample ID: 400-163388-B-17 MS

Matrix: Water
Analysis Batch: 424194

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	58		10.0	65.0	4	mg/L		73	77 - 128

Lab Sample ID: 400-163388-B-17 MSD

Matrix: Water
Analysis Batch: 424194

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	58		10.0	65.1	4	mg/L		75	77 - 128	0	5

Lab Sample ID: 400-163469-A-1 MS

Matrix: Water
Analysis Batch: 424194

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	430	F2	9.90	394	4	mg/L		-390	77 - 128

Lab Sample ID: 400-163469-A-1 MSD

Matrix: Water
Analysis Batch: 424194

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	430	F2	9.90	490	4 F2	mg/L		579	77 - 128	22	5

Lab Sample ID: MB 400-424228/6

Matrix: Water
Analysis Batch: 424228

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 10:36	1

Lab Sample ID: LCS 400-424228/7

Matrix: Water
Analysis Batch: 424228

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	14.6		mg/L		97	90 - 110

Lab Sample ID: MRL 400-424228/3

Matrix: Water
Analysis Batch: 424228

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.70	J	mg/L		94	50 - 150

Lab Sample ID: 400-163351-7 MS

Matrix: Water
Analysis Batch: 424228

Client Sample ID: AY28202 MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	12		10.0	22.7		mg/L		104	77 - 128

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

Lab Sample ID: 400-163351-7 MSD
Matrix: Water
Analysis Batch: 424228

Client Sample ID: AY28202 MW-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	12		10.0	22.8		mg/L		105	77 - 128	1	5

Lab Sample ID: MB 400-424245/6
Matrix: Water
Analysis Batch: 424245

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			12/21/18 11:49	1

Lab Sample ID: LCS 400-424245/7
Matrix: Water
Analysis Batch: 424245

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

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

Lab Sample ID: MRL 400-424245/3
Matrix: Water
Analysis Batch: 424245

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.63	J	mg/L		93	50 - 150

Lab Sample ID: 400-163146-G-10 MS
Matrix: Water
Analysis Batch: 424245

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	<1.4		10.0	10.7		mg/L		107	77 - 128

Lab Sample ID: 400-163146-G-10 MSD
Matrix: Water
Analysis Batch: 424245

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	<1.4		10.0	10.7		mg/L		107	77 - 128	1	5

Lab Sample ID: 400-163299-J-8 MSD
Matrix: Water
Analysis Batch: 424245

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	4200		100	4310	4	mg/L		114	77 - 128	1	5

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-163351-1
SDG Number: Gadsden Ash Pond 1189

Login Number: 163351

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	RADS-14.8°C,14.5°C IR-8 / 1.8°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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-1
 SDG: Gadsden Ash Pond 1189

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	01-12-20
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	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

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: 400-163351-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1189

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

1/10/2019 5:41:56 PM

Cheyenne Whitmire, Project Manager II

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

Job ID: 400-163351-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-163351-2

RAD

Method(s) PrecSep_0: Radium-228 Prep Batch 160-405922: The following samples were prepared at a reduced aliquot: AY28217 MW-12 (400-163351-21), AY28218 EB-1 (400-163351-22), AY28205 MW-1 (400-163351-23) and AY28205 MW-1 (400-163351-23[DU]). Samples from jobs 400-163351 and 680-162084 were reduced due to limited volume. Samples from jobs 500-155866, 680-162084, 160-32254, and 160-32256 were reduced due to sediment. Sample 160-322566-1 had red sediment.

Method(s) PrecSep_0: Radium-228 Prep Batch 160-405924: The following samples were prepared at a reduced aliquot due to limited volume: AY28203 FB-1 (400-163351-8), AY28204 MW-2 (400-163351-9), AY28206 MW-11 (400-163351-10), AY28207 MW-10 (400-163351-11), AY28208 MW-7 (400-163351-12), AY28209 MW-8 (400-163351-13), AY28210 FB-2 (400-163351-14), AY28211 MW-17 (400-163351-15), AY28212 MW-16 (400-163351-16), AY28213 MW-14 (400-163351-17), AY28214 MW-14 DUP (400-163351-18), AY28215 MW-5 (400-163351-19) and AY28216 MW-9 (400-163351-20).

Method(s) PrecSep_0: Radium 228 Prep Batch 160-406085: The following samples were prepared at a reduced aliquot due to limited sample volume: AY27907 MW-3 (400-163351-1), AY27908 MW-4 (400-163351-2), AY28198 PZ-6 (400-163351-3), AY28198 PZ-6 (400-163351-3[DU]), AY28199 PZ-5 (400-163351-4), AY28200 PZ-1 (400-163351-5), AY28201 PZ-1 DUP (400-163351-6) and AY28202 MW-6 (400-163351-7).

Method(s) PrecSep-21: Radium 226 Prep Batch 405774: The following samples were prepared at a reduced aliquot due to insufficient volume. AY28203 FB-1 (400-163351-8), AY28204 MW-2 (400-163351-9), AY28206 MW-11 (400-163351-10), AY28207 MW-10 (400-163351-11), AY28208 MW-7 (400-163351-12), AY28209 MW-8 (400-163351-13), AY28210 FB-2 (400-163351-14), AY28211 MW-17 (400-163351-15), AY28212 MW-16 (400-163351-16), AY28213 MW-14 (400-163351-17), AY28214 MW-14 DUP (400-163351-18), AY28215 MW-5 (400-163351-19) and AY28216 MW-9 (400-163351-20)

Method(s) PrecSep-21: Radium-226 Prep Batch 160-405923: The following samples were prepared at a reduced aliquot: AY28217 MW-12 (400-163351-21), AY28218 EB-1 (400-163351-22), AY28205 MW-1 (400-163351-23) and AY28205 MW-1 (400-163351-23[DU]). Samples from jobs 400-163351 and 680-162084 were reduced due to limited volume. Samples from jobs 500-155866, 680-162084, 160-32254, and 160-32256 were reduced due to sediment. Sample 160-322566-1 had red sediment.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-406079: The following samples were prepared at a reduced aliquot due to limited sample volume: AY27907 MW-3 (400-163351-1), AY27908 MW-4 (400-163351-2), AY28198 PZ-6 (400-163351-3), AY28198 PZ-6 (400-163351-3[DU]), AY28199 PZ-5 (400-163351-4), AY28200 PZ-1 (400-163351-5), AY28201 PZ-1 DUP (400-163351-6) and AY28202 MW-6 (400-163351-7).

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-163351-1	AY27907 MW-3	Water	12/03/18 10:02	12/11/18 09:18
400-163351-2	AY27908 MW-4	Water	12/03/18 10:56	12/11/18 09:18
400-163351-3	AY28198 PZ-6	Water	12/03/18 11:40	12/11/18 09:18
400-163351-4	AY28199 PZ-5	Water	12/03/18 13:13	12/11/18 09:18
400-163351-5	AY28200 PZ-1	Water	12/03/18 14:48	12/11/18 09:18
400-163351-6	AY28201 PZ-1 DUP	Water	12/03/18 14:48	12/11/18 09:18
400-163351-7	AY28202 MW-6	Water	12/03/18 15:52	12/11/18 09:18
400-163351-8	AY28203 FB-1	Water	12/03/18 16:15	12/11/18 09:18
400-163351-9	AY28204 MW-2	Water	12/04/18 09:34	12/11/18 09:18
400-163351-10	AY28206 MW-11	Water	12/04/18 12:07	12/11/18 09:18
400-163351-11	AY28207 MW-10	Water	12/04/18 13:05	12/11/18 09:18
400-163351-12	AY28208 MW-7	Water	12/04/18 14:36	12/11/18 09:18
400-163351-13	AY28209 MW-8	Water	12/04/18 15:58	12/11/18 09:18
400-163351-14	AY28210 FB-2	Water	12/04/18 16:25	12/11/18 09:18
400-163351-15	AY28211 MW-17	Water	12/05/18 10:36	12/11/18 09:18
400-163351-16	AY28212 MW-16	Water	12/05/18 11:53	12/11/18 09:18
400-163351-17	AY28213 MW-14	Water	12/05/18 12:53	12/11/18 09:18
400-163351-18	AY28214 MW-14 DUP	Water	12/05/18 12:53	12/11/18 09:18
400-163351-19	AY28215 MW-5	Water	12/05/18 14:16	12/11/18 09:18
400-163351-20	AY28216 MW-9	Water	12/05/18 15:10	12/11/18 09:18
400-163351-21	AY28217 MW-12	Water	12/05/18 16:09	12/11/18 09:18
400-163351-22	AY28218 EB-1	Water	12/05/18 16:30	12/11/18 09:18
400-163351-23	AY28205 MW-1	Water	12/04/18 10:26	12/11/18 09:18

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY27907 MW-3

Lab Sample ID: 400-163351-1

Date Collected: 12/03/18 10:02

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.126		0.0854	0.0862	1.00	0.117	pCi/L	12/17/18 09:07	01/08/19 06:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					12/17/18 09:07	01/08/19 06:03	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.623		0.356	0.360	1.00	0.541	pCi/L	12/17/18 09:30	12/27/18 11:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					12/17/18 09:30	12/27/18 11:51	1
Y Carrier	86.0		40 - 110					12/17/18 09:30	12/27/18 11:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.749		0.366	0.370	5.00	0.541	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY27908 MW-4

Lab Sample ID: 400-163351-2

Date Collected: 12/03/18 10:56

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.427		0.126	0.132	1.00	0.0974	pCi/L	12/17/18 09:07	01/08/19 06:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/17/18 09:07	01/08/19 06:03	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.270	U	0.352	0.353	1.00	0.585	pCi/L	12/17/18 09:30	12/27/18 11:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/17/18 09:30	12/27/18 11:51	1
Y Carrier	81.9		40 - 110					12/17/18 09:30	12/27/18 11:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.697		0.374	0.377	5.00	0.585	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28198 PZ-6

Lab Sample ID: 400-163351-3

Date Collected: 12/03/18 11:40

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0880	U	0.0733	0.0737	1.00	0.105	pCi/L	12/17/18 09:07	01/08/19 06:03	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					12/17/18 09:07	01/08/19 06:03	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.150	U	0.379	0.380	1.00	0.648	pCi/L	12/17/18 09:30	12/27/18 11:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					12/17/18 09:30	12/27/18 11:51	1
Y Carrier	86.7		40 - 110					12/17/18 09:30	12/27/18 11:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.238	U	0.386	0.387	5.00	0.648	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28199 PZ-5

Lab Sample ID: 400-163351-4

Date Collected: 12/03/18 13:13

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.165		0.0942	0.0954	1.00	0.114	pCi/L	12/17/18 09:07	01/08/19 06:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					12/17/18 09:07	01/08/19 06:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.570		0.320	0.324	1.00	0.483	pCi/L	12/17/18 09:30	12/27/18 11:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					12/17/18 09:30	12/27/18 11:51	1
Y Carrier	92.0		40 - 110					12/17/18 09:30	12/27/18 11:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.736		0.334	0.338	5.00	0.483	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28200 PZ-1

Lab Sample ID: 400-163351-5

Date Collected: 12/03/18 14:48

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.112	U	0.0845	0.0851	1.00	0.119	pCi/L	12/17/18 09:07	01/08/19 06:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/17/18 09:07	01/08/19 06:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0763	U	0.305	0.305	1.00	0.530	pCi/L	12/17/18 09:30	12/27/18 11:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/17/18 09:30	12/27/18 11:51	1
Y Carrier	89.7		40 - 110					12/17/18 09:30	12/27/18 11:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.188	U	0.316	0.317	5.00	0.530	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28201 PZ-1 DUP

Lab Sample ID: 400-163351-6

Date Collected: 12/03/18 14:48

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.162		0.0934	0.0945	1.00	0.117	pCi/L	12/17/18 09:07	01/08/19 06:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/17/18 09:07	01/08/19 06:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.147	U	0.273	0.273	1.00	0.464	pCi/L	12/17/18 09:30	12/27/18 11:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/17/18 09:30	12/27/18 11:51	1
Y Carrier	90.8		40 - 110					12/17/18 09:30	12/27/18 11:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.309	U	0.289	0.289	5.00	0.464	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28202 MW-6

Lab Sample ID: 400-163351-7

Date Collected: 12/03/18 15:52

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0793	U	0.0735	0.0738	1.00	0.111	pCi/L	12/17/18 09:07	01/08/19 06:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					12/17/18 09:07	01/08/19 06:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.225	U	0.282	0.283	1.00	0.468	pCi/L	12/17/18 09:30	12/27/18 11:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					12/17/18 09:30	12/27/18 11:52	1
Y Carrier	92.3		40 - 110					12/17/18 09:30	12/27/18 11:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.304	U	0.291	0.292	5.00	0.468	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28203 FB-1

Lab Sample ID: 400-163351-8

Date Collected: 12/03/18 16:15

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0500	U	0.0677	0.0678	1.00	0.114	pCi/L	12/14/18 09:23	01/07/19 08:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					12/14/18 09:23	01/07/19 08:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.140	U	0.318	0.318	1.00	0.545	pCi/L	12/14/18 20:20	12/27/18 16:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					12/14/18 20:20	12/27/18 16:46	1
Y Carrier	79.3		40 - 110					12/14/18 20:20	12/27/18 16:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.190	U	0.325	0.325	5.00	0.545	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28204 MW-2

Lab Sample ID: 400-163351-9

Date Collected: 12/04/18 09:34

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.254		0.114	0.116	1.00	0.129	pCi/L	12/14/18 09:23	01/07/19 08:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					12/14/18 09:23	01/07/19 08:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.484	U	0.405	0.407	1.00	0.648	pCi/L	12/14/18 20:20	12/27/18 16:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.3		40 - 110					12/14/18 20:20	12/27/18 16:46	1
Y Carrier	85.2		40 - 110					12/14/18 20:20	12/27/18 16:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.739		0.421	0.423	5.00	0.648	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28206 MW-11

Lab Sample ID: 400-163351-10

Date Collected: 12/04/18 12:07

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.323		0.122	0.125	1.00	0.123	pCi/L	12/14/18 09:23	01/07/19 08:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/14/18 09:23	01/07/19 08:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.722		0.361	0.367	1.00	0.531	pCi/L	12/14/18 20:20	12/27/18 16:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/14/18 20:20	12/27/18 16:46	1
Y Carrier	86.4		40 - 110					12/14/18 20:20	12/27/18 16:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.05		0.381	0.388	5.00	0.531	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28207 MW-10

Lab Sample ID: 400-163351-11

Date Collected: 12/04/18 13:05

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.303		0.116	0.119	1.00	0.117	pCi/L	12/14/18 09:23	01/07/19 08:09	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					12/14/18 09:23	01/07/19 08:09	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.103	U	0.326	0.326	1.00	0.564	pCi/L	12/14/18 20:20	12/27/18 16:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					12/14/18 20:20	12/27/18 16:46	1
Y Carrier	89.0		40 - 110					12/14/18 20:20	12/27/18 16:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.407	U	0.346	0.347	5.00	0.564	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28208 MW-7

Lab Sample ID: 400-163351-12

Date Collected: 12/04/18 14:36

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0269	U	0.0575	0.0575	1.00	0.107	pCi/L	12/14/18 09:23	01/07/19 10:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/14/18 09:23	01/07/19 10:35	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.298	U	0.331	0.332	1.00	0.543	pCi/L	12/14/18 20:20	12/27/18 16:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					12/14/18 20:20	12/27/18 16:46	1
Y Carrier	87.5		40 - 110					12/14/18 20:20	12/27/18 16:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.325	U	0.336	0.337	5.00	0.543	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28209 MW-8

Lab Sample ID: 400-163351-13

Date Collected: 12/04/18 15:58

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.199		0.106	0.107	1.00	0.131	pCi/L	12/14/18 09:23	01/07/19 10:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					12/14/18 09:23	01/07/19 10:35	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.676		0.376	0.381	1.00	0.566	pCi/L	12/14/18 20:20	12/27/18 16:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					12/14/18 20:20	12/27/18 16:46	1
Y Carrier	84.9		40 - 110					12/14/18 20:20	12/27/18 16:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.875		0.391	0.396	5.00	0.566	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28210 FB-2

Lab Sample ID: 400-163351-14

Date Collected: 12/04/18 16:25

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0118	U	0.0474	0.0474	1.00	0.110	pCi/L	12/14/18 09:23	01/07/19 10:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/14/18 09:23	01/07/19 10:35	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.169	U	0.305	0.305	1.00	0.517	pCi/L	12/14/18 20:20	12/27/18 16:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					12/14/18 20:20	12/27/18 16:46	1
Y Carrier	87.5		40 - 110					12/14/18 20:20	12/27/18 16:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.157	U	0.309	0.309	5.00	0.517	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28211 MW-17

Lab Sample ID: 400-163351-15

Date Collected: 12/05/18 10:36

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.147		0.0993	0.100	1.00	0.132	pCi/L	12/14/18 09:23	01/07/19 10:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/14/18 09:23	01/07/19 10:35	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.155	U	0.286	0.286	1.00	0.487	pCi/L	12/14/18 20:20	12/27/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/14/18 20:20	12/27/18 16:47	1
Y Carrier	88.6		40 - 110					12/14/18 20:20	12/27/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.302	U	0.303	0.303	5.00	0.487	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28212 MW-16

Lab Sample ID: 400-163351-16

Date Collected: 12/05/18 11:53

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0898	U	0.0836	0.0840	1.00	0.128	pCi/L	12/14/18 09:23	01/07/19 10:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					12/14/18 09:23	01/07/19 10:35	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.199	U	0.321	0.322	1.00	0.543	pCi/L	12/14/18 20:20	12/27/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.5		40 - 110					12/14/18 20:20	12/27/18 16:47	1
Y Carrier	83.0		40 - 110					12/14/18 20:20	12/27/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.288	U	0.332	0.333	5.00	0.543	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28213 MW-14

Lab Sample ID: 400-163351-17

Date Collected: 12/05/18 12:53

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.186		0.0930	0.0945	1.00	0.103	pCi/L	12/14/18 09:23	01/07/19 10:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/14/18 09:23	01/07/19 10:35	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.454	U	0.338	0.340	1.00	0.531	pCi/L	12/14/18 20:20	12/27/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/14/18 20:20	12/27/18 16:47	1
Y Carrier	88.2		40 - 110					12/14/18 20:20	12/27/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.640		0.351	0.353	5.00	0.531	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28214 MW-14 DUP

Lab Sample ID: 400-163351-18

Date Collected: 12/05/18 12:53

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.260		0.112	0.115	1.00	0.126	pCi/L	12/14/18 09:23	01/07/19 10:35	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					12/14/18 09:23	01/07/19 10:35	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.429	U	0.296	0.298	1.00	0.456	pCi/L	12/14/18 20:20	12/27/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					12/14/18 20:20	12/27/18 16:47	1
Y Carrier	89.3		40 - 110					12/14/18 20:20	12/27/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.689		0.316	0.319	5.00	0.456	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28215 MW-5

Lab Sample ID: 400-163351-19

Date Collected: 12/05/18 14:16

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.156		0.100	0.101	1.00	0.135	pCi/L	12/14/18 09:23	01/07/19 10:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110					12/14/18 09:23	01/07/19 10:36	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.720		0.351	0.357	1.00	0.506	pCi/L	12/14/18 20:20	12/27/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.3		40 - 110					12/14/18 20:20	12/27/18 16:47	1
Y Carrier	88.6		40 - 110					12/14/18 20:20	12/27/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.876		0.365	0.371	5.00	0.506	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28216 MW-9

Lab Sample ID: 400-163351-20

Date Collected: 12/05/18 15:10

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.180		0.0976	0.0990	1.00	0.120	pCi/L	12/14/18 09:23	01/07/19 10:36	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					12/14/18 09:23	01/07/19 10:36	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.341	U	0.350	0.351	1.00	0.569	pCi/L	12/14/18 20:20	12/27/18 16:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					12/14/18 20:20	12/27/18 16:47	1
Y Carrier	74.4		40 - 110					12/14/18 20:20	12/27/18 16:47	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.520	U	0.363	0.365	5.00	0.569	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28217 MW-12

Lab Sample ID: 400-163351-21

Date Collected: 12/05/18 16:09

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0881	U	0.0685	0.0690	1.00	0.0946	pCi/L	12/14/18 20:00	01/07/19 05:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					12/14/18 20:00	01/07/19 05:50	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.410	U	0.336	0.338	1.00	0.534	pCi/L	12/14/18 19:58	12/27/18 16:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					12/14/18 19:58	12/27/18 16:41	1
Y Carrier	81.5		40 - 110					12/14/18 19:58	12/27/18 16:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.498	U	0.343	0.345	5.00	0.534	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28218 EB-1

Lab Sample ID: 400-163351-22

Date Collected: 12/05/18 16:30

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0143	U	0.0401	0.0401	1.00	0.100	pCi/L	12/14/18 20:00	01/07/19 05:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					12/14/18 20:00	01/07/19 05:50	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.151	U	0.300	0.300	1.00	0.514	pCi/L	12/14/18 19:58	12/27/18 16:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					12/14/18 19:58	12/27/18 16:41	1
Y Carrier	78.9		40 - 110					12/14/18 19:58	12/27/18 16:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.136	U	0.303	0.303	5.00	0.514	pCi/L		01/09/19 16:16	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28205 MW-1

Lab Sample ID: 400-163351-23

Date Collected: 12/04/18 10:26

Matrix: Water

Date Received: 12/11/18 09:18

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0715	U	0.0699	0.0702	1.00	0.107	pCi/L	12/14/18 20:00	01/07/19 05:50	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					12/14/18 20:00	01/07/19 05:50	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.142	U	0.330	0.330	1.00	0.568	pCi/L	12/14/18 19:58	12/27/18 16:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					12/14/18 19:58	12/27/18 16:41	1
Y Carrier	80.0		40 - 110					12/14/18 19:58	12/27/18 16:41	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.213	U	0.337	0.337	5.00	0.568	pCi/L		01/09/19 16:16	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY27907 MW-3

Lab Sample ID: 400-163351-1

Date Collected: 12/03/18 10:02

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			406079	12/17/18 09:07	JLC	TAL SL
Total/NA	Analysis	9315		1	409573	01/08/19 06:03	CDR	TAL SL
Total/NA	Prep	PrecSep_0			406085	12/17/18 09:30	JLC	TAL SL
Total/NA	Analysis	9320		1	407607	12/27/18 11:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY27908 MW-4

Lab Sample ID: 400-163351-2

Date Collected: 12/03/18 10:56

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			406079	12/17/18 09:07	JLC	TAL SL
Total/NA	Analysis	9315		1	409573	01/08/19 06:03	CDR	TAL SL
Total/NA	Prep	PrecSep_0			406085	12/17/18 09:30	JLC	TAL SL
Total/NA	Analysis	9320		1	407607	12/27/18 11:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28198 PZ-6

Lab Sample ID: 400-163351-3

Date Collected: 12/03/18 11:40

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			406079	12/17/18 09:07	JLC	TAL SL
Total/NA	Analysis	9315		1	409573	01/08/19 06:03	CDR	TAL SL
Total/NA	Prep	PrecSep_0			406085	12/17/18 09:30	JLC	TAL SL
Total/NA	Analysis	9320		1	407607	12/27/18 11:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28199 PZ-5

Lab Sample ID: 400-163351-4

Date Collected: 12/03/18 13:13

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			406079	12/17/18 09:07	JLC	TAL SL
Total/NA	Analysis	9315		1	409328	01/08/19 06:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			406085	12/17/18 09:30	JLC	TAL SL
Total/NA	Analysis	9320		1	407607	12/27/18 11:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28200 PZ-1

Lab Sample ID: 400-163351-5

Date Collected: 12/03/18 14:48

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			406079	12/17/18 09:07	JLC	TAL SL
Total/NA	Analysis	9315		1	409328	01/08/19 06:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			406085	12/17/18 09:30	JLC	TAL SL
Total/NA	Analysis	9320		1	407607	12/27/18 11:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28201 PZ-1 DUP

Lab Sample ID: 400-163351-6

Date Collected: 12/03/18 14:48

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			406079	12/17/18 09:07	JLC	TAL SL
Total/NA	Analysis	9315		1	409328	01/08/19 06:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			406085	12/17/18 09:30	JLC	TAL SL
Total/NA	Analysis	9320		1	407607	12/27/18 11:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28202 MW-6

Lab Sample ID: 400-163351-7

Date Collected: 12/03/18 15:52

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			406079	12/17/18 09:07	JLC	TAL SL
Total/NA	Analysis	9315		1	409328	01/08/19 06:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			406085	12/17/18 09:30	JLC	TAL SL
Total/NA	Analysis	9320		1	407607	12/27/18 11:52	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28203 FB-1

Lab Sample ID: 400-163351-8

Date Collected: 12/03/18 16:15

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 08:09	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:46	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28204 MW-2

Lab Sample ID: 400-163351-9

Date Collected: 12/04/18 09:34

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 08:09	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:46	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28206 MW-11

Lab Sample ID: 400-163351-10

Date Collected: 12/04/18 12:07

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 08:09	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:46	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28207 MW-10

Lab Sample ID: 400-163351-11

Date Collected: 12/04/18 13:05

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 08:09	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:46	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28208 MW-7

Lab Sample ID: 400-163351-12

Date Collected: 12/04/18 14:36

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:35	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:46	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28209 MW-8

Lab Sample ID: 400-163351-13

Date Collected: 12/04/18 15:58

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:35	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:46	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28210 FB-2

Lab Sample ID: 400-163351-14

Date Collected: 12/04/18 16:25

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:35	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:46	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28211 MW-17

Lab Sample ID: 400-163351-15

Date Collected: 12/05/18 10:36

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:35	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:47	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28212 MW-16

Lab Sample ID: 400-163351-16

Date Collected: 12/05/18 11:53

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:35	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:47	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28213 MW-14

Lab Sample ID: 400-163351-17

Date Collected: 12/05/18 12:53

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:35	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:47	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28214 MW-14 DUP

Lab Sample ID: 400-163351-18

Date Collected: 12/05/18 12:53

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:35	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:47	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28215 MW-5

Lab Sample ID: 400-163351-19

Date Collected: 12/05/18 14:16

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:36	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:47	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28216 MW-9

Lab Sample ID: 400-163351-20

Date Collected: 12/05/18 15:10

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405774	12/14/18 09:23	HET	TAL SL
Total/NA	Analysis	9315		1	409199	01/07/19 10:36	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405924	12/14/18 20:20	CMM	TAL SL
Total/NA	Analysis	9320		1	407599	12/27/18 16:47	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

Client Sample ID: AY28217 MW-12

Lab Sample ID: 400-163351-21

Date Collected: 12/05/18 16:09

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405923	12/14/18 20:00	CMM	TAL SL
Total/NA	Analysis	9315		1	409218	01/07/19 05:50	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405922	12/14/18 19:58	CMM	TAL SL
Total/NA	Analysis	9320		1	407600	12/27/18 16:41	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28218 EB-1

Lab Sample ID: 400-163351-22

Date Collected: 12/05/18 16:30

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405923	12/14/18 20:00	CMM	TAL SL
Total/NA	Analysis	9315		1	409218	01/07/19 05:50	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405922	12/14/18 19:58	CMM	TAL SL
Total/NA	Analysis	9320		1	407600	12/27/18 16:41	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	RTM	TAL SL

Client Sample ID: AY28205 MW-1

Lab Sample ID: 400-163351-23

Date Collected: 12/04/18 10:26

Matrix: Water

Date Received: 12/11/18 09:18

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			405923	12/14/18 20:00	CMM	TAL SL
Total/NA	Analysis	9315		1	409218	01/07/19 05:50	KLS	TAL SL
Total/NA	Prep	PrecSep_0			405922	12/14/18 19:58	CMM	TAL SL
Total/NA	Analysis	9320		1	407600	12/27/18 16:41	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	409951	01/09/19 16:16	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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

Rad

Prep Batch: 405774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-8	AY28203 FB-1	Total/NA	Water	PrecSep-21	
400-163351-9	AY28204 MW-2	Total/NA	Water	PrecSep-21	
400-163351-10	AY28206 MW-11	Total/NA	Water	PrecSep-21	
400-163351-11	AY28207 MW-10	Total/NA	Water	PrecSep-21	
400-163351-12	AY28208 MW-7	Total/NA	Water	PrecSep-21	
400-163351-13	AY28209 MW-8	Total/NA	Water	PrecSep-21	
400-163351-14	AY28210 FB-2	Total/NA	Water	PrecSep-21	
400-163351-15	AY28211 MW-17	Total/NA	Water	PrecSep-21	
400-163351-16	AY28212 MW-16	Total/NA	Water	PrecSep-21	
400-163351-17	AY28213 MW-14	Total/NA	Water	PrecSep-21	
400-163351-18	AY28214 MW-14 DUP	Total/NA	Water	PrecSep-21	
400-163351-19	AY28215 MW-5	Total/NA	Water	PrecSep-21	
400-163351-20	AY28216 MW-9	Total/NA	Water	PrecSep-21	
MB 160-405774/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-405774/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-163353-B-1-A DU	Duplicate	Total/NA	Water	PrecSep-21	

Prep Batch: 405922

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-21	AY28217 MW-12	Total/NA	Water	PrecSep_0	
400-163351-22	AY28218 EB-1	Total/NA	Water	PrecSep_0	
400-163351-23	AY28205 MW-1	Total/NA	Water	PrecSep_0	
MB 160-405922/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-405922/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-163351-23 DU	AY28205 MW-1	Total/NA	Water	PrecSep_0	

Prep Batch: 405923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-21	AY28217 MW-12	Total/NA	Water	PrecSep-21	
400-163351-22	AY28218 EB-1	Total/NA	Water	PrecSep-21	
400-163351-23	AY28205 MW-1	Total/NA	Water	PrecSep-21	
MB 160-405923/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-405923/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-163351-23 DU	AY28205 MW-1	Total/NA	Water	PrecSep-21	

Prep Batch: 405924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-8	AY28203 FB-1	Total/NA	Water	PrecSep_0	
400-163351-9	AY28204 MW-2	Total/NA	Water	PrecSep_0	
400-163351-10	AY28206 MW-11	Total/NA	Water	PrecSep_0	
400-163351-11	AY28207 MW-10	Total/NA	Water	PrecSep_0	
400-163351-12	AY28208 MW-7	Total/NA	Water	PrecSep_0	
400-163351-13	AY28209 MW-8	Total/NA	Water	PrecSep_0	
400-163351-14	AY28210 FB-2	Total/NA	Water	PrecSep_0	
400-163351-15	AY28211 MW-17	Total/NA	Water	PrecSep_0	
400-163351-16	AY28212 MW-16	Total/NA	Water	PrecSep_0	
400-163351-17	AY28213 MW-14	Total/NA	Water	PrecSep_0	
400-163351-18	AY28214 MW-14 DUP	Total/NA	Water	PrecSep_0	
400-163351-19	AY28215 MW-5	Total/NA	Water	PrecSep_0	
400-163351-20	AY28216 MW-9	Total/NA	Water	PrecSep_0	
MB 160-405924/23-A	Method Blank	Total/NA	Water	PrecSep_0	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

Rad (Continued)

Prep Batch: 405924 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 160-405924/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-163353-B-1-B DU	Duplicate	Total/NA	Water	PrecSep_0	

Prep Batch: 406079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-1	AY27907 MW-3	Total/NA	Water	PrecSep-21	
400-163351-2	AY27908 MW-4	Total/NA	Water	PrecSep-21	
400-163351-3	AY28198 PZ-6	Total/NA	Water	PrecSep-21	
400-163351-4	AY28199 PZ-5	Total/NA	Water	PrecSep-21	
400-163351-5	AY28200 PZ-1	Total/NA	Water	PrecSep-21	
400-163351-6	AY28201 PZ-1 DUP	Total/NA	Water	PrecSep-21	
400-163351-7	AY28202 MW-6	Total/NA	Water	PrecSep-21	
MB 160-406079/10-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-406079/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-163351-3 DU	AY28198 PZ-6	Total/NA	Water	PrecSep-21	

Prep Batch: 406085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163351-1	AY27907 MW-3	Total/NA	Water	PrecSep_0	
400-163351-2	AY27908 MW-4	Total/NA	Water	PrecSep_0	
400-163351-3	AY28198 PZ-6	Total/NA	Water	PrecSep_0	
400-163351-4	AY28199 PZ-5	Total/NA	Water	PrecSep_0	
400-163351-5	AY28200 PZ-1	Total/NA	Water	PrecSep_0	
400-163351-6	AY28201 PZ-1 DUP	Total/NA	Water	PrecSep_0	
400-163351-7	AY28202 MW-6	Total/NA	Water	PrecSep_0	
MB 160-406085/10-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-406085/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-163351-3 DU	AY28198 PZ-6	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-405774/23-A
Matrix: Water
Analysis Batch: 409199

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405774

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.04175	U	0.0658	0.0659	1.00	0.114	pCi/L	12/14/18 09:23	01/07/19 10:36	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					12/14/18 09:23	01/07/19 10:36	1

Lab Sample ID: LCS 160-405774/1-A
Matrix: Water
Analysis Batch: 409199

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405774

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	14.68		1.51	1.00	0.104	pCi/L	97	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	104		40 - 110						

Lab Sample ID: 400-163353-B-1-A DU
Matrix: Water
Analysis Batch: 409199

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 405774

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.348		0.2271		0.107	1.00	0.115	pCi/L	0.50	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	97.9		40 - 110							

Lab Sample ID: MB 160-405923/24-A
Matrix: Water
Analysis Batch: 409200

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405923

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01522	U	0.0457	0.0457	1.00	0.0868	pCi/L	12/14/18 20:00	01/07/19 08:04	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					12/14/18 20:00	01/07/19 08:04	1

Lab Sample ID: LCS 160-405923/1-A
Matrix: Water
Analysis Batch: 409218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405923

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	9.265		0.960	1.00	0.0781	pCi/L	82	68 - 137

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

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

Lab Sample ID: LCS 160-405923/1-A
Matrix: Water
Analysis Batch: 409218

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405923

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	109		40 - 110

Lab Sample ID: 400-163351-23 DU
Matrix: Water
Analysis Batch: 409218

Client Sample ID: AY28205 MW-1
Prep Type: Total/NA
Prep Batch: 405923

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
Radium-226	0.0715	U	0.08064	U	0.0697	1.00	0.101	pCi/L	0.07	1

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	104		40 - 110

Lab Sample ID: MB 160-406079/10-A
Matrix: Water
Analysis Batch: 409328

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 406079

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.01691	U	0.0678	0.0678	1.00	0.132	pCi/L	12/17/18 09:07	01/08/19 06:06	1

	MB	MB	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		40 - 110

	Prepared	Analyzed	Dil Fac
Ba Carrier	12/17/18 09:07	01/08/19 06:06	1

Lab Sample ID: LCS 160-406079/1-A
Matrix: Water
Analysis Batch: 409573

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 406079

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	15.1	13.32		1.37	1.00	0.0965	pCi/L	88	68 - 137

	LCS	LCS	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	101		40 - 110

Lab Sample ID: 400-163351-3 DU
Matrix: Water
Analysis Batch: 409328

Client Sample ID: AY28198 PZ-6
Prep Type: Total/NA
Prep Batch: 406079

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	Limit
Radium-226	0.0880	U	0.01891	U	0.0622	1.00	0.121	pCi/L	0.51	1

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	97.6		40 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-405922/24-A
Matrix: Water
Analysis Batch: 407606

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405922

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1496	U	0.243	0.243	1.00	0.410	pCi/L	12/14/18 19:58	12/27/18 16:40	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					12/14/18 19:58	12/27/18 16:40	1
Y Carrier	87.9		40 - 110					12/14/18 19:58	12/27/18 16:40	1

Lab Sample ID: LCS 160-405922/1-A
Matrix: Water
Analysis Batch: 407600

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405922

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.09	8.776		1.04	1.00	0.403	pCi/L	97	56 - 140
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	109		40 - 110						
Y Carrier	80.4		40 - 110						

Lab Sample ID: 400-163351-23 DU
Matrix: Water
Analysis Batch: 407600

Client Sample ID: AY28205 MW-1
Prep Type: Total/NA
Prep Batch: 405922

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.142	U	0.2195	U	0.284	1.00	0.471	pCi/L	0.13	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	104		40 - 110							
Y Carrier	86.4		40 - 110							

Lab Sample ID: MB 160-405924/23-A
Matrix: Water
Analysis Batch: 407599

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 405924

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.1771	U	0.297	0.297	1.00	0.502	pCi/L	12/14/18 20:20	12/27/18 16:47	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	105		40 - 110					12/14/18 20:20	12/27/18 16:47	1
Y Carrier	84.5		40 - 110					12/14/18 20:20	12/27/18 16:47	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

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

Lab Sample ID: LCS 160-405924/1-A
Matrix: Water
Analysis Batch: 407599

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 405924

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	12.1	11.32		1.34	1.00	0.495	pCi/L	93	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	85.6		40 - 110

Lab Sample ID: 400-163353-B-1-B DU
Matrix: Water
Analysis Batch: 407599

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 405924

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.193	U	0.5089		0.317	1.00	0.475	pCi/L	0.51	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	97.9		40 - 110
Y Carrier	92.3		40 - 110

Lab Sample ID: MB 160-406085/10-A
Matrix: Water
Analysis Batch: 407607

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 406085

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1753	U	0.263	0.263	1.00	0.501	pCi/L	12/17/18 09:30	12/27/18 11:52	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110	12/17/18 09:30	12/27/18 11:52	1
Y Carrier	89.0		40 - 110	12/17/18 09:30	12/27/18 11:52	1

Lab Sample ID: LCS 160-406085/1-A
Matrix: Water
Analysis Batch: 407607

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 406085

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	12.1	12.20		1.44	1.00	0.628	pCi/L	101	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	101		40 - 110
Y Carrier	83.4		40 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

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

Lab Sample ID: 400-163351-3 DU
Matrix: Water
Analysis Batch: 407607

Client Sample ID: AY28198 PZ-6
Prep Type: Total/NA
Prep Batch: 406085

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.150	U	0.1196	U	0.312	1.00	0.537	pCi/L	0.04	1

Carrier	%Yield	DU Qualifier	Limits
Ba Carrier	97.6		40 - 110
Y Carrier	85.6		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-163351-3 DU
Matrix: Water
Analysis Batch: 409951

Client Sample ID: AY28198 PZ-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.238	U	0.1385	U	0.318	5.00	0.537	pCi/L	0.14	

Lab Sample ID: 400-163351-23 DU
Matrix: Water
Analysis Batch: 409951

Client Sample ID: AY28205 MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.213	U	0.3001	U	0.292	5.00	0.471	pCi/L	0.14	

Chain of Custody Record

Client Information
 Client Name: Laura Midkiff
 Company: Alabama Power General Test Laboratory
 Address: 744 County Rd 87 GSC #8
 City: Calera
 State: AL, Zip: 35040
 Phone: 205-664-6197 (Tel)
 Email: lmidkiff@southernco.com
 Project Name: CCR
 Site: Gadsden Ash Pond 1189

Sampler: Ben Rothschild
Lab PM: Whitney, Cheyenne R
Client Contact: Laura Midkiff
Lab Email: Whitney.whit@testamericainc.com

Due Date Requested:
 TAT Requested (days):
 PO #: 205-664-6197 (Tel)
 WG #: lmidkiff@southernco.com
 Project #: 46007143
 CCR: SSOwP

Analysis Requested
 Matrix: 9M 4500 SO₄ F, 9M 4500 CL F, 9M 4500 F C
 Field Filtered Sample (Yes or No):
 Field Filtered (Yes or No):
 Total Number of Containers: 4

Sample Identification

Sample Identification	Sample Date	Sample Time	Sample Type (C-comp, G-grab)	Matrix (Inorganic, Organic, Dioxin/Furan, PCB)	Preservation Code:	Special Instructions/Note:
AY26198	12/3/18	11:40	G	Water	PZ-6	
AY26199	12/3/18	13:13	G	Water	PZ-5	
AY26200	12/3/18	14:48	G	Water	PZ-1	
AY26201	12/3/18	14:48	G	Water	PZ-1 DUP (Sample Duplicate)	
AY26202	12/3/18	15:52	G	Water	MMW-9	
AY26203	12/3/18	16:15	G	Water	FB-1 (Field Blank)	
AY26204	12/4/18	09:34	G	Water	MMW-2	
AY26206	12/4/18	12:07	G	Water	MMW-11	
AY26207	12/4/18	13:05	G	Water	MMW-10	
AY26208	12/4/18	14:36	G	Water	MMW-7	
AY26209	12/4/18	15:58	G	Water	MMW-8	
AY26210	12/4/18	16:25	G	Water	FB-2 (Field Blank)	
AY26211	12/5/18	16:36	G	Water	MMW-17	
AY26212	12/5/18	11:53	G	Water	MMW-16	
AY26213	12/5/18	12:53	G	Water	MMW-14	
AY26214	12/5/18	12:53	G	Water	MMW-14 DUP (Sample Duplicate)	
AY26215	12/5/18	14:16	G	Water	MMW-5	
AY26216	12/5/18	15:10	G	Water	MMW-9	
AY26217	12/5/18	16:09	G	Water	MMW-12	
AY26218	12/5/18	16:30	G	Water	EB-1 (Equipment Blank)	
AY26205	12/4/18	10:26	G	Water	MMW-1	

Special Instructions/Note:
 PZ-6
 PZ-5
 PZ-1
 PZ-1 DUP (Sample Duplicate)
 MMW-9
 FB-1 (Field Blank)
 MMW-2
 MMW-11
 MMW-10
 MMW-7
 MMW-8
 FB-2 (Field Blank)
 MMW-17
 MMW-16
 MMW-14
 MMW-14 DUP (Sample Duplicate)
 MMW-5
 MMW-9
 MMW-12
 EB-1 (Equipment Blank)
 MMW-1

Sample Disposal: A fee may be assessed if samples are retained longer than 1 month.
 Return To Client: Archive For: _____ Months
 Special Instructions/QC Requirements:

Deliverable Requested: Non-Hazard Flammable Skin Irritant Unknown Radiological
 Poison B Poison A Other (specify)

Empty Kit Relinquished by: _____
 Relinquished by: Laura Midkiff
 Relinquished by: _____
 Relinquished by: _____

Custody Seal: _____
 Date/Time: 12/10/2018 11:15
 Date/Time: _____
 Date/Time: _____

Company: APC
 Company: _____
 Company: _____

Received by: _____
 Date/Time: 12/18/18 10:51
 Date/Time: _____
 Date/Time: _____

Method of Shipment: _____
 Date/Time: 12/11/18 9:18
 Date/Time: _____
 Date/Time: _____

Company: APC
 Company: _____
 Company: _____



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-163351-2
SDG Number: Gadsden Ash Pond 1189

Login Number: 163351

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	RADS-14.8°C,14.5°C IR-8 / 1.8°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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-163351-2
SDG Number: Gadsden Ash Pond 1189

Login Number: 163351
List Number: 4
Creator: Hellm, Michael

List Source: TestAmerica St. Louis
List Creation: 12/13/18 11:43 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	20.0
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
 SDG: Gadsden Ash Pond 1189

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	01-12-20
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	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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	12-30-19
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

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	12-08-19
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	11-30-19
Iowa	State Program	7	373	12-01-18 *
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	90125	12-31-18 *
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163351-2
SDG: Gadsden Ash Pond 1189

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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1192
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks, Greg Dyer, & Corey Ladner
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control: Laura Midkiff
Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2019.01.23 08:26:14 -0600

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2019.01.25 15:14:11 -0600



Metals ICP

Gadsden Ash Pond

WMWGADAP_1192

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY28931	635318	WMWGADAP_1192
AY28932	635318	WMWGADAP_1192
AY28933	635318	WMWGADAP_1192
AY28934	635318	WMWGADAP_1192
AY28935	635318	WMWGADAP_1192

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects.
8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1192

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY28931	635345	WMWGADAP_1192
AY28932	635345	WMWGADAP_1192
AY28933	635345	WMWGADAP_1192
AY28934	635345	WMWGADAP_1192
AY28935	635345	WMWGADAP_1192

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1192

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY28931	634997	WMWGADAP_1192
AY28932	634997	WMWGADAP_1192
AY28933	634997	WMWGADAP_1192
AY28934	634997	WMWGADAP_1192
AY28935	634997	WMWGADAP_1192

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1192

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AY28931	635158	WMWGADAP_1192
AY28932	635158	WMWGADAP_1192
AY28933	635158	WMWGADAP_1192
AY28934	635158	WMWGADAP_1192
AY28935	635158	WMWGADAP_1192

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AY28931
 - AY28935

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28931

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	1/4/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0008	0.003	J 0.000821	mg/L
* Cobalt, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/20/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/26/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	12/20/2018	SM 2540C		1			12/20/2018	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28931

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit					Limit	Rec	Limit	Prec		
AY28935	Lead, Total	mg/L	0.0000117	0.0022	0.10	0.0895	0.0933	0.0949	0.085 to 0.115		89.5	70 to 130	4.22	20
AY28935	Mercury, Total by CVAA	mg/L	0.000000518	0.0005	0.004	0.00400	0.00401	0.00406	0.0034 to 0.0046		99.9	70 to 130	0.452	20
AY28935	Chromium, Total	mg/L	0.0000612	0.0044	0.10	0.0976	0.0958	0.0972	0.085 to 0.115		97.6	70 to 130	1.86	20
AY28935	Antimony, Total	mg/L	0.000237	0.00176	0.10	0.0906	0.0890	0.0869	0.085 to 0.115		90.6	70 to 130	1.79	20
AY28935	Cobalt, Total	mg/L	0.00000250	0.0044	0.10	0.0989	0.0953	0.0922	0.085 to 0.115		98.9	70 to 130	3.62	20
AY28935	Selenium, Total	mg/L	0.0000210	0.0044	0.10	0.0969	0.0959	0.102	0.085 to 0.115		96.9	70 to 130	0.988	20
AY28935	Thallium, Total	mg/L	0.0000130	0.00044	0.10	0.0879	0.0919	0.0954	0.085 to 0.115		87.9	70 to 130	4.43	20
AY28935	Barium, Total	mg/L	0.00000330	0.0044	0.10	0.102	0.0988	0.0969	0.085 to 0.115		102	70 to 130	3.33	20
AY28935	Beryllium, Total	mg/L	0.0000150	0.00132	0.10	0.0977	0.102	0.0963	0.085 to 0.115		97.7	70 to 130	4.54	20
AY28935	Boron, Total	mg/L	-0.0000381	0.044	1.00	1.03	1.03	0.998	0.85 to 1.15		103	70 to 130	0.141	20
AY28935	Calcium, Total	mg/L	-0.00813	0.22	5.00	5.21	5.24	5.19	4.25 to 5.75		104	70 to 130	0.645	20
AY28935	Arsenic, Total	mg/L	0.0000148	0.0022	0.10	0.0936	0.0924	0.0979	0.085 to 0.115		93.6	70 to 130	1.30	20
AY28935	Cadmium, Total	mg/L	0.00000210	0.00066	0.10	0.1000	0.0972	0.0921	0.085 to 0.115		100	70 to 130	2.78	20
AY28935	Lithium, Total	mg/L	-0.0000251	0.022	0.20	0.206	0.206	0.198	0.17 to 0.23		103	70 to 130	0.0563	20
AY28935	Molybdenum, Total	mg/L	0.0000528	0.0044	0.10	0.0923	0.0901	0.0914	0.085 to 0.115		92.3	70 to 130	2.35	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AY28931

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28934	Solids, Dissolved	mg/L	-1.00	25			122	48.0	40 to 60			4.31	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY28932

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	0.199	mg/L
* Beryllium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	1/4/2019	EPA 200.7		2.03	0.02	0.1	J 0.0330	mg/L
* Calcium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.1	0.5	20.9	mg/L
* Cadmium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/20/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.01	0.02	J 0.0121	mg/L
* Molybdenum, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	J 0.00215	mg/L
* Lead, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/26/2018	SM 2540C		1		25	164	mg/L
Filter Completion Date	CRB	12/20/2018	SM 2540C		1			12/20/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY28932

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			MB	Limit					Limit	Rec	Limit	Prec		
AY28935	Lead, Total	mg/L	0.0000117	0.0022	0.10	0.0895	0.0933	0.0949	0.085 to 0.115		89.5	70 to 130	4.22	20
AY28935	Mercury, Total by CVAA	mg/L	0.000000518	0.0005	0.004	0.00400	0.00401	0.00406	0.0034 to 0.0046		99.9	70 to 130	0.452	20
AY28935	Chromium, Total	mg/L	0.0000612	0.0044	0.10	0.0976	0.0958	0.0972	0.085 to 0.115		97.6	70 to 130	1.86	20
AY28935	Selenium, Total	mg/L	0.0000210	0.0044	0.10	0.0969	0.0959	0.102	0.085 to 0.115		96.9	70 to 130	0.988	20
AY28935	Thallium, Total	mg/L	0.0000130	0.00044	0.10	0.0879	0.0919	0.0954	0.085 to 0.115		87.9	70 to 130	4.43	20
AY28935	Arsenic, Total	mg/L	0.0000148	0.0022	0.10	0.0936	0.0924	0.0979	0.085 to 0.115		93.6	70 to 130	1.30	20
AY28935	Cadmium, Total	mg/L	0.00000210	0.00066	0.10	0.1000	0.0972	0.0921	0.085 to 0.115		100	70 to 130	2.78	20
AY28935	Lithium, Total	mg/L	-0.0000251	0.022	0.20	0.206	0.206	0.198	0.17 to 0.23		103	70 to 130	0.0563	20
AY28935	Molybdenum, Total	mg/L	0.0000528	0.0044	0.10	0.0923	0.0901	0.0914	0.085 to 0.115		92.3	70 to 130	2.35	20
AY28935	Barium, Total	mg/L	0.00000330	0.0044	0.10	0.102	0.0988	0.0969	0.085 to 0.115		102	70 to 130	3.33	20
AY28935	Beryllium, Total	mg/L	0.0000150	0.00132	0.10	0.0977	0.102	0.0963	0.085 to 0.115		97.7	70 to 130	4.54	20
AY28935	Boron, Total	mg/L	-0.0000381	0.044	1.00	1.03	1.03	0.998	0.85 to 1.15		103	70 to 130	0.141	20
AY28935	Calcium, Total	mg/L	-0.00813	0.22	5.00	5.21	5.24	5.19	4.25 to 5.75		104	70 to 130	0.645	20
AY28935	Antimony, Total	mg/L	0.000237	0.00176	0.10	0.0906	0.0890	0.0869	0.085 to 0.115		90.6	70 to 130	1.79	20
AY28935	Cobalt, Total	mg/L	0.00000250	0.0044	0.10	0.0989	0.0953	0.0922	0.085 to 0.115		98.9	70 to 130	3.62	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AY28932

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY28934	Solids, Dissolved	mg/L	-1.00	25			122	48.0	40 to 60		4.31	5

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CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY28933

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	J 0.00113	mg/L
* Barium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	0.0461	mg/L
* Beryllium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0006	0.003	J 0.000761	mg/L
* Boron, Total	GAS	1/4/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.1	0.5	16.4	mg/L
* Cadmium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0003	0.001	J 0.000438	mg/L
* Antimony, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.005	0.0234	mg/L
* Chromium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/20/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	J 0.00395	mg/L
* Thallium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/26/2018	SM 2540C		1		25	126	mg/L
Filter Completion Date	CRB	12/20/2018	SM 2540C		1			12/20/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY28933

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			MB	Limit					Limit	Rec	Limit	Prec		
AY28935	Lead, Total	mg/L	0.0000117	0.0022	0.10	0.0895	0.0933	0.0949	0.085 to 0.115		89.5	70 to 130	4.22	20
AY28935	Mercury, Total by CVAA	mg/L	0.000000518	0.0005	0.004	0.00400	0.00401	0.00406	0.0034 to 0.0046		99.9	70 to 130	0.452	20
AY28935	Chromium, Total	mg/L	0.0000612	0.0044	0.10	0.0976	0.0958	0.0972	0.085 to 0.115		97.6	70 to 130	1.86	20
AY28935	Antimony, Total	mg/L	0.000237	0.00176	0.10	0.0906	0.0890	0.0869	0.085 to 0.115		90.6	70 to 130	1.79	20
AY28935	Cobalt, Total	mg/L	0.00000250	0.0044	0.10	0.0989	0.0953	0.0922	0.085 to 0.115		98.9	70 to 130	3.62	20
AY28935	Selenium, Total	mg/L	0.0000210	0.0044	0.10	0.0969	0.0959	0.102	0.085 to 0.115		96.9	70 to 130	0.988	20
AY28935	Thallium, Total	mg/L	0.0000130	0.00044	0.10	0.0879	0.0919	0.0954	0.085 to 0.115		87.9	70 to 130	4.43	20
AY28935	Barium, Total	mg/L	0.00000330	0.0044	0.10	0.102	0.0988	0.0969	0.085 to 0.115		102	70 to 130	3.33	20
AY28935	Beryllium, Total	mg/L	0.0000150	0.00132	0.10	0.0977	0.102	0.0963	0.085 to 0.115		97.7	70 to 130	4.54	20
AY28935	Boron, Total	mg/L	-0.0000381	0.044	1.00	1.03	1.03	0.998	0.85 to 1.15		103	70 to 130	0.141	20
AY28935	Calcium, Total	mg/L	-0.00813	0.22	5.00	5.21	5.24	5.19	4.25 to 5.75		104	70 to 130	0.645	20
AY28935	Arsenic, Total	mg/L	0.0000148	0.0022	0.10	0.0936	0.0924	0.0979	0.085 to 0.115		93.6	70 to 130	1.30	20
AY28935	Cadmium, Total	mg/L	0.00000210	0.00066	0.10	0.1000	0.0972	0.0921	0.085 to 0.115		100	70 to 130	2.78	20
AY28935	Lithium, Total	mg/L	-0.0000251	0.022	0.20	0.206	0.206	0.198	0.17 to 0.23		103	70 to 130	0.0563	20
AY28935	Molybdenum, Total	mg/L	0.0000528	0.0044	0.10	0.0923	0.0901	0.0914	0.085 to 0.115		92.3	70 to 130	2.35	20

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AY28933

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY28934	Solids, Dissolved	mg/L	-1.00	25			122	48.0	40 to 60		4.31	5

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AY28934

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	J 0.00115	mg/L
* Barium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	0.0475	mg/L
* Beryllium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0006	0.003	J 0.000745	mg/L
* Boron, Total	GAS	1/4/2019	EPA 200.7		2.03	0.02	0.1	J 0.0201	mg/L
* Calcium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.1	0.5	16.5	mg/L
* Cadmium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0003	0.001	J 0.000513	mg/L
* Antimony, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.005	0.0240	mg/L
* Chromium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/20/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	J 0.00370	mg/L
* Thallium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/26/2018	SM 2540C		1		25	133	mg/L
Filter Completion Date	CRB	12/20/2018	SM 2540C		1			12/20/2018	Date

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AY28934

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			Limit	MB					Limit	Rec	Limit	Prec		
AY28935	Lead, Total	mg/L	0.0000117	0.0022	0.10	0.0895	0.0933	0.0949	0.085 to 0.115		89.5	70 to 130	4.22	20
AY28935	Chromium, Total	mg/L	0.0000612	0.0044	0.10	0.0976	0.0958	0.0972	0.085 to 0.115		97.6	70 to 130	1.86	20
AY28935	Mercury, Total by CVAA	mg/L	0.000000518	0.0005	0.004	0.00400	0.00401	0.00406	0.0034 to 0.0046		99.9	70 to 130	0.452	20
AY28935	Antimony, Total	mg/L	0.000237	0.00176	0.10	0.0906	0.0890	0.0869	0.085 to 0.115		90.6	70 to 130	1.79	20
AY28935	Cobalt, Total	mg/L	0.00000250	0.0044	0.10	0.0989	0.0953	0.0922	0.085 to 0.115		98.9	70 to 130	3.62	20
AY28935	Selenium, Total	mg/L	0.0000210	0.0044	0.10	0.0969	0.0959	0.102	0.085 to 0.115		96.9	70 to 130	0.988	20
AY28935	Thallium, Total	mg/L	0.0000130	0.00044	0.10	0.0879	0.0919	0.0954	0.085 to 0.115		87.9	70 to 130	4.43	20
AY28935	Barium, Total	mg/L	0.00000330	0.0044	0.10	0.102	0.0988	0.0969	0.085 to 0.115		102	70 to 130	3.33	20
AY28935	Beryllium, Total	mg/L	0.0000150	0.00132	0.10	0.0977	0.102	0.0963	0.085 to 0.115		97.7	70 to 130	4.54	20
AY28935	Boron, Total	mg/L	-0.0000381	0.044	1.00	1.03	1.03	0.998	0.85 to 1.15		103	70 to 130	0.141	20
AY28935	Calcium, Total	mg/L	-0.00813	0.22	5.00	5.21	5.24	5.19	4.25 to 5.75		104	70 to 130	0.645	20
AY28935	Arsenic, Total	mg/L	0.0000148	0.0022	0.10	0.0936	0.0924	0.0979	0.085 to 0.115		93.6	70 to 130	1.30	20
AY28935	Cadmium, Total	mg/L	0.00000210	0.00066	0.10	0.1000	0.0972	0.0921	0.085 to 0.115		100	70 to 130	2.78	20
AY28935	Lithium, Total	mg/L	-0.0000251	0.022	0.20	0.206	0.206	0.198	0.17 to 0.23		103	70 to 130	0.0563	20
AY28935	Molybdenum, Total	mg/L	0.0000528	0.0044	0.10	0.0923	0.0901	0.0914	0.085 to 0.115		92.3	70 to 130	2.35	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AY28934

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AY28934	Solids, Dissolved	mg/L	-1.00	25			122	48.0	40 to 60		4.31	5

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MDL's and RL's are adjusted for sample dilution, as applicable

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Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY28935

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	1/4/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	12/20/2018	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/4/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	1/2/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	12/26/2018	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	12/20/2018	SM 2540C		1			12/20/2018	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY28935

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			MB	Limit					Limit	Rec	Limit	Prec		
AY28935	Lead, Total	mg/L	0.0000117	0.0022	0.10	0.0895	0.0933	0.0949	0.085 to 0.115		89.5	70 to 130	4.22	20
AY28935	Mercury, Total by CVAA	mg/L	0.000000518	0.0005	0.004	0.00400	0.00401	0.00406	0.0034 to 0.0046		99.9	70 to 130	0.452	20
AY28935	Chromium, Total	mg/L	0.0000612	0.0044	0.10	0.0976	0.0958	0.0972	0.085 to 0.115		97.6	70 to 130	1.86	20
AY28935	Selenium, Total	mg/L	0.0000210	0.0044	0.10	0.0969	0.0959	0.102	0.085 to 0.115		96.9	70 to 130	0.988	20
AY28935	Thallium, Total	mg/L	0.0000130	0.00044	0.10	0.0879	0.0919	0.0954	0.085 to 0.115		87.9	70 to 130	4.43	20
AY28935	Arsenic, Total	mg/L	0.0000148	0.0022	0.10	0.0936	0.0924	0.0979	0.085 to 0.115		93.6	70 to 130	1.30	20
AY28935	Cadmium, Total	mg/L	0.00000210	0.00066	0.10	0.1000	0.0972	0.0921	0.085 to 0.115		100	70 to 130	2.78	20
AY28935	Lithium, Total	mg/L	-0.0000251	0.022	0.20	0.206	0.206	0.198	0.17 to 0.23		103	70 to 130	0.0563	20
AY28935	Molybdenum, Total	mg/L	0.0000528	0.0044	0.10	0.0923	0.0901	0.0914	0.085 to 0.115		92.3	70 to 130	2.35	20
AY28935	Barium, Total	mg/L	0.00000330	0.0044	0.10	0.102	0.0988	0.0969	0.085 to 0.115		102	70 to 130	3.33	20
AY28935	Beryllium, Total	mg/L	0.0000150	0.00132	0.10	0.0977	0.102	0.0963	0.085 to 0.115		97.7	70 to 130	4.54	20
AY28935	Boron, Total	mg/L	-0.0000381	0.044	1.00	1.03	1.03	0.998	0.85 to 1.15		103	70 to 130	0.141	20
AY28935	Calcium, Total	mg/L	-0.00813	0.22	5.00	5.21	5.24	5.19	4.25 to 5.75		104	70 to 130	0.645	20
AY28935	Antimony, Total	mg/L	0.000237	0.00176	0.10	0.0906	0.0890	0.0869	0.085 to 0.115		90.6	70 to 130	1.79	20
AY28935	Cobalt, Total	mg/L	0.00000250	0.0044	0.10	0.0989	0.0953	0.0922	0.085 to 0.115		98.9	70 to 130	3.62	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

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Laboratory certification ID: E571114

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 18-Dec-18
 Customer ID:
 Delivery Date: 18-Dec-18

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AY28935

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
			Limit	Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AY28934	Solids, Dissolved	mg/L	-1.00	25			122	48.0	40 to 60			4.31	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information

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: 400-163959-3

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1192

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

1/9/2019 6:40:00 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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

Job ID: 400-163959-3

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-163959-3

General Chemistry

Method(s) SM 4500 Cl- E: Due to the concentration of chlorides in the parent sample the MS/MSD were diluted after the spike. The spike amounts were adjusted by the dilution factor. (400-163959-A-3 MS) and (400-163959-A-3 MSD)

Method(s) SM 4500 Cl- E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 425249 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 Cl- E: The following samples were diluted to bring the concentration of target analytes within the calibration range: (400-163959-A-3), (400-163959-A-3 MS) and (400-163959-A-3 MSD). 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. (240-106004-E-4 MS), (240-106004-E-4 MSD), (400-164000-I-1 MS) and (400-164000-I-1 MSD)

Method(s) SM 4500 SO4 E: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 425208 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: AY28938 MW-16 (400-163959-9), AY28939 MW-16 DUP (400-163959-10), (240-106004-E-4), (240-106004-E-4 MS), (240-106004-E-4 MSD), (400-164000-I-1), (400-164000-I-1 MS) and (400-164000-I-1 MSD). Elevated reporting limits (RLs) are provided.

Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28936 FB-1

Lab Sample ID: 400-163959-7

No Detections.

Client Sample ID: AY28937 MW-17

Lab Sample ID: 400-163959-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.15		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	11		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28938 MW-16

Lab Sample ID: 400-163959-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.6		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.14		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	76		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28939 MW-16 DUP

Lab Sample ID: 400-163959-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.6		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.16		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	76		25	7.0	mg/L	5		SM 4500 SO4 E	Total/NA

Client Sample ID: AY28940 EB-1

Lab Sample ID: 400-163959-11

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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

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Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-163959-7	AY28936 FB-1	Water	12/18/18 10:45	12/21/18 10:08
400-163959-8	AY28937 MW-17	Water	12/18/18 10:55	12/21/18 10:08
400-163959-9	AY28938 MW-16	Water	12/18/18 12:30	12/21/18 10:08
400-163959-10	AY28939 MW-16 DUP	Water	12/18/18 12:30	12/21/18 10:08
400-163959-11	AY28940 EB-1	Water	12/18/18 12:55	12/21/18 10:08

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
 SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28936 FB-1

Lab Sample ID: 400-163959-7

Date Collected: 12/18/18 10:45

Matrix: Water

Date Received: 12/21/18 10:08

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/31/18 10:19	1
Fluoride	<0.032		0.10	0.032	mg/L			12/31/18 12:55	1
Sulfate	<1.4		5.0	1.4	mg/L			12/31/18 09:04	1

Client Sample ID: AY28937 MW-17

Lab Sample ID: 400-163959-8

Date Collected: 12/18/18 10:55

Matrix: Water

Date Received: 12/21/18 10:08

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.4		2.0	1.4	mg/L			12/31/18 10:19	1
Fluoride	0.15		0.10	0.032	mg/L			01/03/19 10:28	1
Sulfate	11		5.0	1.4	mg/L			12/31/18 09:05	1

Client Sample ID: AY28938 MW-16

Lab Sample ID: 400-163959-9

Date Collected: 12/18/18 12:30

Matrix: Water

Date Received: 12/21/18 10:08

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		2.0	1.4	mg/L			12/31/18 10:19	1
Fluoride	0.14		0.10	0.032	mg/L			12/31/18 13:02	1
Sulfate	76		25	7.0	mg/L			12/31/18 09:38	5

Client Sample ID: AY28939 MW-16 DUP

Lab Sample ID: 400-163959-10

Date Collected: 12/18/18 12:30

Matrix: Water

Date Received: 12/21/18 10:08

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		2.0	1.4	mg/L			12/31/18 13:32	1
Fluoride	0.16		0.10	0.032	mg/L			12/31/18 12:58	1
Sulfate	76		25	7.0	mg/L			12/31/18 09:38	5

Client Sample ID: AY28940 EB-1

Lab Sample ID: 400-163959-11

Date Collected: 12/18/18 12:55

Matrix: Water

Date Received: 12/21/18 10:08

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/31/18 13:32	1
Fluoride	<0.032		0.10	0.032	mg/L			12/31/18 13:10	1
Sulfate	<1.4		5.0	1.4	mg/L			12/31/18 09:05	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

Qualifiers

General Chemistry

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28936 FB-1

Lab Sample ID: 400-163959-7

Date Collected: 12/18/18 10:45

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	425249	12/31/18 10:19	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	425260	12/31/18 12:55	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	425208	12/31/18 09:04	RRC	TAL PEN

Client Sample ID: AY28937 MW-17

Lab Sample ID: 400-163959-8

Date Collected: 12/18/18 10:55

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	425249	12/31/18 10:19	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	425455	01/03/19 10:28	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	425208	12/31/18 09:05	RRC	TAL PEN

Client Sample ID: AY28938 MW-16

Lab Sample ID: 400-163959-9

Date Collected: 12/18/18 12:30

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	425249	12/31/18 10:19	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	425260	12/31/18 13:02	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	425208	12/31/18 09:38	RRC	TAL PEN

Client Sample ID: AY28939 MW-16 DUP

Lab Sample ID: 400-163959-10

Date Collected: 12/18/18 12:30

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	425269	12/31/18 13:32	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	425260	12/31/18 12:58	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		5	425208	12/31/18 09:38	RRC	TAL PEN

Client Sample ID: AY28940 EB-1

Lab Sample ID: 400-163959-11

Date Collected: 12/18/18 12:55

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	425269	12/31/18 13:32	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	425260	12/31/18 13:10	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	425208	12/31/18 09:05	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

Laboratory References:

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

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QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

General Chemistry

Analysis Batch: 425208

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163959-7	AY28936 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-163959-8	AY28937 MW-17	Total/NA	Water	SM 4500 SO4 E	
400-163959-9	AY28938 MW-16	Total/NA	Water	SM 4500 SO4 E	
400-163959-10	AY28939 MW-16 DUP	Total/NA	Water	SM 4500 SO4 E	
400-163959-11	AY28940 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-425208/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-425208/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-425208/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
240-106004-E-4 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
240-106004-E-4 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	
400-164000-I-1 MS	Matrix Spike	Total/NA	Water	SM 4500 SO4 E	
400-164000-I-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 425249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163959-7	AY28936 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-163959-8	AY28937 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-163959-9	AY28938 MW-16	Total/NA	Water	SM 4500 Cl- E	
MB 400-425249/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-425249/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-425249/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-163959-A-3 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-163959-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 425260

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163959-7	AY28936 FB-1	Total/NA	Water	SM 4500 F C	
400-163959-9	AY28938 MW-16	Total/NA	Water	SM 4500 F C	
400-163959-10	AY28939 MW-16 DUP	Total/NA	Water	SM 4500 F C	
400-163959-11	AY28940 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-425260/4	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-425260/5	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-163133-E-1 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-163133-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-163959-A-3 DU	Duplicate	Total/NA	Water	SM 4500 F C	

Analysis Batch: 425269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163959-10	AY28939 MW-16 DUP	Total/NA	Water	SM 4500 Cl- E	
400-163959-11	AY28940 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-425269/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-425269/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-425269/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-164169-B-1 MS	Matrix Spike	Total/NA	Water	SM 4500 Cl- E	
400-164169-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 425455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163959-8	AY28937 MW-17	Total/NA	Water	SM 4500 F C	
MB 400-425455/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-425455/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	

TestAmerica Pensacola

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
SDG: Gadsden Ash Pond 1192

General Chemistry (Continued)

Analysis Batch: 425455 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163982-D-2 MS	Matrix Spike	Total/NA	Water	SM 4500 F C	
400-163982-D-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 F C	
400-164175-A-3 DU	Duplicate	Total/NA	Water	SM 4500 F C	

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- 12
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QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
 SDG: Gadsden Ash Pond 1192

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-425249/6
Matrix: Water
Analysis Batch: 425249

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/31/18 10:09	1

Lab Sample ID: LCS 400-425249/7
Matrix: Water
Analysis Batch: 425249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

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

Lab Sample ID: MRL 400-425249/3
Matrix: Water
Analysis Batch: 425249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.52		mg/L		126	50 - 150

Lab Sample ID: 400-163959-A-3 MS
Matrix: Water
Analysis Batch: 425249

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	160		10.0	165	4	mg/L		42	73 - 120

Lab Sample ID: 400-163959-A-3 MSD
Matrix: Water
Analysis Batch: 425249

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Chloride	160		10.0	164	4	mg/L		33	73 - 120	1	8

Lab Sample ID: MB 400-425269/6
Matrix: Water
Analysis Batch: 425269

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			12/31/18 13:32	1

Lab Sample ID: LCS 400-425269/7
Matrix: Water
Analysis Batch: 425269

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	32.3		mg/L		108	90 - 110

Lab Sample ID: MRL 400-425269/3
Matrix: Water
Analysis Batch: 425269

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.62		mg/L		131	50 - 150

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
 SDG: Gadsden Ash Pond 1192

Lab Sample ID: 400-164169-B-1 MS
Matrix: Water
Analysis Batch: 425269

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	7.5		10.0	19.1		mg/L		116	73 - 120

Lab Sample ID: 400-164169-B-1 MSD
Matrix: Water
Analysis Batch: 425269

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	7.5		10.0	19.1		mg/L		116	73 - 120	0	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-425260/4
Matrix: Water
Analysis Batch: 425260

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			12/31/18 11:57	1

Lab Sample ID: LCS 400-425260/5
Matrix: Water
Analysis Batch: 425260

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.84		mg/L		96	90 - 110

Lab Sample ID: 400-163133-E-1 MS
Matrix: Water
Analysis Batch: 425260

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.17		1.00	1.21		mg/L		104	75 - 125

Lab Sample ID: 400-163133-E-1 MSD
Matrix: Water
Analysis Batch: 425260

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.17		1.00	1.23		mg/L		106	75 - 125	2	4

Lab Sample ID: 400-163959-A-3 DU
Matrix: Water
Analysis Batch: 425260

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.050	J	0.0500	J	mg/L		0	4

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
 SDG: Gadsden Ash Pond 1192

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: MB 400-425455/3
Matrix: Water
Analysis Batch: 425455

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			01/03/19 09:47	1

Lab Sample ID: LCS 400-425455/4
Matrix: Water
Analysis Batch: 425455

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.69		mg/L		92	90 - 110

Lab Sample ID: 400-163982-D-2 MS
Matrix: Water
Analysis Batch: 425455

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	<0.032		1.00	0.960		mg/L		96	75 - 125

Lab Sample ID: 400-163982-D-2 MSD
Matrix: Water
Analysis Batch: 425455

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	<0.032		1.00	0.960		mg/L		96	75 - 125	0	4

Lab Sample ID: 400-164175-A-3 DU
Matrix: Water
Analysis Batch: 425455

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.090	J	0.0900	J	mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-425208/6
Matrix: Water
Analysis Batch: 425208

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			12/31/18 08:51	1

Lab Sample ID: LCS 400-425208/7
Matrix: Water
Analysis Batch: 425208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	15.3		mg/L		102	90 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
 SDG: Gadsden Ash Pond 1192

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

Lab Sample ID: MRL 400-425208/3
Matrix: Water
Analysis Batch: 425208

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.27	J	mg/L		85	50 - 150

Lab Sample ID: 240-106004-E-4 MS
Matrix: Water
Analysis Batch: 425208

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	180		10.0	180	4	mg/L		43	77 - 128

Lab Sample ID: 240-106004-E-4 MSD
Matrix: Water
Analysis Batch: 425208

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	180		10.0	181	4	mg/L		54	77 - 128	1	5

Lab Sample ID: 400-164000-I-1 MS
Matrix: Water
Analysis Batch: 425208

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	38		10.0	47.7		mg/L		92	77 - 128

Lab Sample ID: 400-164000-I-1 MSD
Matrix: Water
Analysis Batch: 425208

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	38		10.0	48.4		mg/L		99	77 - 128	1	5

Chain of Custody Record

Client Information Sampler: Ben Rothschald Client Contact: Laura Midtiff Phone: _____ Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-864-6197(Tel) Email: lmidtiff@southernco.com Project #: 40007143 CCR Site: Gadsden Ash Pond 1192		Lab Pk: Whitire, Cheyenne R E-Mail: Cheyenne.whitire@testamericainc.com		COC No: 400-58525-24537.1 Page: Page 1 of 1 Job #: _____	
Due Date Requested: TAT Requested (days): Routine		Analysis Requested			
Sample Identification		Sample Data		Sample Type (C-Comp, G-grab)	
Sample ID: AY28936 AY28937 AY28938 AY28939 AY28940		Sample Date: 12/18/18 12/18/18 12/18/18 12/18/18 12/18/18		Matrix (Preserv, Sample, Container, Stratum, Area) Water Water Water Water Water	
Preservation Code:		Sample Time: 10:45 10:55 12:30 12:30 12:55		Preservation Code:	
Perform MS/MSD (Yes or No)		Filtered Sample (Yes or No)		Total Number of Containers	
X Y		X X X X X		X X X X X	
Special Instructions/Note:		SM 4500 F.C SM 4500 Cl.E SM 4500 SO4.E 9315_R#228_9320_R#220_R#226R#228_GFC		Special Instructions/Note: FB-1 (Field Blank) MW-17 MW-16 MW-16 DUP (Sample Duplicate) EB-1 (Equipment Blank)	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NiH2SO4 F - MeOH H - Acetic Acid I - Acetic Acid J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AshAO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 T - H2SO4 U - Potassium Hydroxide V - Acetone W - pH 4.5 X - other (specify)					
Deliverable Requested: <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Empty Kit Relinquished by: _____ Date/Time: 12/20/2018 07:30 Relinquished by: Laura Midtiff Relinquished by: _____ Date/Time: _____ Relinquished by: _____ Date/Time: _____ Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No. _____					
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:					
Method of Shipment: _____ Received by: _____ Date/Time: 12/18/18 1008 Company Received by: _____ Date/Time: _____ Company Received by: _____ Date/Time: _____ Company Cooler Temperature: _____ °C and Other Remarks					



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-163959-3
SDG Number: Gadsden Ash Pond 1192

Login Number: 163959

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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	0.6°C , 10.0°C Rads 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	



Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-3
 SDG: Gadsden Ash Pond 1192

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	01-12-20
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	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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	12-30-19
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



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: 400-163959-4

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1192

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

1/25/2019 4:03:46 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
SDG: Gadsden Ash Pond 1192

Job ID: 400-163959-4

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-163959-4

RAD

Method(s) PrecSep_0: Radium-228 Prep Batch 407819: The following samples were prepared at a reduced aliquot due to limited volume: AY28936 FB-1 (400-163959-7), AY28937 MW-17 (400-163959-8), AY28937 MW-17 (400-163959-8[DUJ]), AY28938 MW-16 (400-163959-9), AY28939 MW-16 DUP (400-163959-10) and AY28940 EB-1 (400-163959-11).

Method(s) PrecSep-21: Radium-226 Prep Batch 407779: The following samples were prepared at a reduced aliquot due to limited volume: AY28936 FB-1 (400-163959-7), AY28937 MW-17 (400-163959-8), AY28937 MW-17 (400-163959-8[DUJ]), AY28938 MW-16 (400-163959-9), AY28939 MW-16 DUP (400-163959-10) and AY28940 EB-1 (400-163959-11).



Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
SDG: Gadsden Ash Pond 1192

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
SDG: Gadsden Ash Pond 1192

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-163959-7	AY28936 FB-1	Water	12/18/18 10:45	12/21/18 10:08
400-163959-8	AY28937 MW-17	Water	12/18/18 10:55	12/21/18 10:08
400-163959-9	AY28938 MW-16	Water	12/18/18 12:30	12/21/18 10:08
400-163959-10	AY28939 MW-16 DUP	Water	12/18/18 12:30	12/21/18 10:08
400-163959-11	AY28940 EB-1	Water	12/18/18 12:55	12/21/18 10:08

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28936 FB-1

Lab Sample ID: 400-163959-7

Date Collected: 12/18/18 10:45

Matrix: Water

Date Received: 12/21/18 10:08

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0112	U	0.0651	0.0651	1.00	0.128	pCi/L	12/28/18 09:26	01/21/19 12:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					12/28/18 09:26	01/21/19 12:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.00326	U	0.325	0.325	1.00	0.583	pCi/L	12/28/18 10:07	01/04/19 15:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.6		40 - 110					12/28/18 10:07	01/04/19 15:29	1
Y Carrier	83.7		40 - 110					12/28/18 10:07	01/04/19 15:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0145	U	0.331	0.331	5.00	0.583	pCi/L		01/24/19 17:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28937 MW-17

Lab Sample ID: 400-163959-8

Date Collected: 12/18/18 10:55

Matrix: Water

Date Received: 12/21/18 10:08

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0981	U	0.0785	0.0790	1.00	0.110	pCi/L	12/28/18 09:26	01/21/19 12:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					12/28/18 09:26	01/21/19 12:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.437	U	0.384	0.386	1.00	0.614	pCi/L	12/28/18 10:07	01/04/19 15:29	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.4		40 - 110					12/28/18 10:07	01/04/19 15:29	1
Y Carrier	81.9		40 - 110					12/28/18 10:07	01/04/19 15:29	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.535	U	0.392	0.394	5.00	0.614	pCi/L		01/24/19 17:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28938 MW-16

Lab Sample ID: 400-163959-9

Date Collected: 12/18/18 12:30

Matrix: Water

Date Received: 12/21/18 10:08

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.244		0.0986	0.101	1.00	0.0953	pCi/L	12/28/18 09:26	01/21/19 12:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/28/18 09:26	01/21/19 12:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.578	U	0.390	0.393	1.00	0.604	pCi/L	12/28/18 10:07	01/04/19 15:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/28/18 10:07	01/04/19 15:30	1
Y Carrier	79.3		40 - 110					12/28/18 10:07	01/04/19 15:30	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.822		0.402	0.406	5.00	0.604	pCi/L		01/24/19 17:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28939 MW-16 DUP

Lab Sample ID: 400-163959-10

Date Collected: 12/18/18 12:30

Matrix: Water

Date Received: 12/21/18 10:08

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.150		0.0908	0.0918	1.00	0.120	pCi/L	12/28/18 09:26	01/21/19 12:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					12/28/18 09:26	01/21/19 12:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.582		0.350	0.354	1.00	0.526	pCi/L	12/28/18 10:07	01/04/19 15:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.7		40 - 110					12/28/18 10:07	01/04/19 15:30	1
Y Carrier	81.1		40 - 110					12/28/18 10:07	01/04/19 15:30	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.732		0.362	0.366	5.00	0.526	pCi/L		01/24/19 17:31	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28940 EB-1

Lab Sample ID: 400-163959-11

Date Collected: 12/18/18 12:55

Matrix: Water

Date Received: 12/21/18 10:08

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0205	U	0.0591	0.0591	1.00	0.112	pCi/L	12/28/18 09:26	01/21/19 12:06	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/28/18 09:26	01/21/19 12:06	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.262	U	0.306	0.307	1.00	0.504	pCi/L	12/28/18 10:07	01/04/19 15:30	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					12/28/18 10:07	01/04/19 15:30	1
Y Carrier	83.7		40 - 110					12/28/18 10:07	01/04/19 15:30	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.283	U	0.312	0.313	5.00	0.504	pCi/L		01/24/19 17:31	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
SDG: Gadsden Ash Pond 1192

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28936 FB-1

Lab Sample ID: 400-163959-7

Date Collected: 12/18/18 10:45

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			407779	12/28/18 09:26	HET	TAL SL
Total/NA	Analysis	9315		1	411406	01/21/19 12:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			407819	12/28/18 10:07	HET	TAL SL
Total/NA	Analysis	9320		1	408962	01/04/19 15:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412088	01/24/19 17:31	CDR	TAL SL

Client Sample ID: AY28937 MW-17

Lab Sample ID: 400-163959-8

Date Collected: 12/18/18 10:55

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			407779	12/28/18 09:26	HET	TAL SL
Total/NA	Analysis	9315		1	411406	01/21/19 12:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			407819	12/28/18 10:07	HET	TAL SL
Total/NA	Analysis	9320		1	408962	01/04/19 15:29	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412088	01/24/19 17:31	CDR	TAL SL

Client Sample ID: AY28938 MW-16

Lab Sample ID: 400-163959-9

Date Collected: 12/18/18 12:30

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			407779	12/28/18 09:26	HET	TAL SL
Total/NA	Analysis	9315		1	411406	01/21/19 12:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			407819	12/28/18 10:07	HET	TAL SL
Total/NA	Analysis	9320		1	408962	01/04/19 15:30	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412088	01/24/19 17:31	CDR	TAL SL

Client Sample ID: AY28939 MW-16 DUP

Lab Sample ID: 400-163959-10

Date Collected: 12/18/18 12:30

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			407779	12/28/18 09:26	HET	TAL SL
Total/NA	Analysis	9315		1	411406	01/21/19 12:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			407819	12/28/18 10:07	HET	TAL SL
Total/NA	Analysis	9320		1	408962	01/04/19 15:30	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412088	01/24/19 17:31	CDR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
SDG: Gadsden Ash Pond 1192

Client Sample ID: AY28940 EB-1

Lab Sample ID: 400-163959-11

Date Collected: 12/18/18 12:55

Matrix: Water

Date Received: 12/21/18 10:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			407779	12/28/18 09:26	HET	TAL SL
Total/NA	Analysis	9315		1	411406	01/21/19 12:06	CDR	TAL SL
Total/NA	Prep	PrecSep_0			407819	12/28/18 10:07	HET	TAL SL
Total/NA	Analysis	9320		1	408962	01/04/19 15:30	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	412088	01/24/19 17:31	CDR	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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
SDG: Gadsden Ash Pond 1192

Rad

Prep Batch: 407779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163959-7	AY28936 FB-1	Total/NA	Water	PrecSep-21	
400-163959-8	AY28937 MW-17	Total/NA	Water	PrecSep-21	
400-163959-9	AY28938 MW-16	Total/NA	Water	PrecSep-21	
400-163959-10	AY28939 MW-16 DUP	Total/NA	Water	PrecSep-21	
400-163959-11	AY28940 EB-1	Total/NA	Water	PrecSep-21	
MB 160-407779/15-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-407779/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-163959-8 DU	AY28937 MW-17	Total/NA	Water	PrecSep-21	

Prep Batch: 407819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-163959-7	AY28936 FB-1	Total/NA	Water	PrecSep_0	
400-163959-8	AY28937 MW-17	Total/NA	Water	PrecSep_0	
400-163959-9	AY28938 MW-16	Total/NA	Water	PrecSep_0	
400-163959-10	AY28939 MW-16 DUP	Total/NA	Water	PrecSep_0	
400-163959-11	AY28940 EB-1	Total/NA	Water	PrecSep_0	
MB 160-407819/15-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-407819/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-163959-8 DU	AY28937 MW-17	Total/NA	Water	PrecSep_0	
400-163959-B-3-D DU	Duplicate	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-407779/15-A
Matrix: Water
Analysis Batch: 411406

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 407779

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.003359	U	0.0467	0.0467	1.00	0.104	pCi/L	12/28/18 09:26	01/21/19 12:06	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	Limits							
Ba Carrier	96.5		40 - 110		12/28/18 09:26	01/21/19 12:06	1			

Lab Sample ID: LCS 160-407779/1-A
Matrix: Water
Analysis Batch: 411407

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 407779

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	15.1	12.80		1.31	1.00	0.0952	pCi/L	85	68 - 137
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	101		40 - 110						

Lab Sample ID: 400-163959-8 DU
Matrix: Water
Analysis Batch: 411406

Client Sample ID: AY28937 MW-17
Prep Type: Total/NA
Prep Batch: 407779

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.0981	U	0.2422		0.109	1.00	0.120	pCi/L	0.77	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	Limits							
Ba Carrier	95.3		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-407819/15-A
Matrix: Water
Analysis Batch: 408962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 407819

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.2321	U	0.333	0.334	1.00	0.558	pCi/L	12/28/18 10:07	01/04/19 15:30	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	Limits							
Ba Carrier	96.5		40 - 110		12/28/18 10:07	01/04/19 15:30	1			
Y Carrier	%Yield	Qualifier	Limits		Prepared	Analyzed	Dil Fac			
Y Carrier	84.9		40 - 110					12/28/18 10:07	01/04/19 15:30	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

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

Lab Sample ID: LCS 160-407819/1-A
Matrix: Water
Analysis Batch: 408962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 407819

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	12.1	12.37		1.48	1.00	0.548	pCi/L	102	56 - 140
LCS LCS									
Carrier	%Yield	Qualifier	Limits						
Ba Carrier	101		40 - 110						
Y Carrier	80.7		40 - 110						

Lab Sample ID: 400-163959-8 DU
Matrix: Water
Analysis Batch: 408962

Client Sample ID: AY28937 MW-17
Prep Type: Total/NA
Prep Batch: 407819

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.437	U	0.3504	U	0.336	1.00	0.539	pCi/L	0.12	1
DU DU										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	95.3		40 - 110							
Y Carrier	82.6		40 - 110							

Lab Sample ID: 400-163959-B-3-D DU
Matrix: Water
Analysis Batch: 408962

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 407819

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.194	U	0.6746		0.401	1.00	0.602	pCi/L	0.59	1
DU DU										
Carrier	%Yield	Qualifier	Limits							
Ba Carrier	99.4		40 - 110							
Y Carrier	82.2		40 - 110							

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-163959-8 DU
Matrix: Water
Analysis Batch: 412088

Client Sample ID: AY28937 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.535	U	0.5926		0.353	5.00	0.539	pCi/L	0.08	

TestAmerica Pensacola
 3345 McLamore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2871

Chain of Custody Record



Client Information Sampler: Ben Rofschied Client Contact: Laura Midtiff Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-864-6197(Tel) Email: lmidtiff@southernco.com Project #: 40007143 CCR Site: Gadsden Ash Pond 1192		Lab Pk: Whitire, Cheyenne R E-Mail: Cheyenne.whitire@testamericainc.com COC No: 400-58525-24537.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): Routine		Analysis Requested	
Sample Identification AY28936 AY28937 AY28938 AY28939 AY28940	Sample Date 12/18/18 12/18/18 12/18/18 12/18/18 12/18/18	Sample Time (G-grab) 10:45 10:55 12:30 12:30 12:55	Sample Type (C-comp, G-grab) G G G G G
Matrix (Preserv, Sample, On-site, On-site, Acid) Water Water Water Water Water		Preservation Code: N N N D N N N D N N N D N N N D N N N D	
Perform MS/MSD (Yes or No) Y Y Y Y Y		Filed/Filtered Sample (Yes or No) X X X X X	
SM 4500 F.C X X X X X		SM 4500 Cl.E X X X X X	
SM 4500 SO4.E X X X X X		9315, Rn228, 9320, Rn220, Rn226, Rn228, GPC X X X X X	
Special Instructions/Note: Total Number of containers: 2 FB-1 (Field Blank) MW-17 MW-16 MW-16 DUP (Sample Duplicate) EB-1 (Equipment Blank)			
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NiH2SO4 F - MeOH H - Acetic Acid I - Acetic Acid J - DI Water K - EDTA L - EDTA Other: M - Hexane N - None O - AsHClO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 T - H2SO4 U - Hydroxylmethyl V - Acetone W - pH 4.5 X - other (specify)			
Deliverable Requested: <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)			
Empty Kit Relinquished by: Relinquished by: Laura Midtiff Relinquished by: Relinquished by:			
Custody Seals Intact: Δ Yes Δ No			
Special Instructions/QC Requirements: Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Method of Shipment:			
Date/Time: 12/20/2018 07:30 Date/Time:		Date/Time: 12/18/18 1008 Date/Time:	
Company: APC Company:		Company: Company Company:	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-163959-4
SDG Number: Gadsden Ash Pond 1192

Login Number: 163959

List Number: 1

Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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	0.6°C , 10.0°C Rads 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	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-163959-4
SDG Number: Gadsden Ash Pond 1192

Login Number: 163959

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 12/27/18 01:11 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
 SDG: Gadsden Ash Pond 1192

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	01-12-20
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	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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	12-30-19
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	07-31-19

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	12-08-19
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	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	90125	12-31-18 *
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-163959-4
SDG: Gadsden Ash Pond 1192

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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1198
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks, Greg Dyer, & Corey Ladner
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:

Laura Midkiff

Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2019.01.28 16:06:33 -0600

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2019.01.29 11:05:51 -0600



Metals ICP

Gadsden Ash Pond

WMWGADAP_1198

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ00197	635667	WMWGADAP_1198
AZ00198	635667	WMWGADAP_1198
AZ00199	635667	WMWGADAP_1198
AZ00200	635667	WMWGADAP_1198
AZ00201	635667	WMWGADAP_1198

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects.
8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1198

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ00197	635728	WMWGADAP_1198
AZ00198	635728	WMWGADAP_1198
AZ00199	635728	WMWGADAP_1198
AZ00200	635728	WMWGADAP_1198
AZ00201	635728	WMWGADAP_1198

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1198

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ00197	635846	WMWGADAP_1198
AZ00198	635846	WMWGADAP_1198
AZ00199	635846	WMWGADAP_1198
AZ00200	635846	WMWGADAP_1198
AZ00201	635846	WMWGADAP_1198

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1198

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ00197	635845	WMWGADAP_1198
AZ00198	635845	WMWGADAP_1198
AZ00199	635845	WMWGADAP_1198
AZ00200	635845	WMWGADAP_1198
AZ00201	635845	WMWGADAP_1198

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AZ00198
 - AZ00201

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ00197

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	0.176	mg/L
* Beryllium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	1/9/2019	EPA 200.7		2.03	0.02	0.1	J 0.0360	mg/L
* Calcium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.1	0.5	18.5	mg/L
* Cadmium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/11/2019	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.01	0.02	J 0.0137	mg/L
* Molybdenum, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	J 0.00257	mg/L
* Lead, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	1/10/2019	SM 2540C		1		25	167	mg/L
Filter Completion Date	CRB	1/7/2019	SM 2540C		1			01/07/2019	Date

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ00197

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AZ00201	Beryllium, Total	mg/L	0.0000129	0.00132	0.10	0.0952	0.0951	0.0910	0.085 to 0.115	95.2	70 to 130	0.118	20
AZ00201	Mercury, Total by CVAA	mg/L	0.0000518	0.0005	0.004	0.00400	0.00397	0.00402	0.0034 to 0.0046	100	70 to 130	0.695	20
AZ00201	Lithium, Total	mg/L	-0.0000150	0.022	0.20	0.207	0.203	0.203	0.17 to 0.23	103	70 to 130	2.03	20
AZ00201	Arsenic, Total	mg/L	0.0000156	0.0022	0.10	0.0935	0.0955	0.103	0.085 to 0.115	93.5	70 to 130	2.17	20
AZ00201	Selenium, Total	mg/L	-0.0000275	0.0044	0.10	0.0894	0.0916	0.100	0.085 to 0.115	89.4	70 to 130	2.46	20
AZ00201	Antimony, Total	mg/L	0.0000318	0.00176	0.10	0.0807	0.0859	0.0937	0.085 to 0.115	80.7	70 to 130	6.28	20
AZ00201	Boron, Total	mg/L	-0.000218	0.044	1.00	1.01	1.00	0.996	0.85 to 1.15	101	70 to 130	1.11	20
AZ00201	Cadmium, Total	mg/L	0.000000383	0.00066	0.10	0.0899	0.0931	0.101	0.085 to 0.115	89.9	70 to 130	3.49	20
AZ00201	Molybdenum, Total	mg/L	0.0000454	0.0044	0.10	0.103	0.107	0.106	0.085 to 0.115	103	70 to 130	4.47	20
AZ00201	Barium, Total	mg/L	-0.00000131	0.0044	0.10	0.0833	0.0864	0.0931	0.085 to 0.115	83.3	70 to 130	3.71	20
AZ00201	Calcium, Total	mg/L	0.000595	0.22	5.00	5.08	5.01	5.10	4.25 to 5.75	102	70 to 130	1.43	20
AZ00201	Chromium, Total	mg/L	0.0000518	0.0044	0.10	0.0890	0.0909	0.0974	0.085 to 0.115	89.0	70 to 130	2.21	20
AZ00201	Cobalt, Total	mg/L	0.00000185	0.0044	0.10	0.0949	0.0962	0.109	0.085 to 0.115	94.9	70 to 130	1.41	20
AZ00201	Lead, Total	mg/L	0.00000868	0.0022	0.10	0.100	0.101	0.104	0.085 to 0.115	100	70 to 130	0.541	20
AZ00201	Thallium, Total	mg/L	0.00000631	0.00044	0.10	0.106	0.107	0.103	0.085 to 0.115	106	70 to 130	0.722	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ00197

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec			
				Limit			Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ00200	Solids, Dissolved	mg/L	0.0000	25			199	53.0	40 to 60			4.19	5

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ00198

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	1/9/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/11/2019	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	1/10/2019	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	1/7/2019	SM 2540C		1			01/07/2019	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ00198

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AZ00201	Mercury, Total by CVAA	mg/L	0.0000518	0.0005	0.004	0.00400	0.00397	0.00402	0.0034 to 0.0046		100	70 to 130	0.695	20
AZ00201	Beryllium, Total	mg/L	0.0000129	0.00132	0.10	0.0952	0.0951	0.0910	0.085 to 0.115		95.2	70 to 130	0.118	20
AZ00201	Lithium, Total	mg/L	-0.0000150	0.022	0.20	0.207	0.203	0.203	0.17 to 0.23		103	70 to 130	2.03	20
AZ00201	Barium, Total	mg/L	-0.00000131	0.0044	0.10	0.0833	0.0864	0.0931	0.085 to 0.115		83.3	70 to 130	3.71	20
AZ00201	Calcium, Total	mg/L	0.000595	0.22	5.00	5.08	5.01	5.10	4.25 to 5.75		102	70 to 130	1.43	20
AZ00201	Chromium, Total	mg/L	0.0000518	0.0044	0.10	0.0890	0.0909	0.0974	0.085 to 0.115		89.0	70 to 130	2.21	20
AZ00201	Arsenic, Total	mg/L	0.0000156	0.0022	0.10	0.0935	0.0955	0.103	0.085 to 0.115		93.5	70 to 130	2.17	20
AZ00201	Selenium, Total	mg/L	-0.0000275	0.0044	0.10	0.0894	0.0916	0.100	0.085 to 0.115		89.4	70 to 130	2.46	20
AZ00201	Antimony, Total	mg/L	0.0000318	0.00176	0.10	0.0807	0.0859	0.0937	0.085 to 0.115		80.7	70 to 130	6.28	20
AZ00201	Boron, Total	mg/L	-0.000218	0.044	1.00	1.01	1.00	0.996	0.85 to 1.15		101	70 to 130	1.11	20
AZ00201	Cobalt, Total	mg/L	0.00000185	0.0044	0.10	0.0949	0.0962	0.109	0.085 to 0.115		94.9	70 to 130	1.41	20
AZ00201	Lead, Total	mg/L	0.00000868	0.0022	0.10	0.100	0.101	0.104	0.085 to 0.115		100	70 to 130	0.541	20
AZ00201	Thallium, Total	mg/L	0.00000631	0.00044	0.10	0.106	0.107	0.103	0.085 to 0.115		106	70 to 130	0.722	20
AZ00201	Cadmium, Total	mg/L	0.000000383	0.00066	0.10	0.0899	0.0931	0.101	0.085 to 0.115		89.9	70 to 130	3.49	20
AZ00201	Molybdenum, Total	mg/L	0.0000454	0.0044	0.10	0.103	0.107	0.106	0.085 to 0.115		103	70 to 130	4.47	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ00198

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AZ00200	Solids, Dissolved	mg/L	0.0000	25			199	53.0	40 to 60			4.19	5

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ00199

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	J	0.00175	mg/L
* Barium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01		0.0426	mg/L
* Beryllium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0006	0.003	J	0.000677	mg/L
* Boron, Total	GAS	1/9/2019	EPA 200.7		2.03	0.02	0.1	J	0.0209	mg/L
* Calcium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.1	0.5		19.7	mg/L
* Cadmium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0003	0.001	J	0.000703	mg/L
* Antimony, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.005		0.0380	mg/L
* Chromium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/11/2019	EPA 245.1		1	0.00025	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	J	0.00100	mg/L
* Selenium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	J	0.00488	mg/L
* Thallium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	1/10/2019	SM 2540C		1		25		191	mg/L
Filter Completion Date	CRB	1/7/2019	SM 2540C		1				01/07/2019	Date

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ00199

Sample	Analysis	Units	MB	MB			MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike	MS				Limit	Rec	Limit	Prec		
AZ00201	Beryllium, Total	mg/L	0.0000129	0.00132	0.10	0.0952	0.0951	0.0910	0.085 to 0.115	95.2	70 to 130	0.118	20		
AZ00201	Mercury, Total by CVAA	mg/L	0.0000518	0.0005	0.004	0.00400	0.00397	0.00402	0.0034 to 0.0046	100	70 to 130	0.695	20		
AZ00201	Cadmium, Total	mg/L	0.000000383	0.00066	0.10	0.0899	0.0931	0.101	0.085 to 0.115	89.9	70 to 130	3.49	20		
AZ00201	Molybdenum, Total	mg/L	0.0000454	0.0044	0.10	0.103	0.107	0.106	0.085 to 0.115	103	70 to 130	4.47	20		
AZ00201	Arsenic, Total	mg/L	0.0000156	0.0022	0.10	0.0935	0.0955	0.103	0.085 to 0.115	93.5	70 to 130	2.17	20		
AZ00201	Selenium, Total	mg/L	-0.0000275	0.0044	0.10	0.0894	0.0916	0.100	0.085 to 0.115	89.4	70 to 130	2.46	20		
AZ00201	Lithium, Total	mg/L	-0.0000150	0.022	0.20	0.207	0.203	0.203	0.17 to 0.23	103	70 to 130	2.03	20		
AZ00201	Antimony, Total	mg/L	0.0000318	0.00176	0.10	0.0807	0.0859	0.0937	0.085 to 0.115	80.7	70 to 130	6.28	20		
AZ00201	Boron, Total	mg/L	-0.000218	0.044	1.00	1.01	1.00	0.996	0.85 to 1.15	101	70 to 130	1.11	20		
AZ00201	Cobalt, Total	mg/L	0.00000185	0.0044	0.10	0.0949	0.0962	0.109	0.085 to 0.115	94.9	70 to 130	1.41	20		
AZ00201	Lead, Total	mg/L	0.00000868	0.0022	0.10	0.100	0.101	0.104	0.085 to 0.115	100	70 to 130	0.541	20		
AZ00201	Thallium, Total	mg/L	0.00000631	0.00044	0.10	0.106	0.107	0.103	0.085 to 0.115	106	70 to 130	0.722	20		
AZ00201	Barium, Total	mg/L	-0.00000131	0.0044	0.10	0.0833	0.0864	0.0931	0.085 to 0.115	83.3	70 to 130	3.71	20		
AZ00201	Calcium, Total	mg/L	0.000595	0.22	5.00	5.08	5.01	5.10	4.25 to 5.75	102	70 to 130	1.43	20		
AZ00201	Chromium, Total	mg/L	0.0000518	0.0044	0.10	0.0890	0.0909	0.0974	0.085 to 0.115	89.0	70 to 130	2.21	20		

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ00199

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AZ00200	Solids, Dissolved	mg/L	0.0000	25			199	53.0	40 to 60			4.19	5

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Expiration: June 30, 2019

Comments:

CC:

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 Calera, AL 35040
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 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AZ00200

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	J 0.00173	mg/L
* Barium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	0.0434	mg/L
* Beryllium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	1/9/2019	EPA 200.7		2.03	0.02	0.1	J 0.0202	mg/L
* Calcium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.1	0.5	19.9	mg/L
* Cadmium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0003	0.001	J 0.000679	mg/L
* Antimony, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.005	0.0385	mg/L
* Chromium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/11/2019	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	J 0.00497	mg/L
* Thallium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	1/10/2019	SM 2540C		1		25	183	mg/L
Filter Completion Date	CRB	1/7/2019	SM 2540C		1			01/07/2019	Date

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Laboratory certification ID: E571114

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Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AZ00200

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AZ00201	Mercury, Total by CVAA	mg/L	0.0000518	0.0005	0.004	0.00400	0.00397	0.00402	0.0034 to 0.0046		100	70 to 130	0.695	20
AZ00201	Lithium, Total	mg/L	-0.0000150	0.022	0.20	0.207	0.203	0.203	0.17 to 0.23		103	70 to 130	2.03	20
AZ00201	Beryllium, Total	mg/L	0.0000129	0.00132	0.10	0.0952	0.0951	0.0910	0.085 to 0.115		95.2	70 to 130	0.118	20
AZ00201	Antimony, Total	mg/L	0.0000318	0.00176	0.10	0.0807	0.0859	0.0937	0.085 to 0.115		80.7	70 to 130	6.28	20
AZ00201	Boron, Total	mg/L	-0.000218	0.044	1.00	1.01	1.00	0.996	0.85 to 1.15		101	70 to 130	1.11	20
AZ00201	Cadmium, Total	mg/L	0.000000383	0.00066	0.10	0.0899	0.0931	0.101	0.085 to 0.115		89.9	70 to 130	3.49	20
AZ00201	Molybdenum, Total	mg/L	0.0000454	0.0044	0.10	0.103	0.107	0.106	0.085 to 0.115		103	70 to 130	4.47	20
AZ00201	Arsenic, Total	mg/L	0.0000156	0.0022	0.10	0.0935	0.0955	0.103	0.085 to 0.115		93.5	70 to 130	2.17	20
AZ00201	Selenium, Total	mg/L	-0.0000275	0.0044	0.10	0.0894	0.0916	0.100	0.085 to 0.115		89.4	70 to 130	2.46	20
AZ00201	Barium, Total	mg/L	-0.00000131	0.0044	0.10	0.0833	0.0864	0.0931	0.085 to 0.115		83.3	70 to 130	3.71	20
AZ00201	Calcium, Total	mg/L	0.000595	0.22	5.00	5.08	5.01	5.10	4.25 to 5.75		102	70 to 130	1.43	20
AZ00201	Chromium, Total	mg/L	0.0000518	0.0044	0.10	0.0890	0.0909	0.0974	0.085 to 0.115		89.0	70 to 130	2.21	20
AZ00201	Cobalt, Total	mg/L	0.00000185	0.0044	0.10	0.0949	0.0962	0.109	0.085 to 0.115		94.9	70 to 130	1.41	20
AZ00201	Lead, Total	mg/L	0.00000868	0.0022	0.10	0.100	0.101	0.104	0.085 to 0.115		100	70 to 130	0.541	20
AZ00201	Thallium, Total	mg/L	0.00000631	0.00044	0.10	0.106	0.107	0.103	0.085 to 0.115		106	70 to 130	0.722	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond - MW-16 DUP

Laboratory ID Number: AZ00200

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	Rec	Prec		
			Limit	Limit			Duplicate	LCS	Limit	Limit	Prec	Limit
AZ00200	Solids, Dissolved	mg/L	0.0000	25			199	53.0	40 to 60		4.19	5

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Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ00201

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Beryllium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	1/9/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
* Cadmium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/11/2019	EPA 245.1		1	0.00025	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	1/9/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	1/9/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	1/10/2019	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	1/7/2019	SM 2540C		1			01/07/2019	Date

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Comments:

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 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ00201

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Limit	
			MB	Limit					Rec	Limit			
AZ00201	Mercury, Total by CVAA	mg/L	0.0000518	0.0005	0.004	0.00400	0.00397	0.00402	0.0034 to 0.0046	100	70 to 130	0.695	20
AZ00201	Lithium, Total	mg/L	-0.0000150	0.022	0.20	0.207	0.203	0.203	0.17 to 0.23	103	70 to 130	2.03	20
AZ00201	Arsenic, Total	mg/L	0.0000156	0.0022	0.10	0.0935	0.0955	0.103	0.085 to 0.115	93.5	70 to 130	2.17	20
AZ00201	Selenium, Total	mg/L	-0.0000275	0.0044	0.10	0.0894	0.0916	0.100	0.085 to 0.115	89.4	70 to 130	2.46	20
AZ00201	Antimony, Total	mg/L	0.0000318	0.00176	0.10	0.0807	0.0859	0.0937	0.085 to 0.115	80.7	70 to 130	6.28	20
AZ00201	Boron, Total	mg/L	-0.000218	0.044	1.00	1.01	1.00	0.996	0.85 to 1.15	101	70 to 130	1.11	20
AZ00201	Beryllium, Total	mg/L	0.0000129	0.00132	0.10	0.0952	0.0951	0.0910	0.085 to 0.115	95.2	70 to 130	0.118	20
AZ00201	Cadmium, Total	mg/L	0.00000383	0.00066	0.10	0.0899	0.0931	0.101	0.085 to 0.115	89.9	70 to 130	3.49	20
AZ00201	Molybdenum, Total	mg/L	0.0000454	0.0044	0.10	0.103	0.107	0.106	0.085 to 0.115	103	70 to 130	4.47	20
AZ00201	Cobalt, Total	mg/L	0.00000185	0.0044	0.10	0.0949	0.0962	0.109	0.085 to 0.115	94.9	70 to 130	1.41	20
AZ00201	Lead, Total	mg/L	0.00000868	0.0022	0.10	0.100	0.101	0.104	0.085 to 0.115	100	70 to 130	0.541	20
AZ00201	Thallium, Total	mg/L	0.00000631	0.00044	0.10	0.106	0.107	0.103	0.085 to 0.115	106	70 to 130	0.722	20
AZ00201	Barium, Total	mg/L	-0.00000131	0.0044	0.10	0.0833	0.0864	0.0931	0.085 to 0.115	83.3	70 to 130	3.71	20
AZ00201	Calcium, Total	mg/L	0.000595	0.22	5.00	5.08	5.01	5.10	4.25 to 5.75	102	70 to 130	1.43	20
AZ00201	Chromium, Total	mg/L	0.0000518	0.0044	0.10	0.0890	0.0909	0.0974	0.085 to 0.115	89.0	70 to 130	2.21	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 03-Jan-19
 Customer ID:
 Delivery Date: 03-Jan-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ00201

Sample	Analysis	Units	MB	MB	Spike	LFM	Sample	LCS	LCS	Rec	Prec	Prec	
				Limit			Duplicate	LCS	Limit	Rec	Limit	Limit	
AZ00200	Solids, Dissolved	mg/L	0.0000	25			199	53.0	40 to 60			4.19	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
E	Estimated reported value exceeded calibration range.
J	Reported value is an estimate because concentration is less than reporting limit.
N	Organic constituents tentatively identified. Confirmation is needed.
R	Matrix spike recovery is out of range.
U	Compound was analyzed, but not detected.
P	Precision is out of range.
C	Analyte was verified by re-analysis.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
L	Check standard is outside of the required specification limit.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
F	Water Field Group (WFG) qualifier; see comments for more information

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: 400-164539-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1198

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

1/16/2019 6:01:53 PM

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@testamericainc.com

LINKS

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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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
SDG: Gadsden Ash Pond 1198

Job ID: 400-164539-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative
400-164539-1

General Chemistry

Method(s) SM 4500 SO4 E: The following samples were diluted to bring the concentration of target analytes within the calibration range: AZ00204 MW-16 (400-164539-3) and AZ00205 MW-16 DUP (400-164539-4). Elevated reporting limits (RLs) are provided.

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Detection Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00202 MW-17

Lab Sample ID: 400-164539-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.2		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.19		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	10		5.0	1.4	mg/L	1		SM 4500 SO4 E	Total/NA

Client Sample ID: AZ00203 FB-1

Lab Sample ID: 400-164539-2

No Detections.

Client Sample ID: AZ00204 MW-16

Lab Sample ID: 400-164539-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.4		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.16		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	94		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AZ00205 MW-16 DUP

Lab Sample ID: 400-164539-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	3.6		2.0	1.4	mg/L	1		SM 4500 Cl- E	Total/NA
Fluoride	0.17		0.10	0.032	mg/L	1		SM 4500 F C	Total/NA
Sulfate	94		50	14	mg/L	10		SM 4500 SO4 E	Total/NA

Client Sample ID: AZ00206 EB-1

Lab Sample ID: 400-164539-5

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pensacola

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
SDG: Gadsden Ash Pond 1198

Method	Method Description	Protocol	Laboratory
SM 4500 Cl- E	Chloride, Total	SM	TAL PEN
SM 4500 F C	Fluoride	SM	TAL PEN
SM 4500 SO4 E	Sulfate, Total	SM	TAL PEN

Protocol References:

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

Laboratory References:

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

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Sample Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
SDG: Gadsden Ash Pond 1198

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-164539-1	AZ00202 MW-17	Water	01/03/19 10:07	01/09/19 08:48
400-164539-2	AZ00203 FB-1	Water	01/03/19 10:30	01/09/19 08:48
400-164539-3	AZ00204 MW-16	Water	01/03/19 11:51	01/09/19 08:48
400-164539-4	AZ00205 MW-16 DUP	Water	01/03/19 11:51	01/09/19 08:48
400-164539-5	AZ00206 EB-1	Water	01/03/19 12:15	01/09/19 08:48

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
 SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00202 MW-17

Lab Sample ID: 400-164539-1

Date Collected: 01/03/19 10:07

Matrix: Water

Date Received: 01/09/19 08:48

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.2		2.0	1.4	mg/L			01/11/19 07:10	1
Fluoride	0.19		0.10	0.032	mg/L			01/14/19 11:27	1
Sulfate	10		5.0	1.4	mg/L			01/11/19 10:10	1

Client Sample ID: AZ00203 FB-1

Lab Sample ID: 400-164539-2

Date Collected: 01/03/19 10:30

Matrix: Water

Date Received: 01/09/19 08:48

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			01/11/19 07:19	1
Fluoride	<0.032		0.10	0.032	mg/L			01/14/19 11:38	1
Sulfate	<1.4		5.0	1.4	mg/L			01/11/19 10:16	1

Client Sample ID: AZ00204 MW-16

Lab Sample ID: 400-164539-3

Date Collected: 01/03/19 11:51

Matrix: Water

Date Received: 01/09/19 08:48

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.4		2.0	1.4	mg/L			01/11/19 07:20	1
Fluoride	0.16		0.10	0.032	mg/L			01/14/19 11:42	1
Sulfate	94		50	14	mg/L			01/11/19 10:34	10

Client Sample ID: AZ00205 MW-16 DUP

Lab Sample ID: 400-164539-4

Date Collected: 01/03/19 11:51

Matrix: Water

Date Received: 01/09/19 08:48

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	3.6		2.0	1.4	mg/L			01/11/19 07:20	1
Fluoride	0.17		0.10	0.032	mg/L			01/14/19 11:46	1
Sulfate	94		50	14	mg/L			01/11/19 10:34	10

Client Sample ID: AZ00206 EB-1

Lab Sample ID: 400-164539-5

Date Collected: 01/03/19 12:15

Matrix: Water

Date Received: 01/09/19 08:48

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			01/11/19 07:20	1
Fluoride	<0.032		0.10	0.032	mg/L			01/14/19 11:50	1
Sulfate	<1.4		5.0	1.4	mg/L			01/11/19 10:16	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
SDG: Gadsden Ash Pond 1198

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00202 MW-17

Date Collected: 01/03/19 10:07

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	426167	01/11/19 07:10	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	426416	01/14/19 11:27	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	426194	01/11/19 10:10	RRC	TAL PEN

Client Sample ID: AZ00203 FB-1

Date Collected: 01/03/19 10:30

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	426167	01/11/19 07:19	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	426416	01/14/19 11:38	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	426194	01/11/19 10:16	RRC	TAL PEN

Client Sample ID: AZ00204 MW-16

Date Collected: 01/03/19 11:51

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	426167	01/11/19 07:20	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	426416	01/14/19 11:42	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	426194	01/11/19 10:34	RRC	TAL PEN

Client Sample ID: AZ00205 MW-16 DUP

Date Collected: 01/03/19 11:51

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	426167	01/11/19 07:20	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	426416	01/14/19 11:46	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		10	426194	01/11/19 10:34	RRC	TAL PEN

Client Sample ID: AZ00206 EB-1

Date Collected: 01/03/19 12:15

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 4500 Cl- E		1	426167	01/11/19 07:20	RRC	TAL PEN
Total/NA	Analysis	SM 4500 F C		1	426416	01/14/19 11:50	BAB	TAL PEN
Total/NA	Analysis	SM 4500 SO4 E		1	426194	01/11/19 10:16	RRC	TAL PEN

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
SDG: Gadsden Ash Pond 1198

Laboratory References:

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

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QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
SDG: Gadsden Ash Pond 1198

General Chemistry

Analysis Batch: 426167

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-164539-1	AZ00202 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-164539-2	AZ00203 FB-1	Total/NA	Water	SM 4500 Cl- E	
400-164539-3	AZ00204 MW-16	Total/NA	Water	SM 4500 Cl- E	
400-164539-4	AZ00205 MW-16 DUP	Total/NA	Water	SM 4500 Cl- E	
400-164539-5	AZ00206 EB-1	Total/NA	Water	SM 4500 Cl- E	
MB 400-426167/6	Method Blank	Total/NA	Water	SM 4500 Cl- E	
LCS 400-426167/7	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
MRL 400-426167/3	Lab Control Sample	Total/NA	Water	SM 4500 Cl- E	
400-164539-1 MS	AZ00202 MW-17	Total/NA	Water	SM 4500 Cl- E	
400-164539-1 MSD	AZ00202 MW-17	Total/NA	Water	SM 4500 Cl- E	

Analysis Batch: 426194

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-164539-1	AZ00202 MW-17	Total/NA	Water	SM 4500 SO4 E	
400-164539-2	AZ00203 FB-1	Total/NA	Water	SM 4500 SO4 E	
400-164539-3	AZ00204 MW-16	Total/NA	Water	SM 4500 SO4 E	
400-164539-4	AZ00205 MW-16 DUP	Total/NA	Water	SM 4500 SO4 E	
400-164539-5	AZ00206 EB-1	Total/NA	Water	SM 4500 SO4 E	
MB 400-426194/6	Method Blank	Total/NA	Water	SM 4500 SO4 E	
LCS 400-426194/7	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
MRL 400-426194/3	Lab Control Sample	Total/NA	Water	SM 4500 SO4 E	
400-164539-1 MS	AZ00202 MW-17	Total/NA	Water	SM 4500 SO4 E	
400-164539-1 MSD	AZ00202 MW-17	Total/NA	Water	SM 4500 SO4 E	

Analysis Batch: 426416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-164539-1	AZ00202 MW-17	Total/NA	Water	SM 4500 F C	
400-164539-2	AZ00203 FB-1	Total/NA	Water	SM 4500 F C	
400-164539-3	AZ00204 MW-16	Total/NA	Water	SM 4500 F C	
400-164539-4	AZ00205 MW-16 DUP	Total/NA	Water	SM 4500 F C	
400-164539-5	AZ00206 EB-1	Total/NA	Water	SM 4500 F C	
MB 400-426416/3	Method Blank	Total/NA	Water	SM 4500 F C	
LCS 400-426416/4	Lab Control Sample	Total/NA	Water	SM 4500 F C	
400-164539-1 MS	AZ00202 MW-17	Total/NA	Water	SM 4500 F C	
400-164539-1 MSD	AZ00202 MW-17	Total/NA	Water	SM 4500 F C	
400-164639-A-2 DU	Duplicate	Total/NA	Water	SM 4500 F C	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
 SDG: Gadsden Ash Pond 1198

Method: SM 4500 Cl- E - Chloride, Total

Lab Sample ID: MB 400-426167/6
Matrix: Water
Analysis Batch: 426167

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.4		2.0	1.4	mg/L			01/11/19 07:09	1

Lab Sample ID: LCS 400-426167/7
Matrix: Water
Analysis Batch: 426167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	30.0	31.6		mg/L		105	90 - 110

Lab Sample ID: MRL 400-426167/3
Matrix: Water
Analysis Batch: 426167

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	2.00	2.24		mg/L		112	50 - 150

Lab Sample ID: 400-164539-1 MS
Matrix: Water
Analysis Batch: 426167

Client Sample ID: AZ00202 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	3.2		10.0	14.6		mg/L		114	73 - 120

Lab Sample ID: 400-164539-1 MSD
Matrix: Water
Analysis Batch: 426167

Client Sample ID: AZ00202 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	3.2		10.0	14.5		mg/L		113	73 - 120	1	8

Method: SM 4500 F C - Fluoride

Lab Sample ID: MB 400-426416/3
Matrix: Water
Analysis Batch: 426416

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<0.032		0.10	0.032	mg/L			01/14/19 11:06	1

Lab Sample ID: LCS 400-426416/4
Matrix: Water
Analysis Batch: 426416

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	4.00	3.91		mg/L		98	90 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
 SDG: Gadsden Ash Pond 1198

Method: SM 4500 F C - Fluoride (Continued)

Lab Sample ID: 400-164539-1 MS
Matrix: Water
Analysis Batch: 426416

Client Sample ID: AZ00202 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Fluoride	0.19		1.00	1.23		mg/L		104	75 - 125

Lab Sample ID: 400-164539-1 MSD
Matrix: Water
Analysis Batch: 426416

Client Sample ID: AZ00202 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Fluoride	0.19		1.00	1.25		mg/L		106	75 - 125	2	4

Lab Sample ID: 400-164639-A-2 DU
Matrix: Water
Analysis Batch: 426416

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Fluoride	0.76		0.760		mg/L		0	4

Method: SM 4500 SO4 E - Sulfate, Total

Lab Sample ID: MB 400-426194/6
Matrix: Water
Analysis Batch: 426194

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.4		5.0	1.4	mg/L			01/11/19 10:09	1

Lab Sample ID: LCS 400-426194/7
Matrix: Water
Analysis Batch: 426194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	15.0	13.8		mg/L		92	90 - 110

Lab Sample ID: MRL 400-426194/3
Matrix: Water
Analysis Batch: 426194

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.00	4.38	J	mg/L		88	50 - 150

Lab Sample ID: 400-164539-1 MS
Matrix: Water
Analysis Batch: 426194

Client Sample ID: AZ00202 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10		10.0	19.1		mg/L		91	77 - 128

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
 SDG: Gadsden Ash Pond 1198

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

Lab Sample ID: 400-164539-1 MSD
 Matrix: Water
 Analysis Batch: 426194

Client Sample ID: AZ00202 MW-17
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10		10.0	19.1		mg/L		91	77 - 128	0	5

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Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-164539-1
SDG Number: Gadsden Ash Pond 1198

Login Number: 164539
List Number: 1
Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	1.2°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 <math><6\text{mm}</math> (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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-1
 SDG: Gadsden Ash Pond 1198

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	01-12-20
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	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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	12-30-19
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

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: 400-164539-2

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1198

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

2/7/2019 4:37:40 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
SDG: Gadsden Ash Pond 1198

Job ID: 400-164539-2

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-164539-2

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-410591: The following samples were prepared at a reduced aliquot: AZ00202 MW-17 (400-164539-1), AZ00202 MW-17 (400-164539-1[DU]), AZ00203 FB-1 (400-164539-2), AZ00204 MW-16 (400-164539-3), AZ00205 MW-16 DUP (400-164539-4) and AZ00206 EB-1 (400-164539-5). Samples 400-164539-1, 400-164539-1[DU], 400-164539-2, 400-164539-3, 400-164539-4, and 400-164539-5 were reduced due to limited sample volume available. Sample 440-227663-1 was reduced due to yellow discoloration and sediment.

Method(s) PrecSep-21: Radium 226 Prep Batch 160-410588: The following samples were prepared at a reduced aliquot: AZ00202 MW-17 (400-164539-1), AZ00202 MW-17 (400-164539-1[DU]), AZ00203 FB-1 (400-164539-2), AZ00204 MW-16 (400-164539-3), AZ00205 MW-16 DUP (400-164539-4) and AZ00206 EB-1 (400-164539-5). Samples 400-164539-1, 400-164539-1[DU], 400-164539-2, 400-164539-3, 400-164539-4, and 400-164539-5 were reduced due to limited sample volume available. Sample 440-227663-1 was reduced due to yellow discoloration and sediment.



Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
SDG: Gadsden Ash Pond 1198

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
SDG: Gadsden Ash Pond 1198

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-164539-1	AZ00202 MW-17	Water	01/03/19 10:07	01/09/19 08:48
400-164539-2	AZ00203 FB-1	Water	01/03/19 10:30	01/09/19 08:48
400-164539-3	AZ00204 MW-16	Water	01/03/19 11:51	01/09/19 08:48
400-164539-4	AZ00205 MW-16 DUP	Water	01/03/19 11:51	01/09/19 08:48
400-164539-5	AZ00206 EB-1	Water	01/03/19 12:15	01/09/19 08:48

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Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
 SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00202 MW-17

Lab Sample ID: 400-164539-1

Date Collected: 01/03/19 10:07

Matrix: Water

Date Received: 01/09/19 08:48

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.253		0.110	0.113	1.00	0.120	pCi/L	01/15/19 09:56	02/06/19 06:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					01/15/19 09:56	02/06/19 06:53	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.387	U	0.298	0.300	1.00	0.469	pCi/L	01/15/19 10:32	01/22/19 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	98.8		40 - 110					01/15/19 10:32	01/22/19 10:28	1
Y Carrier	80.4		40 - 110					01/15/19 10:32	01/22/19 10:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.640		0.318	0.321	5.00	0.469	pCi/L		02/06/19 16:28	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
 SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00203 FB-1

Lab Sample ID: 400-164539-2

Date Collected: 01/03/19 10:30

Matrix: Water

Date Received: 01/09/19 08:48

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00436	U	0.0450	0.0450	1.00	0.103	pCi/L	01/15/19 09:56	02/06/19 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110					01/15/19 09:56	02/06/19 08:16	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0285	U	0.242	0.242	1.00	0.431	pCi/L	01/15/19 10:32	01/22/19 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.7		40 - 110					01/15/19 10:32	01/22/19 10:28	1
Y Carrier	87.5		40 - 110					01/15/19 10:32	01/22/19 10:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0241	U	0.246	0.246	5.00	0.431	pCi/L		02/06/19 16:28	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
 SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00204 MW-16

Lab Sample ID: 400-164539-3

Date Collected: 01/03/19 11:51

Matrix: Water

Date Received: 01/09/19 08:48

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.158		0.0833	0.0845	1.00	0.0871	pCi/L	01/15/19 09:56	02/06/19 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					01/15/19 09:56	02/06/19 08:16	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.686		0.300	0.306	1.00	0.417	pCi/L	01/15/19 10:32	01/22/19 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					01/15/19 10:32	01/22/19 10:28	1
Y Carrier	79.6		40 - 110					01/15/19 10:32	01/22/19 10:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.844		0.311	0.317	5.00	0.417	pCi/L		02/06/19 16:28	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
 SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00205 MW-16 DUP

Lab Sample ID: 400-164539-4

Date Collected: 01/03/19 11:51

Matrix: Water

Date Received: 01/09/19 08:48

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.211		0.0950	0.0969	1.00	0.0967	pCi/L	01/15/19 09:56	02/06/19 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					01/15/19 09:56	02/06/19 08:16	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.927		0.301	0.313	1.00	0.386	pCi/L	01/15/19 10:32	01/22/19 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					01/15/19 10:32	01/22/19 10:28	1
Y Carrier	83.7		40 - 110					01/15/19 10:32	01/22/19 10:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.14		0.316	0.328	5.00	0.386	pCi/L		02/06/19 16:28	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
 SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00206 EB-1

Lab Sample ID: 400-164539-5

Date Collected: 01/03/19 12:15

Matrix: Water

Date Received: 01/09/19 08:48

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0425	U	0.0417	0.0419	1.00	0.118	pCi/L	01/15/19 09:56	02/06/19 08:16	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					01/15/19 09:56	02/06/19 08:16	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.561		0.311	0.315	1.00	0.465	pCi/L	01/15/19 10:32	01/22/19 10:28	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					01/15/19 10:32	01/22/19 10:28	1
Y Carrier	80.7		40 - 110					01/15/19 10:32	01/22/19 10:28	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.518		0.314	0.318	5.00	0.465	pCi/L		02/06/19 16:28	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
SDG: Gadsden Ash Pond 1198

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00202 MW-17

Date Collected: 01/03/19 10:07

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			410588	01/15/19 09:56	CLP	TAL SL
Total/NA	Analysis	9315		1	413825	02/06/19 06:53	KLS	TAL SL
Total/NA	Prep	PrecSep_0			410591	01/15/19 10:32	CLP	TAL SL
Total/NA	Analysis	9320		1	411717	01/22/19 10:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	413861	02/06/19 16:28	CDR	TAL SL

Client Sample ID: AZ00203 FB-1

Date Collected: 01/03/19 10:30

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			410588	01/15/19 09:56	CLP	TAL SL
Total/NA	Analysis	9315		1	413801	02/06/19 08:16	KLS	TAL SL
Total/NA	Prep	PrecSep_0			410591	01/15/19 10:32	CLP	TAL SL
Total/NA	Analysis	9320		1	411717	01/22/19 10:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	413861	02/06/19 16:28	CDR	TAL SL

Client Sample ID: AZ00204 MW-16

Date Collected: 01/03/19 11:51

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			410588	01/15/19 09:56	CLP	TAL SL
Total/NA	Analysis	9315		1	413801	02/06/19 08:16	KLS	TAL SL
Total/NA	Prep	PrecSep_0			410591	01/15/19 10:32	CLP	TAL SL
Total/NA	Analysis	9320		1	411717	01/22/19 10:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	413861	02/06/19 16:28	CDR	TAL SL

Client Sample ID: AZ00205 MW-16 DUP

Date Collected: 01/03/19 11:51

Date Received: 01/09/19 08:48

Lab Sample ID: 400-164539-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			410588	01/15/19 09:56	CLP	TAL SL
Total/NA	Analysis	9315		1	413801	02/06/19 08:16	KLS	TAL SL
Total/NA	Prep	PrecSep_0			410591	01/15/19 10:32	CLP	TAL SL
Total/NA	Analysis	9320		1	411717	01/22/19 10:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	413861	02/06/19 16:28	CDR	TAL SL

TestAmerica Pensacola

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
SDG: Gadsden Ash Pond 1198

Client Sample ID: AZ00206 EB-1

Lab Sample ID: 400-164539-5

Date Collected: 01/03/19 12:15

Matrix: Water

Date Received: 01/09/19 08:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			410588	01/15/19 09:56	CLP	TAL SL
Total/NA	Analysis	9315		1	413801	02/06/19 08:16	KLS	TAL SL
Total/NA	Prep	PrecSep_0			410591	01/15/19 10:32	CLP	TAL SL
Total/NA	Analysis	9320		1	411717	01/22/19 10:28	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	413861	02/06/19 16:28	CDR	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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
SDG: Gadsden Ash Pond 1198

Rad

Prep Batch: 410588

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-164539-1	AZ00202 MW-17	Total/NA	Water	PrecSep-21	
400-164539-2	AZ00203 FB-1	Total/NA	Water	PrecSep-21	
400-164539-3	AZ00204 MW-16	Total/NA	Water	PrecSep-21	
400-164539-4	AZ00205 MW-16 DUP	Total/NA	Water	PrecSep-21	
400-164539-5	AZ00206 EB-1	Total/NA	Water	PrecSep-21	
MB 160-410588/15-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-410588/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-164539-1 DU	AZ00202 MW-17	Total/NA	Water	PrecSep-21	

Prep Batch: 410591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-164539-1	AZ00202 MW-17	Total/NA	Water	PrecSep_0	
400-164539-2	AZ00203 FB-1	Total/NA	Water	PrecSep_0	
400-164539-3	AZ00204 MW-16	Total/NA	Water	PrecSep_0	
400-164539-4	AZ00205 MW-16 DUP	Total/NA	Water	PrecSep_0	
400-164539-5	AZ00206 EB-1	Total/NA	Water	PrecSep_0	
MB 160-410591/15-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-410591/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-164539-1 DU	AZ00202 MW-17	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
 SDG: Gadsden Ash Pond 1198

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-410588/15-A
Matrix: Water
Analysis Batch: 413801

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 410588

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.08368	U	0.0606	0.0611	1.00	0.0854	pCi/L	01/15/19 09:56	02/06/19 08:16	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					01/15/19 09:56	02/06/19 08:16	1

Lab Sample ID: LCS 160-410588/1-A
Matrix: Water
Analysis Batch: 413825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 410588

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-226	11.4	12.73		1.28	1.00	0.0837	pCi/L	112	68 - 137
Carrier	LCS %Yield	LCS Qualifier	Limits						
Ba Carrier	99.7		40 - 110						

Lab Sample ID: 400-164539-1 DU
Matrix: Water
Analysis Batch: 413825

Client Sample ID: AZ00202 MW-17
Prep Type: Total/NA
Prep Batch: 410588

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.253		0.2738		0.113	1.00	0.113	pCi/L	0.09	1
Carrier	DU %Yield	DU Qualifier	Limits							
Ba Carrier	103		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-410591/15-A
Matrix: Water
Analysis Batch: 411717

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 410591

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.3283		0.211	0.213	1.00	0.323	pCi/L	01/15/19 10:32	01/22/19 10:29	1
Carrier	MB %Yield	MB Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					01/15/19 10:32	01/22/19 10:29	1
Y Carrier	83.0		40 - 110					01/15/19 10:32	01/22/19 10:29	1

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
 SDG: Gadsden Ash Pond 1198

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

Lab Sample ID: LCS 160-410591/1-A
Matrix: Water
Analysis Batch: 411717

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 410591

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.56	10.33		1.17	1.00	0.346	pCi/L	108	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	99.7		40 - 110
Y Carrier	76.6		40 - 110

Lab Sample ID: 400-164539-1 DU
Matrix: Water
Analysis Batch: 411717

Client Sample ID: AZ00202 MW-17
Prep Type: Total/NA
Prep Batch: 410591

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.387	U	0.4487		0.283	1.00	0.427	pCi/L	0.11	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	103		40 - 110
Y Carrier	87.1		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-164539-1 DU
Matrix: Water
Analysis Batch: 413861

Client Sample ID: AZ00202 MW-17
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.640		0.7224		0.305	5.00	0.427	pCi/L	0.13	

TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Ben Rotfischadl Laura Midkiff Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-5197(Tel) Email: lbmidkiff@southernco.com Project Name: 40007143 CCR Site: Gadsden Ash Pond 1198		Sampler: Whitmire, Chelyenne R Lab PM: Whitmire, Chelyenne R E-Mail: chelyenne.whitmire@testamericainc.com		Carrier Tracking Note: COC No: 400-56525-24537.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): Routine		Analysis Requested  400-164539 COC			
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Acetic Acid H - Acetic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		M - Hexane N - None O - AsNaO2 P - Na2CO3 Q - Na2SO3 R - Na2S2O3 S - H2O T - TSP U - Acetone V - NCA W - pH 4.5 Z - other (specify)			
Sample Identification AZ00202 AZ00203 AZ00204 AZ00205 AZ00206		Sample Date 1/3/19 1/3/19 1/3/19 1/3/19 1/3/19		Sample Time 10:07 10:30 11:51 11:51 12:15	
Sample Type (C=Comp, G=grab) G G G G G		Matrix (Invert, Sealed, Open, Blank, etc.) Water Water Water Water Water		Field Filtered Sample (Yes or No) X X X X X	
Pattern MS/MSD (Yes or No) X X X X X		SM 4500 F C SM 4500 Cl E SM 4500 SO4 E		9315_Ra226_9320_Ra228_Ra228Ra228_GFP	
Total Number of Containers 4 2 2 2 2		MW-17 FB-1 (Field Blank) MW-16 MW-16 DUF (Sample Duplicate) EB-1 (Equipment Blank)		Special Instructions/Note: MW-17 FB-1 (Field Blank) MW-16 MW-16 DUF (Sample Duplicate) EB-1 (Equipment Blank)	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Special Instructions/QC Requirements:					
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV, Other (specify)		Date: 01/08/2019 07:28AM Relinquished by: Laura Midkiff Date/Time:		Date: 1/9/19 8:48 Received by: [Signature] Date/Time:	
Empty Kit Relinquished by:		Date:		Date/Time:	
Relinquished by:		Date/Time:		Date/Time:	
Relinquished by:		Date/Time:		Date/Time:	
Custody Seal Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Custody Seal No:		12°C 710	

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Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-164539-2
SDG Number: Gadsden Ash Pond 1198

Login Number: 164539
List Number: 1
Creator: Perez, Trina M

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	1.2°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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-164539-2
SDG Number: Gadsden Ash Pond 1198

Login Number: 164539

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 01/12/19 10:04 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	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	9.0
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").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
 SDG: Gadsden Ash Pond 1198

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	01-12-20
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	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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	01-31-20
Rhode Island	State Program	1	LAO00307	12-30-19
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	07-31-19

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	12-08-19
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	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	90125	12-31-18 *
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-164539-2
SDG: Gadsden Ash Pond 1198

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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1202
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks, Greg Dyer, & Corey Ladner
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:  **Laura Midkiff**
Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2019.03.25 13:29:35 -0500

Supervision:  **T. Durant Maske**
Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2019.03.26 10:22:32 -0500



Metals ICP

Gadsden Ash Pond

WMWGADAP_1202

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02093	637247	WMWGADAP_1202
AZ02094	637247	WMWGADAP_1202
AZ02095	637247	WMWGADAP_1202
AZ02096	637247	WMWGADAP_1202
AZ02097	637247	WMWGADAP_1202

4. All of the above samples analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1202

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02093	637752	WMWGADAP_1202
AZ02094	637752	WMWGADAP_1202
AZ02095	637752	WMWGADAP_1202
AZ02096	637752	WMWGADAP_1202
AZ02097	637752	WMWGADAP_1202

4. All of the above samples analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1202

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02093	637101	WMWGADAP_1202
AZ02094	637101	WMWGADAP_1202
AZ02095	637101	WMWGADAP_1202
AZ02096	637101	WMWGADAP_1202
AZ02097	637101	WMWGADAP_1202

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
-
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1202

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02093	637249	WMWGADAP_1202
AZ02094	637249	WMWGADAP_1202
AZ02095	637249	WMWGADAP_1202
AZ02096	637249	WMWGADAP_1202
AZ02097	637249	WMWGADAP_1202

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AZ02095
 - AZ02097



Anions

Gadsden Ash Pond

WMWGADAP_1202

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02093	637938, 637948, & 637306	WMWGADAP_1202
AZ02094	637938, 637948, & 637306	WMWGADAP_1202
AZ02095	637938, 637948, & 637306	WMWGADAP_1202
AZ02096	637938, 637948, & 637306	WMWGADAP_1202
AZ02097	637938, 637948, & 637306	WMWGADAP_1202

4. All of the above samples were analyzed and prepared by SM4500 Cl E, SM4500 F C, and SM4500 SO4 E.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.

General Quality Control Procedures:

- All calibration met criteria for the requested analyte.
- Prior to sample analysis, an initial calibration verification (ICV), and all criteria were met.
- Prior to sample analysis, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.



Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike was analyzed with each batch. Acceptance criteria for accuracy were met.
 - A sample duplicate was analyzed with each batch. Acceptance criteria for precision were met.
7. The following samples were diluted due to the analyzed sample concentration being greater than high standard of the calibration curve:

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AZ02093	SO ₄	10
AZ02094	SO ₄	10

8. The raw data results are shown with dilution factors included.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ02093

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	J	0.00257	mg/L
* Barium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01		0.0485	mg/L
* Beryllium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0006	0.003	J	0.000703	mg/L
* Boron, Total	GAS	1/31/2019	EPA 200.7		2.03	0.02	0.1	J	0.0271	mg/L
* Calcium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.1	0.5		19.6	mg/L
* Cadmium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0003	0.001	J	0.000736	mg/L
* Antimony, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0008	0.003	J	0.000922	mg/L
* Cobalt, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.005		0.0400	mg/L
* Chromium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/29/2019	EPA 245.1		1	0.0003	0.0005	J	0.000411	mg/L
* Lithium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	J	0.00114	mg/L
* Selenium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	J	0.00707	mg/L
* Thallium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	1/30/2019	SM 2540C		1		25		212	mg/L
Filter Completion Date	CRB	1/25/2019	SM 2540C		1				01/25/2019	Date
* Chloride	JCC	2/5/2019	SM4500CI E		1	0.50	1		3.91	mg/L
* Fluoride	JCC	2/5/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	1/30/2019	SM4500SO4 E		10	5.00	10		135	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ02093

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AZ02097	Calcium, Total	mg/L	-0.000538	0.22	5.00	5.03	5.07	5.04	4.25 to 5.75	101	70 to 130	0.782	20
AZ02097	Cobalt, Total	mg/L	0.000000458	0.0044	0.10	0.0852	0.0871	0.0957	0.085 to 0.115	85.2	70 to 130	2.23	20
AZ02097	Boron, Total	mg/L	0.00205	0.044	1.00	0.980	0.979	0.981	0.85 to 1.15	98.0	70 to 130	0.0723	20
AZ02097	Selenium, Total	mg/L	-0.000000938	0.0044	0.10	0.0880	0.0897	0.0938	0.085 to 0.115	88.0	70 to 130	1.97	20
AZ02097	Molybdenum, Total	mg/L	0.0000206	0.0044	0.10	0.100	0.102	0.113	0.085 to 0.115	100	70 to 130	2.28	20
AZ02097	Thallium, Total	mg/L	0.00000406	0.00044	0.10	0.0983	0.0994	0.100	0.085 to 0.115	98.3	70 to 130	1.12	20
AZ02097	Arsenic, Total	mg/L	0.0000167	0.0022	0.10	0.0937	0.0957	0.0979	0.085 to 0.115	93.7	70 to 130	2.14	20
AZ02097	Lithium, Total	mg/L	-0.000133	0.022	0.20	0.202	0.204	0.201	0.17 to 0.23	101	70 to 130	0.642	20
AZ02097	Barium, Total	mg/L	-0.00000185	0.0044	0.10	0.108	0.109	0.108	0.085 to 0.115	108	70 to 130	1.66	20
AZ02097	Cadmium, Total	mg/L	0.00000190	0.00066	0.10	0.0858	0.0871	0.0886	0.085 to 0.115	85.8	70 to 130	1.56	20
AZ02097	Mercury, Total by CVAA	mg/L	0.0000321	0.0005	0.004	0.00395	0.00390	0.00394	0.0034 to 0.0046	98.6	70 to 130	1.08	20
AZ02097	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.112	0.114	0.110	0.085 to 0.115	112	70 to 130	1.79	20
AZ02097	Chromium, Total	mg/L	0.0000327	0.0044	0.10	0.0851	0.0880	0.101	0.085 to 0.115	85.1	70 to 130	3.34	20
AZ02097	Lead, Total	mg/L	0.00000602	0.0022	0.10	0.0937	0.0949	0.101	0.085 to 0.115	93.7	70 to 130	1.26	20
AZ02097	Antimony, Total	mg/L	0.000288	0.00176	0.10	0.0905	0.0930	0.104	0.085 to 0.115	90.5	70 to 130	2.69	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ02093

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AZ02097	Solids, Dissolved	mg/L	1.00	25			0.0000	54.0	40 to 60			0.00	5
AZ02097	Chloride	mg/L	-0.0452	0.50	10.0	9.94	0.114	9.97	9 to 11	99.4	80 to 120	0.00	20
AZ02097	Fluoride	mg/L	0.0173	0.05	2.50	2.59	0.0157	2.59	2.25 to 2.75	104	80 to 120	0.00	20
AZ02097	Sulfate	mg/L	-0.168	0.50	20.0	20.4	-0.231	20.0	18 to 22	102	80 to 120	0.00	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-16 Dup

Laboratory ID Number: AZ02094

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	J	0.00238	mg/L
* Barium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01		0.0452	mg/L
* Beryllium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0006	0.003	J	0.000698	mg/L
* Boron, Total	GAS	1/31/2019	EPA 200.7		2.03	0.02	0.1	J	0.0228	mg/L
* Calcium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.1	0.5		19.3	mg/L
* Cadmium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0003	0.001	J	0.000654	mg/L
* Antimony, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.005		0.0380	mg/L
* Chromium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/29/2019	EPA 245.1		1	0.0003	0.0005	J	0.000399	mg/L
* Lithium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	J	0.00104	mg/L
* Selenium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	J	0.00658	mg/L
* Thallium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	1/30/2019	SM 2540C		1		25		218	mg/L
Filter Completion Date	CRB	1/25/2019	SM 2540C		1				01/25/2019	Date
* Chloride	JCC	2/5/2019	SM4500Cl E		1	0.50	1		3.89	mg/L
* Fluoride	JCC	2/5/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	1/30/2019	SM4500SO4 E		10	5.00	10		143	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-16 Dup

Laboratory ID Number: AZ02094

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec
			MB	Limit					Limit	Rec	Limit	Prec	
AZ02097	Calcium, Total	mg/L	-0.000538	0.22	5.00	5.03	5.07	5.04	4.25 to 5.75	101	70 to 130	0.782	20
AZ02097	Cobalt, Total	mg/L	0.00000458	0.0044	0.10	0.0852	0.0871	0.0957	0.085 to 0.115	85.2	70 to 130	2.23	20
AZ02097	Boron, Total	mg/L	0.00205	0.044	1.00	0.980	0.979	0.981	0.85 to 1.15	98.0	70 to 130	0.0723	20
AZ02097	Selenium, Total	mg/L	-0.00000938	0.0044	0.10	0.0880	0.0897	0.0938	0.085 to 0.115	88.0	70 to 130	1.97	20
AZ02097	Molybdenum, Total	mg/L	0.0000206	0.0044	0.10	0.100	0.102	0.113	0.085 to 0.115	100	70 to 130	2.28	20
AZ02097	Thallium, Total	mg/L	0.0000406	0.00044	0.10	0.0983	0.0994	0.100	0.085 to 0.115	98.3	70 to 130	1.12	20
AZ02097	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.112	0.114	0.110	0.085 to 0.115	112	70 to 130	1.79	20
AZ02097	Chromium, Total	mg/L	0.0000327	0.0044	0.10	0.0851	0.0880	0.101	0.085 to 0.115	85.1	70 to 130	3.34	20
AZ02097	Lead, Total	mg/L	0.00000602	0.0022	0.10	0.0937	0.0949	0.101	0.085 to 0.115	93.7	70 to 130	1.26	20
AZ02097	Antimony, Total	mg/L	0.000288	0.00176	0.10	0.0905	0.0930	0.104	0.085 to 0.115	90.5	70 to 130	2.69	20
AZ02097	Arsenic, Total	mg/L	0.0000167	0.0022	0.10	0.0937	0.0957	0.0979	0.085 to 0.115	93.7	70 to 130	2.14	20
AZ02097	Lithium, Total	mg/L	-0.000133	0.022	0.20	0.202	0.204	0.201	0.17 to 0.23	101	70 to 130	0.642	20
AZ02097	Barium, Total	mg/L	-0.00000185	0.0044	0.10	0.108	0.109	0.108	0.085 to 0.115	108	70 to 130	1.66	20
AZ02097	Cadmium, Total	mg/L	0.00000190	0.00066	0.10	0.0858	0.0871	0.0886	0.085 to 0.115	85.8	70 to 130	1.56	20
AZ02097	Mercury, Total by CVAA	mg/L	0.0000321	0.0005	0.004	0.00395	0.00390	0.00394	0.0034 to 0.0046	98.6	70 to 130	1.08	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-16 Dup

Laboratory ID Number: AZ02094

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AZ02097	Solids, Dissolved	mg/L	1.00	25			0.0000	54.0	40 to 60			0.00	5
AZ02097	Chloride	mg/L	-0.0452	0.50	10.0	9.94	0.114	9.97	9 to 11	99.4	80 to 120	0.00	20
AZ02097	Sulfate	mg/L	-0.168	0.50	20.0	20.4	-0.231	20.0	18 to 22	102	80 to 120	0.00	20
AZ02097	Fluoride	mg/L	0.0173	0.05	2.50	2.59	0.0157	2.59	2.25 to 2.75	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ02095

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Beryllium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	1/31/2019	EPA 200.7		2.03	0.02	0.1	U	Not Detected	mg/L
* Calcium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.1	0.5	U	Not Detected	mg/L
* Cadmium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.005	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/29/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	1/30/2019	SM 2540C		1		25	U	Not Detected	mg/L
Filter Completion Date	CRB	1/25/2019	SM 2540C		1				01/25/2019	Date
* Chloride	JCC	2/5/2019	SM4500Cl E		1	0.50	1	U	Not Detected	mg/L
* Fluoride	JCC	2/5/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	1/30/2019	SM4500SO4 E		1	0.50	1	U	Not Detected	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ02095

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec
			MB	Limit					Limit	Rec	Limit	Prec	
AZ02097	Calcium, Total	mg/L	-0.000538	0.22	5.00	5.03	5.07	5.04	4.25 to 5.75	101	70 to 130	0.782	20
AZ02097	Boron, Total	mg/L	0.00205	0.044	1.00	0.980	0.979	0.981	0.85 to 1.15	98.0	70 to 130	0.0723	20
AZ02097	Selenium, Total	mg/L	-0.000000938	0.0044	0.10	0.0880	0.0897	0.0938	0.085 to 0.115	88.0	70 to 130	1.97	20
AZ02097	Barium, Total	mg/L	-0.00000185	0.0044	0.10	0.108	0.109	0.108	0.085 to 0.115	108	70 to 130	1.66	20
AZ02097	Cadmium, Total	mg/L	0.00000190	0.00066	0.10	0.0858	0.0871	0.0886	0.085 to 0.115	85.8	70 to 130	1.56	20
AZ02097	Mercury, Total by CVAA	mg/L	0.0000321	0.0005	0.004	0.00395	0.00390	0.00394	0.0034 to 0.0046	98.6	70 to 130	1.08	20
AZ02097	Arsenic, Total	mg/L	0.0000167	0.0022	0.10	0.0937	0.0957	0.0979	0.085 to 0.115	93.7	70 to 130	2.14	20
AZ02097	Lithium, Total	mg/L	-0.000133	0.022	0.20	0.202	0.204	0.201	0.17 to 0.23	101	70 to 130	0.642	20
AZ02097	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.112	0.114	0.110	0.085 to 0.115	112	70 to 130	1.79	20
AZ02097	Chromium, Total	mg/L	0.0000327	0.0044	0.10	0.0851	0.0880	0.101	0.085 to 0.115	85.1	70 to 130	3.34	20
AZ02097	Lead, Total	mg/L	0.00000602	0.0022	0.10	0.0937	0.0949	0.101	0.085 to 0.115	93.7	70 to 130	1.26	20
AZ02097	Antimony, Total	mg/L	0.000288	0.00176	0.10	0.0905	0.0930	0.104	0.085 to 0.115	90.5	70 to 130	2.69	20
AZ02097	Molybdenum, Total	mg/L	0.0000206	0.0044	0.10	0.100	0.102	0.113	0.085 to 0.115	100	70 to 130	2.28	20
AZ02097	Thallium, Total	mg/L	0.00000406	0.00044	0.10	0.0983	0.0994	0.100	0.085 to 0.115	98.3	70 to 130	1.12	20
AZ02097	Cobalt, Total	mg/L	0.000000458	0.0044	0.10	0.0852	0.0871	0.0957	0.085 to 0.115	85.2	70 to 130	2.23	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ02095

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample Duplicate	LCS	LCS Limit	Rec Rec	Rec Limit	Prec	Prec Limit
AZ02097	Solids, Dissolved	mg/L	1.00	25			0.0000	54.0	40 to 60			0.00	5
AZ02097	Sulfate	mg/L	-0.168	0.50	20.0	20.4	-0.231	20.0	18 to 22	102	80 to 120	0.00	20
AZ02097	Chloride	mg/L	-0.0452	0.50	10.0	9.94	0.114	9.97	9 to 11	99.4	80 to 120	0.00	20
AZ02097	Fluoride	mg/L	0.0173	0.05	2.50	2.59	0.0157	2.59	2.25 to 2.75	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ02096

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01		0.206	mg/L
* Beryllium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	1/31/2019	EPA 200.7		2.03	0.02	0.1	J	0.0307	mg/L
* Calcium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.1	0.5		17.0	mg/L
* Cadmium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.005	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/29/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.01	0.02	J	0.0134	mg/L
* Molybdenum, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	J	0.00211	mg/L
* Lead, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	1/30/2019	SM 2540C		1		25		137	mg/L
Filter Completion Date	CRB	1/25/2019	SM 2540C		1				01/25/2019	Date
* Chloride	JCC	2/5/2019	SM4500CI E		1	0.50	1		3.15	mg/L
* Fluoride	JCC	2/5/2019	SM4500F C		1	0.05	0.1		0.168	mg/L
* Sulfate	JCC	1/30/2019	SM4500SO4 E		1	0.50	1		10.2	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ02096

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit	
			MB	Limit					Limit	Rec	Limit	Prec			
AZ02097	Calcium, Total	mg/L	-0.000538	0.22	5.00	5.03	5.07	5.04	4.25 to 5.75		101	70 to 130		0.782	20
AZ02097	Cobalt, Total	mg/L	0.00000458	0.0044	0.10	0.0852	0.0871	0.0957	0.085 to 0.115		85.2	70 to 130		2.23	20
AZ02097	Boron, Total	mg/L	0.00205	0.044	1.00	0.980	0.979	0.981	0.85 to 1.15		98.0	70 to 130		0.0723	20
AZ02097	Selenium, Total	mg/L	-0.00000938	0.0044	0.10	0.0880	0.0897	0.0938	0.085 to 0.115		88.0	70 to 130		1.97	20
AZ02097	Barium, Total	mg/L	-0.0000185	0.0044	0.10	0.108	0.109	0.108	0.085 to 0.115		108	70 to 130		1.66	20
AZ02097	Cadmium, Total	mg/L	0.0000190	0.00066	0.10	0.0858	0.0871	0.0886	0.085 to 0.115		85.8	70 to 130		1.56	20
AZ02097	Mercury, Total by CVAA	mg/L	0.0000321	0.0005	0.004	0.00395	0.00390	0.00394	0.0034 to 0.0046		98.6	70 to 130		1.08	20
AZ02097	Arsenic, Total	mg/L	0.0000167	0.0022	0.10	0.0937	0.0957	0.0979	0.085 to 0.115		93.7	70 to 130		2.14	20
AZ02097	Lithium, Total	mg/L	-0.000133	0.022	0.20	0.202	0.204	0.201	0.17 to 0.23		101	70 to 130		0.642	20
AZ02097	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.112	0.114	0.110	0.085 to 0.115		112	70 to 130		1.79	20
AZ02097	Chromium, Total	mg/L	0.0000327	0.0044	0.10	0.0851	0.0880	0.101	0.085 to 0.115		85.1	70 to 130		3.34	20
AZ02097	Lead, Total	mg/L	0.00000602	0.0022	0.10	0.0937	0.0949	0.101	0.085 to 0.115		93.7	70 to 130		1.26	20
AZ02097	Antimony, Total	mg/L	0.000288	0.00176	0.10	0.0905	0.0930	0.104	0.085 to 0.115		90.5	70 to 130		2.69	20
AZ02097	Molybdenum, Total	mg/L	0.0000206	0.0044	0.10	0.100	0.102	0.113	0.085 to 0.115		100	70 to 130		2.28	20
AZ02097	Thallium, Total	mg/L	0.00000406	0.00044	0.10	0.0983	0.0994	0.100	0.085 to 0.115		98.3	70 to 130		1.12	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ02096

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ02097	Sulfate	mg/L	-0.168	0.50	20.0	20.4	-0.231	20.0	18 to 22	102	80 to 120	0.00	20
AZ02097	Fluoride	mg/L	0.0173	0.05	2.50	2.59	0.0157	2.59	2.25 to 2.75	104	80 to 120	0.00	20
AZ02097	Chloride	mg/L	-0.0452	0.50	10.0	9.94	0.114	9.97	9 to 11	99.4	80 to 120	0.00	20
AZ02097	Solids, Dissolved	mg/L	1.00	25			0.0000	54.0	40 to 60			0.00	5

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

CC:

Reported: 3/25/2019
 Version: 2.0

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ02097

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Beryllium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	1/31/2019	EPA 200.7		2.03	0.02	0.1	U	Not Detected	mg/L
* Calcium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.1	0.5	U	Not Detected	mg/L
* Cadmium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.005	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	1/29/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	1/31/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/4/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	1/30/2019	SM 2540C		1		25	U	Not Detected	mg/L
Filter Completion Date	CRB	1/25/2019	SM 2540C		1				01/25/2019	Date
* Chloride	JCC	2/5/2019	SM4500Cl E		1	0.50	1	U	Not Detected	mg/L
* Fluoride	JCC	2/5/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	1/30/2019	SM4500SO4 E		1	0.50	1	U	Not Detected	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ02097

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AZ02097	Calcium, Total	mg/L	-0.000538	0.22	5.00	5.03	5.07	5.04	4.25 to 5.75	101	70 to 130	0.782	20
AZ02097	Molybdenum, Total	mg/L	0.0000206	0.0044	0.10	0.100	0.102	0.113	0.085 to 0.115	100	70 to 130	2.28	20
AZ02097	Thallium, Total	mg/L	0.00000406	0.00044	0.10	0.0983	0.0994	0.100	0.085 to 0.115	98.3	70 to 130	1.12	20
AZ02097	Arsenic, Total	mg/L	0.0000167	0.0022	0.10	0.0937	0.0957	0.0979	0.085 to 0.115	93.7	70 to 130	2.14	20
AZ02097	Lithium, Total	mg/L	-0.000133	0.022	0.20	0.202	0.204	0.201	0.17 to 0.23	101	70 to 130	0.642	20
AZ02097	Boron, Total	mg/L	0.00205	0.044	1.00	0.980	0.979	0.981	0.85 to 1.15	98.0	70 to 130	0.0723	20
AZ02097	Selenium, Total	mg/L	-0.00000938	0.0044	0.10	0.0880	0.0897	0.0938	0.085 to 0.115	88.0	70 to 130	1.97	20
AZ02097	Barium, Total	mg/L	-0.00000185	0.0044	0.10	0.108	0.109	0.108	0.085 to 0.115	108	70 to 130	1.66	20
AZ02097	Cadmium, Total	mg/L	0.00000190	0.00066	0.10	0.0858	0.0871	0.0886	0.085 to 0.115	85.8	70 to 130	1.56	20
AZ02097	Mercury, Total by CVAA	mg/L	0.0000321	0.0005	0.004	0.00395	0.00390	0.00394	0.0034 to 0.0046	98.6	70 to 130	1.08	20
AZ02097	Beryllium, Total	mg/L	0.000000	0.00132	0.10	0.112	0.114	0.110	0.085 to 0.115	112	70 to 130	1.79	20
AZ02097	Chromium, Total	mg/L	0.0000327	0.0044	0.10	0.0851	0.0880	0.101	0.085 to 0.115	85.1	70 to 130	3.34	20
AZ02097	Lead, Total	mg/L	0.00000602	0.0022	0.10	0.0937	0.0949	0.101	0.085 to 0.115	93.7	70 to 130	1.26	20
AZ02097	Antimony, Total	mg/L	0.000288	0.00176	0.10	0.0905	0.0930	0.104	0.085 to 0.115	90.5	70 to 130	2.69	20
AZ02097	Cobalt, Total	mg/L	0.000000458	0.0044	0.10	0.0852	0.0871	0.0957	0.085 to 0.115	85.2	70 to 130	2.23	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPEB
 Sample Date: 24-Jan-19
 Customer ID:
 Delivery Date: 25-Jan-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ02097

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AZ02097	Solids, Dissolved	mg/L	1.00	25			0.0000	54.0	40 to 60			0.00	5
AZ02097	Chloride	mg/L	-0.0452	0.50	10.0	9.94	0.114	9.97	9 to 11	99.4	80 to 120	0.00	20
AZ02097	Sulfate	mg/L	-0.168	0.50	20.0	20.4	-0.231	20.0	18 to 22	102	80 to 120	0.00	20
AZ02097	Fluoride	mg/L	0.0173	0.05	2.50	2.59	0.0157	2.59	2.25 to 2.75	104	80 to 120	0.00	20

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report
 Laboratory certification ID: E571114
 Issued By: State of Florida, Department of Health
 Expiration: June 30, 2019

Comments: The client submitted filtered samples for dissolved analysis, but no MB or LCS were submitted. Therefore, dissolved data is qualified. LBM 2/25/19

CC:



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
BA	Analyte found in reagent blank is = RL AND is > 1/10 the amount of the sample.
C	Analyte was verified by re-analysis.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
E	Estimated reported value exceeded calibration range.
F	Water Field Group (WFG) qualifier; see comments for more information
FA	Field results were reviewed by the Water Field Group.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
J	Reported value is an estimate because concentration is less than reporting limit.
K	No MB or LCS were submitted with the sample for dissolved analysis.
L	Check standard is outside of specification limit.
LA	Analyte recovery in the check standard was above specification limit. Results may be biased high.
LL	Analyte recovery in the check standard was below specification limit. Results may be biased low.
M	LOQ verification analyzed with batch was outside of specification limit.
N	Organic constituents tentatively identified. Confirmation is needed.
P	Precision is out of specification limit.
R	Matrix spike recovery or matrix spike duplicate recovery is outside of specification limit.
RA	Matrix spike is invalid due to sample concentration.
S	Surrogate recovery is outside of specification limit.
T	Sample temperature is outside of specification limit.
U	Compound was analyzed, but not detected.

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-165271-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1202

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

2/26/2019 6:31:02 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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Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
SDG: Gadsden Ash Pond 1202

Job ID: 400-165271-1

Laboratory: TestAmerica Pensacola

Narrative

**Job Narrative
400-165271-1**

RAD

Method(s) PrecSep_0: Radium 228 Prep Batch 160-413202: The following samples were prepared at a reduced aliquot due to limited volume: AZ02098 MW-16 (400-165271-1), AZ02098 MW-16 (400-165271-1[DU]), AZ02099 MW-16 DUP (400-165271-2), AZ02100 FB-1 (400-165271-3), AZ02101 MW-17 (400-165271-4) and AZ02102 EB-1 (400-165271-5).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-413195: The following samples were prepared at a reduced aliquot due to limited volume: AZ02098 MW-16 (400-165271-1), AZ02098 MW-16 (400-165271-1[DU]), AZ02099 MW-16 DUP (400-165271-2), AZ02100 FB-1 (400-165271-3), AZ02101 MW-17 (400-165271-4) and AZ02102 EB-1 (400-165271-5).



Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
SDG: Gadsden Ash Pond 1202

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
SDG: Gadsden Ash Pond 1202

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-165271-1	AZ02098 MW-16	Water	01/24/19 12:03	01/28/19 16:05
400-165271-2	AZ02099 MW-16 DUP	Water	01/24/19 12:03	01/28/19 16:05
400-165271-3	AZ02100 FB-1	Water	01/24/19 12:35	01/28/19 16:05
400-165271-4	AZ02101 MW-17	Water	01/24/19 14:10	01/28/19 16:05
400-165271-5	AZ02102 EB-1	Water	01/24/19 14:35	01/28/19 16:05

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
 SDG: Gadsden Ash Pond 1202

Client Sample ID: AZ02098 MW-16

Lab Sample ID: 400-165271-1

Date Collected: 01/24/19 12:03

Matrix: Water

Date Received: 01/28/19 16:05

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.137		0.0896	0.0904	1.00	0.118	pCi/L	01/31/19 12:24	02/22/19 05:41	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					01/31/19 12:24	02/22/19 05:41	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0249	U	0.300	0.300	1.00	0.530	pCi/L	01/31/19 13:34	02/13/19 16:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					01/31/19 13:34	02/13/19 16:51	1
Y Carrier	78.9		40 - 110					01/31/19 13:34	02/13/19 16:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.162	U	0.313	0.313	5.00	0.530	pCi/L		02/26/19 18:02	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
 SDG: Gadsden Ash Pond 1202

Client Sample ID: AZ02099 MW-16 DUP

Lab Sample ID: 400-165271-2

Date Collected: 01/24/19 12:03

Matrix: Water

Date Received: 01/28/19 16:05

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.224		0.107	0.109	1.00	0.123	pCi/L	01/31/19 12:24	02/22/19 05:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					01/31/19 12:24	02/22/19 05:42	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.273	U	0.385	0.385	1.00	0.641	pCi/L	01/31/19 13:34	02/13/19 16:51	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					01/31/19 13:34	02/13/19 16:51	1
Y Carrier	78.5		40 - 110					01/31/19 13:34	02/13/19 16:51	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.497	U	0.400	0.400	5.00	0.641	pCi/L		02/26/19 18:02	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
 SDG: Gadsden Ash Pond 1202

Client Sample ID: AZ02100 FB-1

Lab Sample ID: 400-165271-3

Date Collected: 01/24/19 12:35

Matrix: Water

Date Received: 01/28/19 16:05

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0178	U	0.0640	0.0640	1.00	0.123	pCi/L	01/31/19 12:24	02/22/19 05:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					01/31/19 12:24	02/22/19 05:42	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.281	U	0.305	0.306	1.00	0.500	pCi/L	01/31/19 13:34	02/13/19 16:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	106		40 - 110					01/31/19 13:34	02/13/19 16:52	1
Y Carrier	80.0		40 - 110					01/31/19 13:34	02/13/19 16:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.299	U	0.312	0.313	5.00	0.500	pCi/L		02/26/19 18:02	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
 SDG: Gadsden Ash Pond 1202

Client Sample ID: AZ02101 MW-17

Lab Sample ID: 400-165271-4

Date Collected: 01/24/19 14:10

Matrix: Water

Date Received: 01/28/19 16:05

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.124		0.0863	0.0870	1.00	0.117	pCi/L	01/31/19 12:24	02/22/19 05:42	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					01/31/19 12:24	02/22/19 05:42	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.207	U	0.341	0.342	1.00	0.574	pCi/L	01/31/19 13:34	02/13/19 16:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					01/31/19 13:34	02/13/19 16:52	1
Y Carrier	80.7		40 - 110					01/31/19 13:34	02/13/19 16:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.331	U	0.352	0.353	5.00	0.574	pCi/L		02/26/19 18:02	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
 SDG: Gadsden Ash Pond 1202

Client Sample ID: AZ02102 EB-1

Lab Sample ID: 400-165271-5

Date Collected: 01/24/19 14:35

Matrix: Water

Date Received: 01/28/19 16:05

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.00939	U	0.0540	0.0540	1.00	0.119	pCi/L	01/31/19 12:24	02/22/19 05:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					01/31/19 12:24	02/22/19 05:43	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.207	U	0.331	0.332	1.00	0.558	pCi/L	01/31/19 13:34	02/13/19 16:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					01/31/19 13:34	02/13/19 16:52	1
Y Carrier	79.3		40 - 110					01/31/19 13:34	02/13/19 16:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.198	U	0.335	0.336	5.00	0.558	pCi/L		02/26/19 18:10	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
SDG: Gadsden Ash Pond 1202

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
SDG: Gadsden Ash Pond 1202

Client Sample ID: AZ02098 MW-16

Date Collected: 01/24/19 12:03

Date Received: 01/28/19 16:05

Lab Sample ID: 400-165271-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			413195	01/31/19 12:24	MMO	TAL SL
Total/NA	Analysis	9315		1	416171	02/22/19 05:41	KLS	TAL SL
Total/NA	Prep	PrecSep_0			413202	01/31/19 13:34	MMO	TAL SL
Total/NA	Analysis	9320		1	414693	02/13/19 16:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	417004	02/26/19 18:02	ALS	TAL SL

Client Sample ID: AZ02099 MW-16 DUP

Date Collected: 01/24/19 12:03

Date Received: 01/28/19 16:05

Lab Sample ID: 400-165271-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			413195	01/31/19 12:24	MMO	TAL SL
Total/NA	Analysis	9315		1	416171	02/22/19 05:42	KLS	TAL SL
Total/NA	Prep	PrecSep_0			413202	01/31/19 13:34	MMO	TAL SL
Total/NA	Analysis	9320		1	414693	02/13/19 16:51	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	417004	02/26/19 18:02	ALS	TAL SL

Client Sample ID: AZ02100 FB-1

Date Collected: 01/24/19 12:35

Date Received: 01/28/19 16:05

Lab Sample ID: 400-165271-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			413195	01/31/19 12:24	MMO	TAL SL
Total/NA	Analysis	9315		1	416171	02/22/19 05:42	KLS	TAL SL
Total/NA	Prep	PrecSep_0			413202	01/31/19 13:34	MMO	TAL SL
Total/NA	Analysis	9320		1	414693	02/13/19 16:52	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	417004	02/26/19 18:02	ALS	TAL SL

Client Sample ID: AZ02101 MW-17

Date Collected: 01/24/19 14:10

Date Received: 01/28/19 16:05

Lab Sample ID: 400-165271-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			413195	01/31/19 12:24	MMO	TAL SL
Total/NA	Analysis	9315		1	416171	02/22/19 05:42	KLS	TAL SL
Total/NA	Prep	PrecSep_0			413202	01/31/19 13:34	MMO	TAL SL
Total/NA	Analysis	9320		1	414693	02/13/19 16:52	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	417004	02/26/19 18:02	ALS	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
SDG: Gadsden Ash Pond 1202

Client Sample ID: AZ02102 EB-1

Lab Sample ID: 400-165271-5

Date Collected: 01/24/19 14:35

Matrix: Water

Date Received: 01/28/19 16:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			413195	01/31/19 12:24	MMO	TAL SL
Total/NA	Analysis	9315		1	416172	02/22/19 05:43	KLS	TAL SL
Total/NA	Prep	PrecSep_0			413202	01/31/19 13:34	MMO	TAL SL
Total/NA	Analysis	9320		1	414693	02/13/19 16:52	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	417004	02/26/19 18:10	ALS	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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
SDG: Gadsden Ash Pond 1202

Rad

Prep Batch: 413195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-165271-1	AZ02098 MW-16	Total/NA	Water	PrecSep-21	
400-165271-2	AZ02099 MW-16 DUP	Total/NA	Water	PrecSep-21	
400-165271-3	AZ02100 FB-1	Total/NA	Water	PrecSep-21	
400-165271-4	AZ02101 MW-17	Total/NA	Water	PrecSep-21	
400-165271-5	AZ02102 EB-1	Total/NA	Water	PrecSep-21	
MB 160-413195/23-B	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-413195/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-165271-1 DU	AZ02098 MW-16	Total/NA	Water	PrecSep-21	

Prep Batch: 413202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-165271-1	AZ02098 MW-16	Total/NA	Water	PrecSep_0	
400-165271-2	AZ02099 MW-16 DUP	Total/NA	Water	PrecSep_0	
400-165271-3	AZ02100 FB-1	Total/NA	Water	PrecSep_0	
400-165271-4	AZ02101 MW-17	Total/NA	Water	PrecSep_0	
400-165271-5	AZ02102 EB-1	Total/NA	Water	PrecSep_0	
MB 160-413202/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-413202/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-165271-1 DU	AZ02098 MW-16	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
 SDG: Gadsden Ash Pond 1202

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-413195/23-B
Matrix: Water
Analysis Batch: 416172

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413195

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.01314	U	0.0204	0.0204	1.00	0.0651	pCi/L	01/31/19 12:24	02/22/19 05:43	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	Limits							
Ba Carrier	107		40 - 110		01/31/19 12:24	02/22/19 05:43	1			

Lab Sample ID: LCS 160-413195/1-A
Matrix: Water
Analysis Batch: 416171

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413195

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	11.4	11.76		1.20	1.00	0.0808	pCi/L	104	68 - 137
Carrier	LCS LCS		Limits		Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier	Limits						
Ba Carrier	104		40 - 110						

Lab Sample ID: 400-165271-1 DU
Matrix: Water
Analysis Batch: 416171

Client Sample ID: AZ02098 MW-16
Prep Type: Total/NA
Prep Batch: 413195

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.137		0.04744	U	0.0679	1.00	0.115	pCi/L	0.56	1
Carrier	DU DU		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	Limits							
Ba Carrier	109		40 - 110							

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-413202/23-A
Matrix: Water
Analysis Batch: 414693

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 413202

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-228	0.1713	U	0.233	0.234	1.00	0.389	pCi/L	01/31/19 13:34	02/13/19 16:52	1
Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Ba Carrier	%Yield	Qualifier	Limits							
Ba Carrier	107		40 - 110		01/31/19 13:34	02/13/19 16:52	1			
Y Carrier	MB MB		Limits		Prepared	Analyzed	Dil Fac			
Y Carrier	%Yield	Qualifier	Limits							
Y Carrier	78.1		40 - 110		01/31/19 13:34	02/13/19 16:52	1			

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
 SDG: Gadsden Ash Pond 1202

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

Lab Sample ID: LCS 160-413202/1-A
Matrix: Water
Analysis Batch: 414693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 413202

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	9.49	7.916		0.966	1.00	0.402	pCi/L	83	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	104		40 - 110
Y Carrier	72.1		40 - 110

Lab Sample ID: 400-165271-1 DU
Matrix: Water
Analysis Batch: 414693

Client Sample ID: AZ02098 MW-16
Prep Type: Total/NA
Prep Batch: 413202

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.0249	U	0.3663	U	0.299	1.00	0.473	pCi/L	0.57	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	109		40 - 110
Y Carrier	80.4		40 - 110

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-165271-1 DU
Matrix: Water
Analysis Batch: 417004

Client Sample ID: AZ02098 MW-16
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.162	U	0.4137	U	0.307	5.00	0.473	pCi/L	0.41	

TestAmerica Pensacola
 3355 McLemore Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL, 35040 Phone: 205-664-6197(Tel) Email: lbmidkf@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1202		Sampler Nick Pitts Phone:		Lab PM Whitney Cheyenne R E-Mail: cheyenne.whitmire@testamericainc.com		Carrier Tracking Notes: COC No: 400-56525-24537.1 Page: Page 1 of 1 Job #:																	
Due Date Requested: (AT Requested (days):) Routine PO #: WO #: Project #: 40007143 SSON#:		Analysis Requested  400-165271 COC		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:		Special Instructions/Note:																	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=Water, S=solid, D=dewast, B=issue, A=air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		SM 4500 F.C		SM 4500 CLE		SM 4500 SO4.E		9315, Ra226, 9320, Ra228, Ra226Ra228, G.FPC		Total Number of containers	
AZ02098		1/24/19		12:03		G		Water		X		X		X		3		MW-16		Special Instructions/Note:			
AZ02099		1/24/19		12:03		G		Water		X		X		X		1		MW-16 DUP (Sample Duplicate)					
AZ02100		1/24/19		12:35		G		Water		X		X		X		1		FB-1 (Field Blank)					
AZ02101		1/24/19		14:10		G		Water		X		X		X		1		MW-17					
AZ02102		1/24/19		14:35		G		Water		X		X		X		1		EB-1 (Equipment Blank)					

- 1
- 2
- 3
- 4
- 5
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- 7
- 8
- 9
- 10
- 11
- 12
- 13

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return To Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements

Received by: _____
 Date/Time: _____
 Company: _____

Received by: *Shad*
 Date/Time: 1-28-19 1605
 Company: TTA-16N
 Cooler Temperature(s) °C and Other Remarks: 14.80C IR-7

Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-165271-1
SDG Number: Gadsden Ash Pond 1202

Login Number: 165271

List Number: 1

Creator: Conrady, Hank W

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	14.8°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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-165271-1
SDG Number: Gadsden Ash Pond 1202

Login Number: 165271

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 01/30/19 01:46 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	20.0
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
 SDG: Gadsden Ash Pond 1202

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	01-12-20
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	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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	01-31-20
Rhode Island	State Program	1	LAO00307	12-30-19
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	07-31-19

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 / DOE		L2305	04-06-19 *
Arizona	State Program	9	AZ0813	12-08-19
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	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165271-1
SDG: Gadsden Ash Pond 1202

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	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Pensacola

Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1203
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks, Greg Dyer, & Corey Ladner
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:  **Laura Midkiff**
Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2019.03.25 14:19:59 -0500

Supervision:  **T. Durant
Maske**

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2019.03.26 10:23:10 -0500



Metals ICP

Gadsden Ash Pond

WMWGADAP_1203

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02971	638083	WMWGADAP_1203
AZ02972	638083	WMWGADAP_1203
AZ02973	638083	WMWGADAP_1203
AZ02974	638083	WMWGADAP_1203
AZ02975	638083	WMWGADAP_1203
AZ02976	638083	WMWGADAP_1203
AZ03199	638085	WMWGADAP_1203
AZ03200	638085	WMWGADAP_1203
AZ03201	638085	WMWGADAP_1203
AZ03202	638085	WMWGADAP_1203
AZ03203	638085	WMWGADAP_1203
AZ03204	638085	WMWGADAP_1203
AZ03205	638085	WMWGADAP_1203
AZ03206	638085	WMWGADAP_1203
AZ03207	638085	WMWGADAP_1203
AZ03208	638085	WMWGADAP_1203
AZ03209	638086	WMWGADAP_1203
AZ03210	638086	WMWGADAP_1203
AZ03211	638086	WMWGADAP_1203
AZ03212	638086	WMWGADAP_1203
AZ03213	638086	WMWGADAP_1203
AZ03214	638086	WMWGADAP_1203
AZ03215	638086	WMWGADAP_1203

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met. However, the original LCS for samples AZ03209-15 was placed in wrong autosampler position. The samples were reanalyzed with passing results.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects. The following sample was diluted due to the analyzed sample concentration being greater than the high standard of the calibration curve:

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AZ02975	Calcium	x10.15

8. The raw data results are shown with dilution factors included.



Metals ICPMS

Gadsden Ash Pond

WMWGADAP_1203

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02971	638682	WMWGADAP_1203
AZ02972	638682	WMWGADAP_1203
AZ02973	638682	WMWGADAP_1203
AZ02974	638682	WMWGADAP_1203
AZ02975	638682	WMWGADAP_1203
AZ02976	638682	WMWGADAP_1203
AZ03199	638682	WMWGADAP_1203
AZ03200	638682	WMWGADAP_1203
AZ03201	638682	WMWGADAP_1203
AZ03202	638682	WMWGADAP_1203
AZ03203	638683	WMWGADAP_1203
AZ03204	638683	WMWGADAP_1203
AZ03205	638683	WMWGADAP_1203
AZ03206	638683	WMWGADAP_1203
AZ03207	638683	WMWGADAP_1203
AZ03208	638683	WMWGADAP_1203
AZ03209	638683	WMWGADAP_1203
AZ03210	638683	WMWGADAP_1203
AZ03211	638683	WMWGADAP_1203
AZ03212	638683	WMWGADAP_1203
AZ03213	638684	WMWGADAP_1203
AZ03214	638684	WMWGADAP_1203
AZ03215	638684	WMWGADAP_1203

4. All of the above samples were analyzed by EPA 200.8 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- All tune and calibration met criteria for all requested analytes.
- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The interference check samples associated with EPA 200.8 were analyzed and passed for all requested analytes.
- All sample internal standard criteria were met.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICPMS batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x5.075 dilution to compensate for potential matrix effects.
 8. The raw data results are shown with dilution factors included.



Mercury

Gadsden Ash Pond

WMWGADAP_1203

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02971	638216	WMWGADAP_1203
AZ02972	638216	WMWGADAP_1203
AZ02973	638216	WMWGADAP_1203
AZ02974	638216	WMWGADAP_1203
AZ02975	638216	WMWGADAP_1203
AZ02976	638216	WMWGADAP_1203
AZ03199	638216	WMWGADAP_1203
AZ03200	638216	WMWGADAP_1203
AZ03201	638216	WMWGADAP_1203
AZ03202	638216	WMWGADAP_1203
AZ03203	638217	WMWGADAP_1203
AZ03204	638217	WMWGADAP_1203
AZ03205	638217	WMWGADAP_1203
AZ03206	638217	WMWGADAP_1203
AZ03207	638217	WMWGADAP_1203
AZ03208	638217	WMWGADAP_1203
AZ03209	638217	WMWGADAP_1203
AZ03210	638217	WMWGADAP_1203
AZ03211	638217	WMWGADAP_1203
AZ03212	638217	WMWGADAP_1203
AZ03213	638218	WMWGADAP_1203
AZ03214	638218	WMWGADAP_1203
AZ03215	638218	WMWGADAP_1203

4. All of the above samples were analyzed and prepared by EPA 245.1.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch was below the limit of quantitation for the requested analyte.
- All calibration met criteria for the requested analyte.
- All response signals were satisfactory.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each batch. All acceptance criteria for precision were met.
7. All samples were analyzed without a dilution.
 8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1203

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02971	638740	WMWGADAP_1203
AZ02972	638740	WMWGADAP_1203
AZ02973	638740	WMWGADAP_1203
AZ02974	638740	WMWGADAP_1203
AZ02975	638740	WMWGADAP_1203
AZ02976	638740	WMWGADAP_1203
AZ03199	638740	WMWGADAP_1203
AZ03200	638740	WMWGADAP_1203
AZ03201	638740	WMWGADAP_1203
AZ03202	638740	WMWGADAP_1203
AZ03203	638741	WMWGADAP_1203
AZ03204	638741	WMWGADAP_1203
AZ03205	638741	WMWGADAP_1203
AZ03206	638741	WMWGADAP_1203
AZ03207	638741	WMWGADAP_1203
AZ03208	638741	WMWGADAP_1203
AZ03209	638741	WMWGADAP_1203
AZ03210	638741	WMWGADAP_1203
AZ03211	638741	WMWGADAP_1203
AZ03212	638741	WMWGADAP_1203
AZ03213	638571	WMWGADAP_1203
AZ03214	638571	WMWGADAP_1203
AZ03215	638571	WMWGADAP_1203

4. All of the above samples analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AZ02976
 - AZ03212
 - AZ03215



Anions

Gadsden Ash Pond

WMWGADAP_1203

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ02971	638528, 638530, & 638844	WMWGADAP_1203
AZ02972	638528, 638530, & 638844	WMWGADAP_1203
AZ02973	638528, 638530, & 638844	WMWGADAP_1203
AZ02974	638528, 638530, & 638844	WMWGADAP_1203
AZ02975	638528, 638530, & 638844	WMWGADAP_1203
AZ02976	638528, 638530, & 638844	WMWGADAP_1203
AZ03199	638532, 638534, & 638848	WMWGADAP_1203
AZ03200	638532, 638534, & 638848	WMWGADAP_1203
AZ03201	638532, 638534, & 638848	WMWGADAP_1203
AZ03202	638532, 638534, & 638848	WMWGADAP_1203
AZ03203	638532, 638534, & 638848	WMWGADAP_1203
AZ03204	638532, 638534, & 638848	WMWGADAP_1203
AZ03205	638532, 638534, & 638848	WMWGADAP_1203
AZ03206	638532, 638534, & 638848	WMWGADAP_1203
AZ03207	638532, 638534, & 638848	WMWGADAP_1203
AZ03208	638532, 638534, & 638848	WMWGADAP_1203
AZ03209	638533, 638535, & 638849	WMWGADAP_1203
AZ03210	638533, 638535, & 638849	WMWGADAP_1203
AZ03211	638533, 638535, & 638849	WMWGADAP_1203
AZ03212	638533, 638535, & 638849	WMWGADAP_1203
AZ03213	638533, 638535, & 638849	WMWGADAP_1203
AZ03214	638533, 638535, & 638849	WMWGADAP_1203
AZ03215	638533, 638535, & 638849	WMWGADAP_1203

4. All of the above samples were analyzed and prepared by SM4500 Cl E, SM4500 F C, and SM4500 SO4 E.
5. All samples were prepared and within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- All calibration met criteria for the requested analyte.
- Prior to sample analysis, an initial calibration verification (ICV), and all criteria were met.
- Prior to sample analysis, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures:

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike was analyzed with each batch. Acceptance criteria for accuracy were met.
 - A sample duplicate was analyzed with each batch. Acceptance criteria for precision were met.
7. The following samples were diluted due to the analyzed sample concentration being greater than the high standard of the calibration curve:

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AZ02971	Sulfate	x10
AZ02973	Sulfate	x10
AZ02975	Sulfate	x20
AZ03199	Sulfate	x16
AZ03201	Sulfate	x25
AZ03205	Sulfate	x25
AZ03206	Sulfate	x25
AZ03207	Sulfate	x10

8. The raw data results are shown with dilution factors included.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ02971

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	J	0.00355	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01		0.0354	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	J	0.000711	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	J	0.0245	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5		20.8	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001		0.00101	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005		0.0538	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	J	0.000473	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	J	0.00135	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	J	0.00938	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25		269	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1		3.94	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		10	5.00	10		183	mg/L

This Certificate states the physical and/or chemical characteristics of the sample as submitted. This document shall not be reproduced, except in full, without written consent from Alabama Power's General Test Laboratory.

MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ02971

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115	85.3	70 to 130	4.97	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115	91.2	70 to 130	0.320	20
AZ02976	Calcium, Total	mg/L	0.000756	0.22	5.00	4.95	4.97	4.94	4.25 to 5.75	99.1	70 to 130	0.394	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115	89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115	98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115	98.5	70 to 130	3.61	20
AZ02976	Lithium, Total	mg/L	-0.00000190	0.022	0.20	0.198	0.199	0.196	0.17 to 0.23	98.8	70 to 130	0.737	20
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115	92.5	70 to 130	6.26	20
AZ02976	Boron, Total	mg/L	-0.000516	0.044	1.00	0.963	0.979	0.967	0.85 to 1.15	96.3	70 to 130	1.67	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046	98.2	70 to 130	2.06	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115	95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115	88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115	91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115	93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115	96.8	70 to 130	3.81	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ02971

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ02976	Sulfate	mg/L	-0.0494	0.50	20.0	19.8	-0.141	19.5	18 to 22	99.0	80 to 120	0.00	20
AZ02976	Chloride	mg/L	-0.038	0.50	10.0	9.94	0.143	10.0	9 to 11	99.4	80 to 120	0.00	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ02976	Fluoride	mg/L	-0.039	0.05	2.50	2.56	-0.0405	2.57	2.25 to 2.75	102	80 to 120	0.00	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Reported: 3/25/2019
 Version: 2.0

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ02972

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.168	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	J 0.0306	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	17.1	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	J 0.0126	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	J 0.00205	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	138	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500Cl E		1	0.50	1	2.98	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	0.192	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	10.4	mg/L

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ02972

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115	85.3	70 to 130	4.97	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115	91.2	70 to 130	0.320	20
AZ02976	Calcium, Total	mg/L	0.000756	0.22	5.00	4.95	4.97	4.94	4.25 to 5.75	99.1	70 to 130	0.394	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115	89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115	98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115	98.5	70 to 130	3.61	20
AZ02976	Lithium, Total	mg/L	-0.00000190	0.022	0.20	0.198	0.199	0.196	0.17 to 0.23	98.8	70 to 130	0.737	20
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115	92.5	70 to 130	6.26	20
AZ02976	Boron, Total	mg/L	-0.000516	0.044	1.00	0.963	0.979	0.967	0.85 to 1.15	96.3	70 to 130	1.67	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046	98.2	70 to 130	2.06	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115	95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115	88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115	91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115	93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115	96.8	70 to 130	3.81	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ02972

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ02976	Sulfate	mg/L	-0.0494	0.50	20.0	19.8	-0.141	19.5	18 to 22	99.0	80 to 120	0.00	20
AZ02976	Chloride	mg/L	-0.038	0.50	10.0	9.94	0.143	10.0	9 to 11	99.4	80 to 120	0.00	20
AZ02976	Fluoride	mg/L	-0.039	0.05	2.50	2.56	-0.0405	2.57	2.25 to 2.75	102	80 to 120	0.00	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AZ02973

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	J	0.00119	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01		0.0314	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	J	0.00110	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	U	Not Detected	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5		15.1	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	J	0.000515	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005		0.0359	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005		0.000664	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	J	0.00156	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	J	0.00387	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25		180	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1		3.12	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		10	5.00	10		126	mg/L

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Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AZ02973

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115		85.3	70 to 130	4.97	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115		91.2	70 to 130	0.320	20
AZ02976	Calcium, Total	mg/L	0.000756	0.22	5.00	4.95	4.97	4.94	4.25 to 5.75		99.1	70 to 130	0.394	20
AZ02976	Boron, Total	mg/L	-0.000516	0.044	1.00	0.963	0.979	0.967	0.85 to 1.15		96.3	70 to 130	1.67	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046		98.2	70 to 130	2.06	20
AZ02976	Lithium, Total	mg/L	-0.00000190	0.022	0.20	0.198	0.199	0.196	0.17 to 0.23		98.8	70 to 130	0.737	20
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115		92.5	70 to 130	6.26	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115		89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115		98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115		98.5	70 to 130	3.61	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115		95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115		88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115		91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115		93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115		96.8	70 to 130	3.81	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AZ02973

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ02976	Chloride	mg/L	-0.038	0.50	10.0	9.94	0.143	10.0	9 to 11	99.4	80 to 120	0.00	20
AZ02976	Sulfate	mg/L	-0.0494	0.50	20.0	19.8	-0.141	19.5	18 to 22	99.0	80 to 120	0.00	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ02976	Fluoride	mg/L	-0.039	0.05	2.50	2.56	-0.0405	2.57	2.25 to 2.75	102	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
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 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AZ02974

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.215	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	0.453	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	36.6	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	J 0.00210	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	198	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	7.24	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	J 0.0651	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	24.3	mg/L

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Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AZ02974

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec Limit		
			MB	Limit					Rec	Limit			
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115	85.3	70 to 130	4.97	20
AZ02976	Calcium, Total	mg/L	0.000756	0.22	5.00	4.95	4.97	4.94	4.25 to 5.75	99.1	70 to 130	0.394	20
AZ02976	Lithium, Total	mg/L	-0.00000190	0.022	0.20	0.198	0.199	0.196	0.17 to 0.23	98.8	70 to 130	0.737	20
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115	92.5	70 to 130	6.26	20
AZ02976	Boron, Total	mg/L	-0.000516	0.044	1.00	0.963	0.979	0.967	0.85 to 1.15	96.3	70 to 130	1.67	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046	98.2	70 to 130	2.06	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115	89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115	98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115	98.5	70 to 130	3.61	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115	95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115	88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115	91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115	93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115	96.8	70 to 130	3.81	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115	91.2	70 to 130	0.320	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AZ02974

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ02976	Chloride	mg/L	-0.038	0.50	10.0	9.94	0.143	10.0	9 to 11	99.4	80 to 120	0.00	20
AZ02976	Sulfate	mg/L	-0.0494	0.50	20.0	19.8	-0.141	19.5	18 to 22	99.0	80 to 120	0.00	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ02976	Fluoride	mg/L	-0.039	0.05	2.50	2.56	-0.0405	2.57	2.25 to 2.75	102	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AZ02975

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	J	0.00365	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01		0.0439	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1		1.20	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		10.15	1.015	5.075		292	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005		0.0264	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		50		1200	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1		5.80	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	J	0.0525	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		20	10.00	20		702	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AZ02975

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec Limit		
			MB	Limit					Rec	Limit			
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115	85.3	70 to 130	4.97	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115	91.2	70 to 130	0.320	20
AZ02976	Calcium, Total	mg/L	0.000756	0.22	5.00	4.95	4.97	4.94	4.25 to 5.75	99.1	70 to 130	0.394	20
AZ02976	Lithium, Total	mg/L	-0.00000190	0.022	0.20	0.198	0.199	0.196	0.17 to 0.23	98.8	70 to 130	0.737	20
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115	92.5	70 to 130	6.26	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115	89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115	98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115	98.5	70 to 130	3.61	20
AZ02976	Boron, Total	mg/L	-0.000516	0.044	1.00	0.963	0.979	0.967	0.85 to 1.15	96.3	70 to 130	1.67	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046	98.2	70 to 130	2.06	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115	95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115	88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115	91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115	93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115	96.8	70 to 130	3.81	20

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AZ02975

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AZ02976	Sulfate	mg/L	-0.0494	0.50	20.0	19.8	-0.141	19.5	18 to 22	99.0	80 to 120	0.00	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ02976	Fluoride	mg/L	-0.039	0.05	2.50	2.56	-0.0405	2.57	2.25 to 2.75	102	80 to 120	0.00	20
AZ02976	Chloride	mg/L	-0.038	0.50	10.0	9.94	0.143	10.0	9 to 11	99.4	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ02976

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	U	Not Detected	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	U	Not Detected	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	U	Not Detected	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500Cl E		1	0.50	1	U	Not Detected	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	U	Not Detected	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ02976

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115	85.3	70 to 130	4.97	20	
AZ02976	Calcium, Total	mg/L	0.000756	0.22	5.00	4.95	4.97	4.94	4.25 to 5.75	99.1	70 to 130	0.394	20	
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115	91.2	70 to 130	0.320	20	
AZ02976	Lithium, Total	mg/L	-0.00000190	0.022	0.20	0.198	0.199	0.196	0.17 to 0.23	98.8	70 to 130	0.737	20	
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115	92.5	70 to 130	6.26	20	
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115	89.5	70 to 130	0.578	20	
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115	98.0	70 to 130	5.93	20	
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115	98.5	70 to 130	3.61	20	
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115	95.1	70 to 130	4.66	20	
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115	88.3	70 to 130	5.12	20	
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115	91.4	70 to 130	4.71	20	
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115	93.8	70 to 130	5.25	20	
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115	96.8	70 to 130	3.81	20	
AZ02976	Boron, Total	mg/L	-0.000516	0.044	1.00	0.963	0.979	0.967	0.85 to 1.15	96.3	70 to 130	1.67	20	
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046	98.2	70 to 130	2.06	20	

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 Corey Ladner

Customer Account: WMWGADAPFB
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 06-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ02976

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AZ02976	Fluoride	mg/L	-0.039	0.05	2.50	2.56	-0.0405	2.57	2.25 to 2.75	102	80 to 120	0.00	20
AZ02976	Chloride	mg/L	-0.038	0.50	10.0	9.94	0.143	10.0	9 to 11	99.4	80 to 120	0.00	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ02976	Sulfate	mg/L	-0.0494	0.50	20.0	19.8	-0.141	19.5	18 to 22	99.0	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AZ03199

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.0363	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	1.01	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	68.6	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	0.0232	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	428	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	6.95	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	J 0.0640	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		16	8.00	16	263	mg/L

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Comments:

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AZ03199

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115	85.3	70 to 130	4.97	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046	98.2	70 to 130	2.06	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115	91.2	70 to 130	0.320	20
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115	92.5	70 to 130	6.26	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15	95.9	70 to 130	0.619	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115	89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115	98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115	98.5	70 to 130	3.61	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115	95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115	88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115	91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115	93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115	96.8	70 to 130	3.81	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75	92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23	101	70 to 130	0.795	20

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Batch QC Summary



To: Dustin Brooks
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 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AZ03199

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20

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* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AZ03200

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	0.0107	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.173	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	0.430	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	25.5	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	0.0263	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	158	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	9.81	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	0.259	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	5.38	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AZ03200

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			MB	Limit					Limit	Rec	Limit	Prec		
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115		85.3	70 to 130	4.97	20
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115		92.5	70 to 130	6.26	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15		95.9	70 to 130	0.619	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115		91.2	70 to 130	0.320	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046		98.2	70 to 130	2.06	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115		89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115		98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115		98.5	70 to 130	3.61	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115		95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115		88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115		91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115		93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115		96.8	70 to 130	3.81	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75		92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23		101	70 to 130	0.795	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AZ03200

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20

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Laboratory certification ID: E571114

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Alabama Power General Test Laboratory
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 Calera, AL 35040
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 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AZ03201

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	0.740	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.0418	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	0.575	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	80.6	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	0.0362	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	0.0545	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.0196	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	J 0.000256	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	366	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	2.56	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	0.207	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		25	12.50	25	145	mg/L

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Comments:

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AZ03201

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			Limit	MB					Limit	Rec	Limit	Prec		
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115		85.3	70 to 130	4.97	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115		91.2	70 to 130	0.320	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046		98.2	70 to 130	2.06	20
AZ03202	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115		92.5	70 to 130	6.26	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15		95.9	70 to 130	0.619	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115		89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115		98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115		98.5	70 to 130	3.61	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115		95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115		88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115		91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115		93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115		96.8	70 to 130	3.81	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75		92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23		101	70 to 130	0.795	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AZ03201

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20

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Expiration: June 30, 2019

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AZ03202

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.0578	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	30.1	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	113	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	3.78	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	J 0.0934	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	3.99	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AZ03202

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS	Rec		Prec	Limit
				Limit	Spike					Limit	Prec		
AZ03202	Cadmium, Total	mg/L	0.0000220	0.00066	0.10	0.0925	0.0869	0.0968	0.085 to 0.115	92.5	70 to 130	6.26	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15	95.9	70 to 130	0.619	20
AZ03202	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0853	0.0812	0.0947	0.085 to 0.115	85.3	70 to 130	4.97	20
AZ03202	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0951	0.0908	0.110	0.085 to 0.115	95.1	70 to 130	4.66	20
AZ03202	Barium, Total	mg/L	-0.0000868	0.0044	0.10	0.146	0.139	0.0910	0.085 to 0.115	88.3	70 to 130	5.12	20
AZ03202	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0914	0.0872	0.0960	0.085 to 0.115	91.4	70 to 130	4.71	20
AZ03202	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0938	0.0890	0.111	0.085 to 0.115	93.8	70 to 130	5.25	20
AZ03202	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0968	0.0932	0.0959	0.085 to 0.115	96.8	70 to 130	3.81	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75	92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23	101	70 to 130	0.795	20
AZ03202	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0912	0.0915	0.0934	0.085 to 0.115	91.2	70 to 130	0.320	20
AZ03202	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0895	0.0900	0.104	0.085 to 0.115	89.5	70 to 130	0.578	20
AZ03202	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0980	0.0924	0.102	0.085 to 0.115	98.0	70 to 130	5.93	20
AZ03202	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0985	0.0950	0.103	0.085 to 0.115	98.5	70 to 130	3.61	20
AZ03202	Mercury, Total by CVAA	mg/L	0.0000313	0.0005	0.004	0.00393	0.00401	0.00394	0.0034 to 0.0046	98.2	70 to 130	2.06	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AZ03202

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03202	Solids, Dissolved	mg/L	1.00	25			112	54.0	40 to 60			0.444	5
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
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 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AZ03203

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01		0.0551	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	J	0.0509	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5		14.5	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25		107	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500Cl E		1	0.50	1		8.73	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	J	0.0581	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1		13.9	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AZ03203

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	
			MB	Limit					Limit	Rec	Limit	Prec		
AZ03212	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115		89.0	70 to 130	4.40	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115		76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115		90.8	70 to 130	4.05	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115		91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115		88.2	70 to 130	2.97	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046		96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115		93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115		84.4	70 to 130	4.66	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15		95.9	70 to 130	0.619	20
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115		75.6	70 to 130	5.51	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115		88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115		82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115		85.8	70 to 130	4.33	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75		92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23		101	70 to 130	0.795	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AZ03203

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AZ03204

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.0500	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	J 0.0517	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	14.4	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	86.7	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	8.76	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	J 0.0583	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	13.7	mg/L

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Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AZ03204

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	
				Limit	Spike				Limit	Rec	Limit	Prec		
AZ03212	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115		89.0	70 to 130	4.40	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115		76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115		90.8	70 to 130	4.05	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046		96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115		93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115		84.4	70 to 130	4.66	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15		95.9	70 to 130	0.619	20
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115		75.6	70 to 130	5.51	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115		91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115		88.2	70 to 130	2.97	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75		92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23		101	70 to 130	0.795	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115		88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115		82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115		85.8	70 to 130	4.33	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 05-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AZ03204

Sample	Analysis	Units	MB	MB		Sample		LCS	Rec		Prec		
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AZ03205

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01		0.0360	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	J	0.0511	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5		52.2	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	J	0.000583	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	J	0.00485	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25		399	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1		5.95	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		25	12.50	25		239	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AZ03205

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AZ03212	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115	89.0	70 to 130	4.40	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115	76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115	90.8	70 to 130	4.05	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75	92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23	101	70 to 130	0.795	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15	95.9	70 to 130	0.619	20
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115	75.6	70 to 130	5.51	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115	88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115	82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115	85.8	70 to 130	4.33	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115	91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115	88.2	70 to 130	2.97	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046	96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115	93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115	84.4	70 to 130	4.66	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AZ03205

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

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 Calera, AL 35040
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 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-12 DUP

Laboratory ID Number: AZ03206

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01		0.0357	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	J	0.0510	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5		52.3	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	J	0.000601	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	J	0.00475	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25		385	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500Cl E		1	0.50	1		5.92	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		25	12.50	25		249	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-12 DUP

Laboratory ID Number: AZ03206

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AZ03212	Cobalt, Total	mg/L	0.0000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115	89.0	70 to 130	4.40	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75	92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23	101	70 to 130	0.795	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15	95.9	70 to 130	0.619	20
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115	75.6	70 to 130	5.51	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046	96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115	93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115	84.4	70 to 130	4.66	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115	91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115	88.2	70 to 130	2.97	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115	76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115	90.8	70 to 130	4.05	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115	88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115	82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115	85.8	70 to 130	4.33	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-12 DUP

Laboratory ID Number: AZ03206

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AZ03207

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	J	0.00272	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01		0.286	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1		0.112	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5		73.1	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25		317	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1		5.89	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	J	0.0678	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		10	5.00	10		113	mg/L

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AZ03207

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS Limit	Rec		Prec Limit	
				Limit	Spike					Rec	Limit		
AZ03212	Cobalt, Total	mg/L	0.0000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115	89.0	70 to 130	4.40	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115	91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115	88.2	70 to 130	2.97	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15	95.9	70 to 130	0.619	20
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115	75.6	70 to 130	5.51	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115	76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115	90.8	70 to 130	4.05	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115	88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115	82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115	85.8	70 to 130	4.33	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75	92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23	101	70 to 130	0.795	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046	96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115	93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115	84.4	70 to 130	4.66	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AZ03207

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AZ03208

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	J 0.00333	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.265	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/8/2019	EPA 200.7		2.03	0.02	0.1	0.105	mg/L
* Calcium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.1	0.5	41.3	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/8/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	208	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	6.24	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	0.107	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	16.8	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AZ03208

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
				Limit	Spike				Limit	Rec	Limit	Prec		
AZ03212	Cobalt, Total	mg/L	0.0000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115		89.0	70 to 130	4.40	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115		91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115		88.2	70 to 130	2.97	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046		96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115		93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115		84.4	70 to 130	4.66	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115		76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115		90.8	70 to 130	4.05	20
AZ03208	Calcium, Total	mg/L	0.00742	0.22	5.00	46.0	45.5	4.99	4.25 to 5.75		92.8	70 to 130	1.14	20
AZ03208	Lithium, Total	mg/L	-0.0000284	0.022	0.20	0.203	0.205	0.196	0.17 to 0.23		101	70 to 130	0.795	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115		88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115		82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115		85.8	70 to 130	4.33	20
AZ03208	Boron, Total	mg/L	0.00164	0.044	1.00	1.06	1.07	0.966	0.85 to 1.15		95.9	70 to 130	0.619	20
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115		75.6	70 to 130	5.51	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AZ03208

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03208	Chloride	mg/L	-0.0286	0.50	10.0	17.3	6.23	10.2	9 to 11	111	80 to 120	0.160	20
AZ03208	Sulfate	mg/L	-0.0326	0.50	20.0	35.8	16.9	19.2	18 to 22	95.0	80 to 120	0.593	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5
AZ03208	Fluoride	mg/L	0.0283	0.05	2.50	2.65	0.0956	2.60	2.25 to 2.75	102	80 to 120	11.3	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AZ03209

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	J	0.00325	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01		0.226	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/19/2019	EPA 200.7		2.03	0.02	0.1	J	0.0586	mg/L
* Calcium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.1	0.5		55.0	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	J	0.00232	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25		212	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1		5.84	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1		9.53	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AZ03209

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115	75.6	70 to 130	5.51	20
AZ03212	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115	89.0	70 to 130	4.40	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115	91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115	88.2	70 to 130	2.97	20
AZ03215	Boron, Total	mg/L	0.00286	0.044	1.00	0.975	0.991	0.992	0.85 to 1.15	97.5	70 to 130	1.64	20
AZ03215	Lithium, Total	mg/L	-0.0000490	0.022	0.20	0.198	0.202	0.198	0.17 to 0.23	99.2	70 to 130	1.59	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115	76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115	90.8	70 to 130	4.05	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046	96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115	93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115	84.4	70 to 130	4.66	20
AZ03215	Calcium, Total	mg/L	-0.00111	0.22	5.00	4.98	5.06	5.08	4.25 to 5.75	99.6	70 to 130	1.55	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115	88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115	82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115	85.8	70 to 130	4.33	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AZ03209

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ03215	Sulfate	mg/L	-0.194	0.50	20.0	19.5	-0.206	19.9	18 to 22	97.5	80 to 120	0.00	20
AZ03215	Chloride	mg/L	0.0152	0.50	10.0	9.69	0.191	10.2	9 to 11	96.9	80 to 120	0.00	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5
AZ03215	Fluoride	mg/L	-0.144	0.05	2.50	2.59	-0.145	2.72	2.25 to 2.75	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AZ03210

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.128	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/19/2019	EPA 200.7		2.03	0.02	0.1	J 0.0627	mg/L
* Calcium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.1	0.5	34.9	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	151	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	7.26	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	17.0	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AZ03210

Sample	Analysis	Units	MB	MB		MS	MSD	LCS	LCS		Rec		Prec
				Limit	Spike				Limit	Rec	Limit	Prec	
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115	75.6	70 to 130	5.51	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046	96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115	93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115	84.4	70 to 130	4.66	20
AZ03215	Calcium, Total	mg/L	-0.00111	0.22	5.00	4.98	5.06	5.08	4.25 to 5.75	99.6	70 to 130	1.55	20
AZ03212	Barium, Total	mg/L	-0.0000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115	76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.0000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115	90.8	70 to 130	4.05	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115	88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115	82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115	85.8	70 to 130	4.33	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115	91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115	88.2	70 to 130	2.97	20
AZ03215	Boron, Total	mg/L	0.00286	0.044	1.00	0.975	0.991	0.992	0.85 to 1.15	97.5	70 to 130	1.64	20
AZ03215	Lithium, Total	mg/L	-0.0000490	0.022	0.20	0.198	0.202	0.198	0.17 to 0.23	99.2	70 to 130	1.59	20
AZ03212	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115	89.0	70 to 130	4.40	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AZ03210

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03215	Chloride	mg/L	0.0152	0.50	10.0	9.69	0.191	10.2	9 to 11	96.9	80 to 120	0.00	20
AZ03215	Sulfate	mg/L	-0.194	0.50	20.0	19.5	-0.206	19.9	18 to 22	97.5	80 to 120	0.00	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5
AZ03215	Fluoride	mg/L	-0.144	0.05	2.50	2.59	-0.145	2.72	2.25 to 2.75	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
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 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AZ03211

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.0685	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/19/2019	EPA 200.7		2.03	0.02	0.1	J 0.0733	mg/L
* Calcium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.1	0.5	16.4	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	108	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1			02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	6.84	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	10.8	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AZ03211

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AZ03212	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115	89.0	70 to 130	4.40	20
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115	75.6	70 to 130	5.51	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115	76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115	90.8	70 to 130	4.05	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115	88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115	82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115	85.8	70 to 130	4.33	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115	91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115	88.2	70 to 130	2.97	20
AZ03215	Boron, Total	mg/L	0.00286	0.044	1.00	0.975	0.991	0.992	0.85 to 1.15	97.5	70 to 130	1.64	20
AZ03215	Lithium, Total	mg/L	-0.0000490	0.022	0.20	0.198	0.202	0.198	0.17 to 0.23	99.2	70 to 130	1.59	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046	96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115	93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115	84.4	70 to 130	4.66	20
AZ03215	Calcium, Total	mg/L	-0.00111	0.22	5.00	4.98	5.06	5.08	4.25 to 5.75	99.6	70 to 130	1.55	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AZ03211

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03215	Chloride	mg/L	0.0152	0.50	10.0	9.69	0.191	10.2	9 to 11	96.9	80 to 120	0.00	20
AZ03215	Sulfate	mg/L	-0.194	0.50	20.0	19.5	-0.206	19.9	18 to 22	97.5	80 to 120	0.00	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5
AZ03215	Fluoride	mg/L	-0.144	0.05	2.50	2.59	-0.145	2.72	2.25 to 2.75	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAPFB
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ03212

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/19/2019	EPA 200.7		2.03	0.02	0.1	U	Not Detected	mg/L
* Calcium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.1	0.5	U	Not Detected	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	U	Not Detected	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/15/2019	SM 2540C		1		25	U	Not Detected	mg/L
Filter Completion Date	CRB	2/8/2019	SM 2540C		1				02/08/2019	Date
* Chloride	JCC	2/13/2019	SM4500Cl E		1	0.50	1	U	Not Detected	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	U	Not Detected	mg/L

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Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAPFB
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ03212

Sample	Analysis	Units	MB		Spike	MS	MSD	LCS	LCS		Rec		Prec	Limit
			Limit	MB					Limit	Rec	Limit	Prec		
AZ03212	Antimony, Total	mg/L	0.000274	0.00176	0.10	0.0756	0.0799	0.0947	0.085 to 0.115		75.6	70 to 130	5.51	20
AZ03212	Cobalt, Total	mg/L	0.00000453	0.0044	0.10	0.0890	0.0930	0.102	0.085 to 0.115		89.0	70 to 130	4.40	20
AZ03212	Beryllium, Total	mg/L	0.0000242	0.00132	0.10	0.0917	0.0939	0.104	0.085 to 0.115		91.7	70 to 130	2.36	20
AZ03212	Lead, Total	mg/L	0.0000193	0.0022	0.10	0.0882	0.0909	0.0934	0.085 to 0.115		88.2	70 to 130	2.97	20
AZ03212	Mercury, Total by CVAA	mg/L	0.0000336	0.0005	0.004	0.00388	0.00391	0.00388	0.0034 to 0.0046		96.9	70 to 130	0.935	20
AZ03212	Molybdenum, Total	mg/L	0.0000241	0.0044	0.10	0.0935	0.0977	0.103	0.085 to 0.115		93.5	70 to 130	4.30	20
AZ03212	Selenium, Total	mg/L	0.0000416	0.0044	0.10	0.0844	0.0884	0.111	0.085 to 0.115		84.4	70 to 130	4.66	20
AZ03215	Calcium, Total	mg/L	-0.00111	0.22	5.00	4.98	5.06	5.08	4.25 to 5.75		99.6	70 to 130	1.55	20
AZ03212	Barium, Total	mg/L	-0.00000868	0.0044	0.10	0.0769	0.0818	0.0910	0.085 to 0.115		76.9	70 to 130	6.17	20
AZ03212	Thallium, Total	mg/L	0.00000463	0.00044	0.10	0.0908	0.0945	0.0959	0.085 to 0.115		90.8	70 to 130	4.05	20
AZ03212	Arsenic, Total	mg/L	0.0000186	0.0022	0.10	0.0882	0.0922	0.110	0.085 to 0.115		88.2	70 to 130	4.45	20
AZ03212	Cadmium, Total	mg/L	0.00000220	0.00066	0.10	0.0823	0.0858	0.0968	0.085 to 0.115		82.3	70 to 130	4.14	20
AZ03212	Chromium, Total	mg/L	0.0000641	0.0044	0.10	0.0858	0.0896	0.0960	0.085 to 0.115		85.8	70 to 130	4.33	20
AZ03215	Boron, Total	mg/L	0.00286	0.044	1.00	0.975	0.991	0.992	0.85 to 1.15		97.5	70 to 130	1.64	20
AZ03215	Lithium, Total	mg/L	-0.0000490	0.022	0.20	0.198	0.202	0.198	0.17 to 0.23		99.2	70 to 130	1.59	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAPFB
 Sample Date: 06-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ03212

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03215	Chloride	mg/L	0.0152	0.50	10.0	9.69	0.191	10.2	9 to 11	96.9	80 to 120	0.00	20
AZ03215	Sulfate	mg/L	-0.194	0.50	20.0	19.5	-0.206	19.9	18 to 22	97.5	80 to 120	0.00	20
AZ03211	Solids, Dissolved	mg/L	1.00	25			109	54.0	40 to 60			0.461	5
AZ03215	Fluoride	mg/L	-0.144	0.05	2.50	2.59	-0.145	2.72	2.25 to 2.75	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AZ03213

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.0280	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/19/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.1	0.5	3.75	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	J 0.00181	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/14/2019	SM 2540C		1		25	32.7	mg/L
Filter Completion Date	CRB	2/10/2019	SM 2540C		1			02/10/2019	Date
* Chloride	JCC	2/13/2019	SM4500CI E		1	0.50	1	4.15	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	1.69	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AZ03213

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec	Prec Limit	
			MB	Limit					Rec	Limit			
AZ03215	Cadmium, Total	mg/L	0.000000458	0.00066	0.10	0.0887	0.0816	0.0985	0.085 to 0.115	88.7	70 to 130	8.44	20
AZ03215	Cobalt, Total	mg/L	0.00000329	0.0044	0.10	0.0949	0.0871	0.104	0.085 to 0.115	94.9	70 to 130	8.51	20
AZ03215	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.0911	0.0857	0.0965	0.085 to 0.115	91.1	70 to 130	6.16	20
AZ03215	Calcium, Total	mg/L	-0.00111	0.22	5.00	4.98	5.06	5.08	4.25 to 5.75	99.6	70 to 130	1.55	20
AZ03215	Antimony, Total	mg/L	0.000355	0.00176	0.10	0.0822	0.0755	0.0938	0.085 to 0.115	81.3	70 to 130	8.48	20
AZ03215	Boron, Total	mg/L	0.00286	0.044	1.00	0.975	0.991	0.992	0.85 to 1.15	97.5	70 to 130	1.64	20
AZ03215	Chromium, Total	mg/L	0.0000523	0.0044	0.10	0.0922	0.0846	0.0994	0.085 to 0.115	92.2	70 to 130	8.59	20
AZ03215	Lithium, Total	mg/L	-0.0000490	0.022	0.20	0.198	0.202	0.198	0.17 to 0.23	99.2	70 to 130	1.59	20
AZ03215	Barium, Total	mg/L	-0.0000159	0.0044	0.10	0.0837	0.0769	0.0915	0.085 to 0.115	83.7	70 to 130	8.46	20
AZ03215	Beryllium, Total	mg/L	0.0000144	0.00132	0.10	0.0957	0.0907	0.108	0.085 to 0.115	95.7	70 to 130	5.32	20
AZ03215	Selenium, Total	mg/L	-0.00000285	0.0044	0.10	0.0912	0.0838	0.103	0.085 to 0.115	91.2	70 to 130	8.44	20
AZ03215	Arsenic, Total	mg/L	0.0000152	0.0022	0.10	0.0949	0.0868	0.102	0.085 to 0.115	94.9	70 to 130	8.87	20
AZ03215	Mercury, Total by CVAA	mg/L	0.0000343	0.0005	0.004	0.00389	0.00391	0.00383	0.0034 to 0.0046	97.3	70 to 130	0.356	20
AZ03215	Molybdenum, Total	mg/L	0.0000298	0.0044	0.10	0.100	0.0923	0.106	0.085 to 0.115	100	70 to 130	8.13	20
AZ03215	Thallium, Total	mg/L	0.00000233	0.00044	0.10	0.0970	0.0895	0.0982	0.085 to 0.115	97.0	70 to 130	8.04	20

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AZ03213

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample Duplicate	LCS	LCS Limit	Rec	Rec Limit	Prec	Prec Limit
AZ03214	Solids, Dissolved	mg/L	-1.00	25			39.3	55.0	40 to 60			4.07	5
AZ03215	Chloride	mg/L	0.0152	0.50	10.0	9.69	0.191	10.2	9 to 11	96.9	80 to 120	0.00	20
AZ03215	Fluoride	mg/L	-0.144	0.05	2.50	2.59	-0.145	2.72	2.25 to 2.75	104	80 to 120	0.00	20
AZ03215	Sulfate	mg/L	-0.194	0.50	20.0	19.5	-0.206	19.9	18 to 22	97.5	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AZ03214

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	0.0602	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U Not Detected	mg/L
* Boron, Total	GAS	2/19/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.1	0.5	2.89	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	J 0.00114	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U Not Detected	mg/L
* Lithium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.01	0.02	U Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	2/14/2019	SM 2540C		1		25	42.7	mg/L
Filter Completion Date	CRB	2/10/2019	SM 2540C		1			02/10/2019	Date
* Chloride	JCC	2/13/2019	SM4500Cl E		1	0.50	1	3.72	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	J 0.639	mg/L

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AZ03214

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS Limit	Rec		Prec Limit		
			MB	Limit					Rec	Limit			
AZ03215	Cobalt, Total	mg/L	0.00000329	0.0044	0.10	0.0949	0.0871	0.104	0.085 to 0.115	94.9	70 to 130	8.51	20
AZ03215	Cadmium, Total	mg/L	0.000000458	0.00066	0.10	0.0887	0.0816	0.0985	0.085 to 0.115	88.7	70 to 130	8.44	20
AZ03215	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.0911	0.0857	0.0965	0.085 to 0.115	91.1	70 to 130	6.16	20
AZ03215	Boron, Total	mg/L	0.00286	0.044	1.00	0.975	0.991	0.992	0.85 to 1.15	97.5	70 to 130	1.64	20
AZ03215	Chromium, Total	mg/L	0.0000523	0.0044	0.10	0.0922	0.0846	0.0994	0.085 to 0.115	92.2	70 to 130	8.59	20
AZ03215	Lithium, Total	mg/L	-0.0000490	0.022	0.20	0.198	0.202	0.198	0.17 to 0.23	99.2	70 to 130	1.59	20
AZ03215	Calcium, Total	mg/L	-0.00111	0.22	5.00	4.98	5.06	5.08	4.25 to 5.75	99.6	70 to 130	1.55	20
AZ03215	Antimony, Total	mg/L	0.000355	0.00176	0.10	0.0822	0.0755	0.0938	0.085 to 0.115	81.3	70 to 130	8.48	20
AZ03215	Barium, Total	mg/L	-0.0000159	0.0044	0.10	0.0837	0.0769	0.0915	0.085 to 0.115	83.7	70 to 130	8.46	20
AZ03215	Beryllium, Total	mg/L	0.0000144	0.00132	0.10	0.0957	0.0907	0.108	0.085 to 0.115	95.7	70 to 130	5.32	20
AZ03215	Selenium, Total	mg/L	-0.00000285	0.0044	0.10	0.0912	0.0838	0.103	0.085 to 0.115	91.2	70 to 130	8.44	20
AZ03215	Arsenic, Total	mg/L	0.0000152	0.0022	0.10	0.0949	0.0868	0.102	0.085 to 0.115	94.9	70 to 130	8.87	20
AZ03215	Mercury, Total by CVAA	mg/L	0.0000343	0.0005	0.004	0.00389	0.00391	0.00383	0.0034 to 0.0046	97.3	70 to 130	0.356	20
AZ03215	Molybdenum, Total	mg/L	0.0000298	0.0044	0.10	0.100	0.0923	0.106	0.085 to 0.115	100	70 to 130	8.13	20
AZ03215	Thallium, Total	mg/L	0.00000233	0.00044	0.10	0.0970	0.0895	0.0982	0.085 to 0.115	97.0	70 to 130	8.04	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAP
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AZ03214

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ03215	Sulfate	mg/L	-0.194	0.50	20.0	19.5	-0.206	19.9	18 to 22	97.5	80 to 120	0.00	20
AZ03215	Chloride	mg/L	0.0152	0.50	10.0	9.69	0.191	10.2	9 to 11	96.9	80 to 120	0.00	20
AZ03214	Solids, Dissolved	mg/L	-1.00	25			39.3	55.0	40 to 60			4.07	5
AZ03215	Fluoride	mg/L	-0.144	0.05	2.50	2.59	-0.145	2.72	2.25 to 2.75	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Reported: 3/25/2019
 Version: 2.0

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAPEB
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ03215

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q	Results	Units
Metals, Cyanide, Total Phenols										
* Arsenic, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Barium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Beryllium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0006	0.003	U	Not Detected	mg/L
* Boron, Total	GAS	2/19/2019	EPA 200.7		2.03	0.02	0.1	U	Not Detected	mg/L
* Calcium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.1	0.5	U	Not Detected	mg/L
* Cadmium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0003	0.001	U	Not Detected	mg/L
* Antimony, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0008	0.003	J	0.000904	mg/L
* Cobalt, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.005	U	Not Detected	mg/L
* Chromium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Mercury, Total by CVAA	ABB	2/12/2019	EPA 245.1		1	0.0003	0.0005	U	Not Detected	mg/L
* Lithium, Total	GAS	2/19/2019	EPA 200.7		2.03	0.01	0.02	U	Not Detected	mg/L
* Molybdenum, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Lead, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.001	0.005	U	Not Detected	mg/L
* Selenium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.002	0.01	U	Not Detected	mg/L
* Thallium, Total	DLJ	2/14/2019	EPA 200.8		5.075	0.0002	0.001	U	Not Detected	mg/L
General Characteristics										
* Solids, Dissolved	CRB	2/14/2019	SM 2540C		1		25	U	Not Detected	mg/L
Filter Completion Date	CRB	2/10/2019	SM 2540C		1				02/10/2019	Date
* Chloride	JCC	2/13/2019	SM4500Cl E		1	0.50	1	U	Not Detected	mg/L
* Fluoride	JCC	2/13/2019	SM4500F C		1	0.05	0.1	U	Not Detected	mg/L
* Sulfate	JCC	2/15/2019	SM4500SO4 E		1	0.50	1	U	Not Detected	mg/L

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAPEB
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ03215

Sample	Analysis	Units	MB		MS	MSD	LCS	LCS		Rec		Prec	Limit
			MB	Limit				Limit	Rec	Limit	Prec		
AZ03215	Cobalt, Total	mg/L	0.00000329	0.0044	0.10	0.0949	0.0871	0.104	0.085 to 0.115	94.9	70 to 130	8.51	20
AZ03215	Cadmium, Total	mg/L	0.000000458	0.00066	0.10	0.0887	0.0816	0.0985	0.085 to 0.115	88.7	70 to 130	8.44	20
AZ03215	Lead, Total	mg/L	0.0000107	0.0022	0.10	0.0911	0.0857	0.0965	0.085 to 0.115	91.1	70 to 130	6.16	20
AZ03215	Calcium, Total	mg/L	-0.00111	0.22	5.00	4.98	5.06	5.08	4.25 to 5.75	99.6	70 to 130	1.55	20
AZ03215	Antimony, Total	mg/L	0.000355	0.00176	0.10	0.0822	0.0755	0.0938	0.085 to 0.115	81.3	70 to 130	8.48	20
AZ03215	Arsenic, Total	mg/L	0.0000152	0.0022	0.10	0.0949	0.0868	0.102	0.085 to 0.115	94.9	70 to 130	8.87	20
AZ03215	Mercury, Total by CVAA	mg/L	0.0000343	0.0005	0.004	0.00389	0.00391	0.00383	0.0034 to 0.0046	97.3	70 to 130	0.356	20
AZ03215	Molybdenum, Total	mg/L	0.0000298	0.0044	0.10	0.100	0.0923	0.106	0.085 to 0.115	100	70 to 130	8.13	20
AZ03215	Thallium, Total	mg/L	0.00000233	0.00044	0.10	0.0970	0.0895	0.0982	0.085 to 0.115	97.0	70 to 130	8.04	20
AZ03215	Barium, Total	mg/L	-0.0000159	0.0044	0.10	0.0837	0.0769	0.0915	0.085 to 0.115	83.7	70 to 130	8.46	20
AZ03215	Beryllium, Total	mg/L	0.0000144	0.00132	0.10	0.0957	0.0907	0.108	0.085 to 0.115	95.7	70 to 130	5.32	20
AZ03215	Selenium, Total	mg/L	-0.00000285	0.0044	0.10	0.0912	0.0838	0.103	0.085 to 0.115	91.2	70 to 130	8.44	20
AZ03215	Boron, Total	mg/L	0.00286	0.044	1.00	0.975	0.991	0.992	0.85 to 1.15	97.5	70 to 130	1.64	20
AZ03215	Chromium, Total	mg/L	0.0000523	0.0044	0.10	0.0922	0.0846	0.0994	0.085 to 0.115	92.2	70 to 130	8.59	20
AZ03215	Lithium, Total	mg/L	-0.0000490	0.022	0.20	0.198	0.202	0.198	0.17 to 0.23	99.2	70 to 130	1.59	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer
 COREY LADNER

Customer Account: WMWGADAPEB
 Sample Date: 07-Feb-19
 Customer ID:
 Delivery Date: 07-Feb-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ03215

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ03215	Chloride	mg/L	0.0152	0.50	10.0	9.69	0.191	10.2	9 to 11	96.9	80 to 120	0.00	20
AZ03215	Sulfate	mg/L	-0.194	0.50	20.0	19.5	-0.206	19.9	18 to 22	97.5	80 to 120	0.00	20
AZ03214	Solids, Dissolved	mg/L	-1.00	25			39.3	55.0	40 to 60			4.07	5
AZ03215	Fluoride	mg/L	-0.144	0.05	2.50	2.59	-0.145	2.72	2.25 to 2.75	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Reported: 3/25/2019
 Version: 2.0

Definitions



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
BA	Analyte found in reagent blank is = RL AND is > 1/10 the amount of the sample.
C	Analyte was verified by re-analysis.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
E	Estimated reported value exceeded calibration range.
F	Water Field Group (WFG) qualifier; see comments for more information
FA	Field results were reviewed by the Water Field Group.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
J	Reported value is an estimate because concentration is less than reporting limit.
K	No MB or LCS were submitted with the sample for dissolved analysis.
L	Check standard is outside of specification limit.
LA	Analyte recovery in the check standard was above specification limit. Results may be biased high.
LL	Analyte recovery in the check standard was below specification limit. Results may be biased low.
M	LOQ verification analyzed with batch was outside of specification limit.
N	Organic constituents tentatively identified. Confirmation is needed.
P	Precision is out of specification limit.
R	Matrix spike recovery or matrix spike duplicate recovery is outside of specification limit.
RA	Matrix spike is invalid due to sample concentration.
S	Surrogate recovery is outside of specification limit.
T	Sample temperature is outside of specification limit.
U	Compound was analyzed, but not detected.



Chain of Custody

Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA **02/07/2019 15:00**

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer, Corey Ladner
Site Representative	Gerson Pickett	Requested By	Corey Ladner
Collector	Ben Rothschild	Location	Gadsden Ash Pond

Bottles	1	Metals	500 mL	3	TDS	500 mL	5	N/A	N/A	7	N/A	N/A
	2	Hg	250 mL	4	Anions	250 mL	6	N/A	N/A	8	N/A	N/A

Comments: Anions are performed in-house. LBM 02/07/2019

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-3	2/5/19	09:11	4	Groundwater		AZ03199
MW-4	02/05/2019	10:55	4	Groundwater		AZ03200
MW-2	02/05/2019	12:47	4	Groundwater		AZ03201
PZ-1	02/05/2019	14:05	4	Groundwater		AZ03202
MW-6	02/05/2019	15:09	4	Groundwater		AZ03203
MW-6 DUP	02/05/2019	15:09	4	Sample Duplicate		AZ03204
MW-12	02/06/2019	09:48	4	Groundwater		AZ03205
MW-12 DUP	02/06/2019	09:48	4	Sample Duplicate		AZ03206
MW-11	02/06/2019	11:33	4	Groundwater		AZ03207
MW-10	02/06/2019	12:51	4	Groundwater		AZ03208
MW-8	02/06/2019	14:08	4	Groundwater		AZ03209
MW-9	02/06/2019	15:21	4	Groundwater		AZ03210
MW-7	02/06/2019	16:32	4	Groundwater		AZ03211
FB-2	02/06/2019	16:50	4	Field Blank		AZ03212
PZ-6	02/07/2019	10:00	4	Groundwater		AZ03213
PZ-5	02/07/2019	10:58	4	Groundwater		AZ03214
EB-1	02/07/2019	11:20	4	Equipment Blank		AZ03215

Relinquished By	Received By	Date/Time
		02/07/2019 15:00

SmarTroll ID	6496-34170-1-1	All metals and radiological bottles have pH < 2 <input checked="" type="checkbox"/>
Turbidity ID	6754-35564-10-1	
Sample Event	1203	
Cooler Temp	0.4 degrees C	
Thermometer ID	5408-27568-2-2	
pH Strip ID	7114-38608-1-1	



Chain of Custody

Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA 02/07/2019 15:00

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer, Corey Ladner
Site Representative	Gerson Pickett	Requested By	Corey Ladner
Collector	Ben Rothschild	Location	Gadsden Ash Pond

Bottles	1	Radium	1 L	3	N/A	N/A	5	N/A	N/A	7	N/A	N/A
	2	N/A	N/A	4	N/A	N/A	6	N/A	N/A	8	N/A	N/A

Comments Radium Duplicate Collected at PZ-1 and MW-8. Anions are performed in-house. LBM 2/7/19
 Correcting bottle count for Radium Duplicate. LBM 3/21/19

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
MW-3	2/5/19	09:11	1	Groundwater		AZ03216
MW-4	02/05/2019	10:55	1	Groundwater		AZ03217
MW-2	02/05/2019	12:47	1	Groundwater		AZ03218
PZ-1	02/05/2019	14:05	3	Groundwater		AZ03219
MW-6	02/05/2019	15:09	1	Groundwater		AZ03220
MW-6 DUP	02/05/2019	15:09	1	Sample Duplicate		AZ03221
MW-12	02/06/2019	09:48	1	Groundwater		AZ03222
MW-12 DUP	02/06/2019	09:48	1	Sample Duplicate		AZ03223
MW-11	02/06/2019	11:33	1	Groundwater		AZ03224
MW-10	02/06/2019	12:51	1	Groundwater		AZ03225
MW-8	02/06/2019	14:08	3	Groundwater		AZ03226
MW-9	02/06/2019	15:21	1	Groundwater		AZ03227
MW-7	02/06/2019	16:32	1	Groundwater		AZ03228
FB-2	02/06/2019	16:50	1	Field Blank		AZ03229
PZ-6	02/07/2019	10:00	1	Groundwater		AZ03230
PZ-5	02/07/2019	10:58	1	Groundwater		AZ03231
EB-1	02/07/2019	11:20	1	Equipment Blank		AZ03232

Relinquished By	Received By	Date/Time
		02/07/2019 14:59

SmarTroll ID	6496-34170-1-1	All metals and radiological bottles have pH < 2 <input checked="" type="checkbox"/>
Turbidity ID	6754-35564-10-1	Cooler Temp
Sample Event	1203	Thermometer ID
		pH Strip ID
		7114-38608-1-1

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pensacola

3355 McLemore Drive

Pensacola, FL 32514

Tel: (850)474-1001

TestAmerica Job ID: 400-165896-1

TestAmerica Sample Delivery Group: Gadsden Ash Pond 1203

Client Project/Site: CCR Plant Gadsden

For:

Alabama Power General Test Laboratory

744 County Rd 87

GSC #8

Calera, Alabama 35040

Attn: Laura Midkiff



Authorized for release by:

3/13/2019 10:39:33 AM

Mark Swafford, Project Manager I

(850)471-6207

mark.swafford@testamericainc.com

Designee for

Cheyenne Whitmire, Project Manager II

(850)471-6222

cheyenne.whitmire@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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
SDG: Gadsden Ash Pond 1203

Job ID: 400-165896-1

Laboratory: TestAmerica Pensacola

Narrative

Job Narrative 400-165896-1

RAD

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-415085: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

AZ02977 MW-16 (400-165896-1), AZ02978 MW-17 (400-165896-2), AZ02979 MW-14 (400-165896-3), AZ02980 MW-5 (400-165896-4), AZ02981 MW-1 (400-165896-5), AZ02982 FB-1 (400-165896-6), AZ03216 MW-3 (400-165896-7), AZ03217 MW-4 (400-165896-8), AZ03218 MW-2 (400-165896-9), AZ03219 PZ-1 (400-165896-10), AZ03219 PZ-1 (400-165896-10[DUJ]), AZ03220 MW-6 (400-165896-11), (LCS 160-415085/1-A) and (MB 160-415085/24-A)

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-415085: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

AZ02977 MW-16 (400-165896-1), AZ02978 MW-17 (400-165896-2), AZ02979 MW-14 (400-165896-3), AZ02980 MW-5 (400-165896-4), AZ02981 MW-1 (400-165896-5), AZ02982 FB-1 (400-165896-6), AZ03216 MW-3 (400-165896-7), AZ03217 MW-4 (400-165896-8), AZ03218 MW-2 (400-165896-9), AZ03219 PZ-1 (400-165896-10), AZ03219 PZ-1 (400-165896-10[DUJ]), AZ03220 MW-6 (400-165896-11), (LCS 160-415085/1-A) and (MB 160-415085/24-A)

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-415094: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

AZ03221 MW-6 DUP (400-165896-12), AZ03222 MW-12 (400-165896-13), AZ03223 MW-12 DUP (400-165896-14), AZ03224 MW-11 (400-165896-15), AZ03225 MW-10 (400-165896-16), AZ03226 MW-8 (400-165896-17), AZ03226 MW-8 (400-165896-17[DUJ]), AZ03227 MW-9 (400-165896-18), AZ03228 MW-7 (400-165896-19), AZ03229 FB-2 (400-165896-20), AZ03230 PZ-6 (400-165896-21), AZ03231 PZ-5 (400-165896-22), AZ03232 EB-1 (400-165896-23), (LCS 160-415094/1-A) and (MB 160-415094/23-A)

Method(s) 903.0, 9315: Ra-226 Prep Batch 160-415094: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

AZ03221 MW-6 DUP (400-165896-12), AZ03222 MW-12 (400-165896-13), AZ03223 MW-12 DUP (400-165896-14), AZ03224 MW-11 (400-165896-15), AZ03225 MW-10 (400-165896-16), AZ03226 MW-8 (400-165896-17), AZ03226 MW-8 (400-165896-17[DUJ]), AZ03227 MW-9 (400-165896-18), AZ03228 MW-7 (400-165896-19), AZ03229 FB-2 (400-165896-20), AZ03230 PZ-6 (400-165896-21), AZ03231 PZ-5 (400-165896-22), AZ03232 EB-1 (400-165896-23), (LCS 160-415094/1-A) and (MB 160-415094/23-A)

Method(s) 904.0, 9320: Radium-228 Prep Batch 160-415101: Radiochemistry sample results are reported with the count date/time applied as the Activity Reference Date.

AZ03221 MW-6 DUP (400-165896-12), AZ03222 MW-12 (400-165896-13), AZ03223 MW-12 DUP (400-165896-14), AZ03224 MW-11 (400-165896-15), AZ03225 MW-10 (400-165896-16), AZ03226 MW-8 (400-165896-17), AZ03226 MW-8 (400-165896-17[DUJ]), AZ03227 MW-9 (400-165896-18), AZ03228 MW-7 (400-165896-19), AZ03229 FB-2 (400-165896-20), AZ03230 PZ-6 (400-165896-21), AZ03231 PZ-5 (400-165896-22), AZ03232 EB-1 (400-165896-23), (LCS 160-415101/1-A) and (MB 160-415101/23-A)

Method(s) 904.0, 9320: Radium-228 Prep Batch 160-415101: Any minimum detectable concentration (MDC), critical value (DLC), or Safe Drinking Water Act detection limit (SDWA DL) is sample-specific unless otherwise stated elsewhere in this narrative.

AZ03221 MW-6 DUP (400-165896-12), AZ03222 MW-12 (400-165896-13), AZ03223 MW-12 DUP (400-165896-14), AZ03224 MW-11 (400-165896-15), AZ03225 MW-10 (400-165896-16), AZ03226 MW-8 (400-165896-17), AZ03226 MW-8 (400-165896-17[DUJ]), AZ03227 MW-9 (400-165896-18), AZ03228 MW-7 (400-165896-19), AZ03229 FB-2 (400-165896-20), AZ03230 PZ-6 (400-165896-21), AZ03231 PZ-5 (400-165896-22), AZ03232 EB-1 (400-165896-23), (LCS 160-415101/1-A) and (MB 160-415101/23-A)

Method(s) PrecSep_0: Radium 228 Prep Batch 160-415086: The following samples were prepared at a reduced aliquot due to limited sample volume: AZ02977 MW-16 (400-165896-1), AZ02978 MW-17 (400-165896-2), AZ02979 MW-14 (400-165896-3), AZ02980 MW-5 (400-165896-4), AZ02981 MW-1 (400-165896-5), AZ02982 FB-1 (400-165896-6), AZ03216 MW-3 (400-165896-7), AZ03217 MW-4

Case Narrative

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
SDG: Gadsden Ash Pond 1203

Job ID: 400-165896-1 (Continued)

Laboratory: TestAmerica Pensacola (Continued)

(400-165896-8), AZ03218 MW-2 (400-165896-9), AZ03219 PZ-1 (400-165896-10), AZ03219 PZ-1 (400-165896-10[DUJ]) and AZ03220 MW-6 (400-165896-11).

Method(s) PrecSep_0: Radium 228 Prep Batch 160-415101: The following samples were prepared at a reduced aliquot due to limited sample volume: AZ03221 MW-6 DUP (400-165896-12), AZ03222 MW-12 (400-165896-13), AZ03223 MW-12 DUP (400-165896-14), AZ03224 MW-11 (400-165896-15), AZ03225 MW-10 (400-165896-16), AZ03226 MW-8 (400-165896-17), AZ03226 MW-8 (400-165896-17[DUJ]), AZ03227 MW-9 (400-165896-18), AZ03228 MW-7 (400-165896-19), AZ03229 FB-2 (400-165896-20), AZ03230 PZ-6 (400-165896-21), AZ03231 PZ-5 (400-165896-22) and AZ03232 EB-1 (400-165896-23).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-415085: The following samples were prepared at a reduced aliquot due to limited sample volume: AZ02977 MW-16 (400-165896-1), AZ02978 MW-17 (400-165896-2), AZ02979 MW-14 (400-165896-3), AZ02980 MW-5 (400-165896-4), AZ02981 MW-1 (400-165896-5), AZ02982 FB-1 (400-165896-6), AZ03216 MW-3 (400-165896-7), AZ03217 MW-4 (400-165896-8), AZ03218 MW-2 (400-165896-9), AZ03219 PZ-1 (400-165896-10), AZ03219 PZ-1 (400-165896-10[DUJ]) and AZ03220 MW-6 (400-165896-11).

Method(s) PrecSep-21: Radium 226 Prep Batch 160-415094: The following samples were prepared at a reduced aliquot due to limited sample volume: AZ03221 MW-6 DUP (400-165896-12), AZ03222 MW-12 (400-165896-13), AZ03223 MW-12 DUP (400-165896-14), AZ03224 MW-11 (400-165896-15), AZ03225 MW-10 (400-165896-16), AZ03226 MW-8 (400-165896-17), AZ03226 MW-8 (400-165896-17[DUJ]), AZ03227 MW-9 (400-165896-18), AZ03228 MW-7 (400-165896-19), AZ03229 FB-2 (400-165896-20), AZ03230 PZ-6 (400-165896-21), AZ03231 PZ-5 (400-165896-22) and AZ03232 EB-1 (400-165896-23).

Method Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
SDG: Gadsden Ash Pond 1203

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: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
SDG: Gadsden Ash Pond 1203

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
400-165896-1	AZ02977 MW-16	Water	02/05/19 09:52	02/11/19 17:20
400-165896-2	AZ02978 MW-17	Water	02/05/19 11:30	02/11/19 17:20
400-165896-3	AZ02979 MW-14	Water	02/05/19 13:23	02/11/19 17:20
400-165896-4	AZ02980 MW-5	Water	02/05/19 14:55	02/11/19 17:20
400-165896-5	AZ02981 MW-1	Water	02/05/19 16:18	02/11/19 17:20
400-165896-6	AZ02982 FB-1	Water	02/05/19 13:35	02/11/19 17:20
400-165896-7	AZ03216 MW-3	Water	02/05/19 09:11	02/11/19 17:20
400-165896-8	AZ03217 MW-4	Water	02/05/19 10:55	02/11/19 17:20
400-165896-9	AZ03218 MW-2	Water	02/05/19 12:47	02/11/19 17:20
400-165896-10	AZ03219 PZ-1	Water	02/05/19 14:05	02/11/19 17:20
400-165896-11	AZ03220 MW-6	Water	02/05/19 15:09	02/11/19 17:20
400-165896-12	AZ03221 MW-6 DUP	Water	02/05/19 15:09	02/11/19 17:20
400-165896-13	AZ03222 MW-12	Water	02/06/19 09:48	02/11/19 17:20
400-165896-14	AZ03223 MW-12 DUP	Water	02/06/19 09:48	02/11/19 17:20
400-165896-15	AZ03224 MW-11	Water	02/06/19 11:33	02/11/19 17:20
400-165896-16	AZ03225 MW-10	Water	02/06/19 12:51	02/11/19 17:20
400-165896-17	AZ03226 MW-8	Water	02/06/19 14:08	02/11/19 17:20
400-165896-18	AZ03227 MW-9	Water	02/06/19 15:21	02/11/19 17:20
400-165896-19	AZ03228 MW-7	Water	02/06/19 16:32	02/11/19 17:20
400-165896-20	AZ03229 FB-2	Water	02/06/19 16:50	02/11/19 17:20
400-165896-21	AZ03230 PZ-6	Water	02/07/19 10:00	02/11/19 17:20
400-165896-22	AZ03231 PZ-5	Water	02/07/19 10:58	02/11/19 17:20
400-165896-23	AZ03232 EB-1	Water	02/07/19 11:20	02/11/19 17:20

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ02977 MW-16

Lab Sample ID: 400-165896-1

Date Collected: 02/05/19 09:52

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.168		0.0925	0.0938	1.00	0.108	pCi/L	02/15/19 07:46	03/12/19 05:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					02/15/19 07:46	03/12/19 05:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.263	U	0.340	0.341	1.00	0.565	pCi/L	02/15/19 08:20	02/28/19 15:52	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.0		40 - 110					02/15/19 08:20	02/28/19 15:52	1
Y Carrier	79.3		40 - 110					02/15/19 08:20	02/28/19 15:52	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.431	U	0.352	0.354	5.00	0.565	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ02978 MW-17

Lab Sample ID: 400-165896-2

Date Collected: 02/05/19 11:30

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0339	U	0.0702	0.0703	1.00	0.128	pCi/L	02/15/19 07:46	03/12/19 05:45	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					02/15/19 07:46	03/12/19 05:45	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.273	U	0.321	0.322	1.00	0.528	pCi/L	02/15/19 08:20	02/28/19 15:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	89.1		40 - 110					02/15/19 08:20	02/28/19 15:53	1
Y Carrier	80.4		40 - 110					02/15/19 08:20	02/28/19 15:53	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.307	U	0.329	0.330	5.00	0.528	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ02979 MW-14
Date Collected: 02/05/19 13:23
Date Received: 02/11/19 17:20

Lab Sample ID: 400-165896-3
Matrix: Water

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.261		0.117	0.119	1.00	0.139	pCi/L	02/15/19 07:46	03/12/19 05:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					02/15/19 07:46	03/12/19 05:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.612		0.338	0.342	1.00	0.499	pCi/L	02/15/19 08:20	02/28/19 15:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	93.8		40 - 110					02/15/19 08:20	02/28/19 15:54	1
Y Carrier	82.2		40 - 110					02/15/19 08:20	02/28/19 15:54	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.873		0.358	0.362	5.00	0.499	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ02980 MW-5

Lab Sample ID: 400-165896-4

Date Collected: 02/05/19 14:55

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.178		0.0959	0.0972	1.00	0.118	pCi/L	02/15/19 07:46	03/12/19 05:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/15/19 07:46	03/12/19 05:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.373	U	0.407	0.408	1.00	0.667	pCi/L	02/15/19 08:20	02/28/19 15:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/15/19 08:20	02/28/19 15:54	1
Y Carrier	72.5		40 - 110					02/15/19 08:20	02/28/19 15:54	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.551	U	0.418	0.419	5.00	0.667	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ02981 MW-1

Lab Sample ID: 400-165896-5

Date Collected: 02/05/19 16:18

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.161		0.0877	0.0889	1.00	0.102	pCi/L	02/15/19 07:46	03/12/19 05:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					02/15/19 07:46	03/12/19 05:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.476	U	0.375	0.378	1.00	0.592	pCi/L	02/15/19 08:20	02/28/19 15:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	94.4		40 - 110					02/15/19 08:20	02/28/19 15:54	1
Y Carrier	74.8		40 - 110					02/15/19 08:20	02/28/19 15:54	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.637		0.385	0.388	5.00	0.592	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ02982 FB-1

Lab Sample ID: 400-165896-6

Date Collected: 02/05/19 13:35

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0318	U	0.0396	0.0397	1.00	0.113	pCi/L	02/15/19 07:46	03/12/19 05:47	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110					02/15/19 07:46	03/12/19 05:47	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.131	U	0.298	0.298	1.00	0.560	pCi/L	02/15/19 08:20	02/28/19 15:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	90.3		40 - 110					02/15/19 08:20	02/28/19 15:54	1
Y Carrier	83.0		40 - 110					02/15/19 08:20	02/28/19 15:54	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.163	U	0.301	0.301	5.00	0.560	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03216 MW-3

Lab Sample ID: 400-165896-7

Date Collected: 02/05/19 09:11

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.172		0.0884	0.0898	1.00	0.0920	pCi/L	02/15/19 07:46	03/12/19 05:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					02/15/19 07:46	03/12/19 05:48	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.127	U	0.361	0.361	1.00	0.624	pCi/L	02/15/19 08:20	02/28/19 15:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.7		40 - 110					02/15/19 08:20	02/28/19 15:54	1
Y Carrier	80.4		40 - 110					02/15/19 08:20	02/28/19 15:54	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.299	U	0.372	0.372	5.00	0.624	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03217 MW-4

Lab Sample ID: 400-165896-8

Date Collected: 02/05/19 10:55

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.372		0.125	0.130	1.00	0.107	pCi/L	02/15/19 07:46	03/12/19 05:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/15/19 07:46	03/12/19 05:48	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0954	U	0.490	0.490	1.00	0.851	pCi/L	02/15/19 08:20	02/28/19 15:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	92.6		40 - 110					02/15/19 08:20	02/28/19 15:55	1
Y Carrier	68.8		40 - 110					02/15/19 08:20	02/28/19 15:55	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.467	U	0.506	0.507	5.00	0.851	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03218 MW-2

Lab Sample ID: 400-165896-9

Date Collected: 02/05/19 12:47

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.121		0.0764	0.0772	1.00	0.0911	pCi/L	02/15/19 07:46	03/12/19 05:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					02/15/19 07:46	03/12/19 05:48	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.967		0.398	0.408	1.00	0.565	pCi/L	02/15/19 08:20	02/28/19 15:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.6		40 - 110					02/15/19 08:20	02/28/19 15:55	1
Y Carrier	83.4		40 - 110					02/15/19 08:20	02/28/19 15:55	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	1.09		0.405	0.415	5.00	0.565	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03219 PZ-1

Lab Sample ID: 400-165896-10

Date Collected: 02/05/19 14:05

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0253	U	0.0580	0.0580	1.00	0.108	pCi/L	02/15/19 07:46	03/12/19 05:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					02/15/19 07:46	03/12/19 05:48	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.248	U	0.409	0.409	1.00	0.688	pCi/L	02/15/19 08:20	02/28/19 15:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	95.3		40 - 110					02/15/19 08:20	02/28/19 15:55	1
Y Carrier	77.0		40 - 110					02/15/19 08:20	02/28/19 15:55	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.274	U	0.413	0.413	5.00	0.688	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03220 MW-6

Lab Sample ID: 400-165896-11

Date Collected: 02/05/19 15:09

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.00892	U	0.0526	0.0526	1.00	0.108	pCi/L	02/15/19 07:46	03/12/19 05:48	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					02/15/19 07:46	03/12/19 05:48	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.187	U	0.354	0.354	1.00	0.602	pCi/L	02/15/19 08:20	02/28/19 15:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	91.4		40 - 110					02/15/19 08:20	02/28/19 15:55	1
Y Carrier	81.5		40 - 110					02/15/19 08:20	02/28/19 15:55	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.196	U	0.358	0.358	5.00	0.602	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03221 MW-6 DUP

Lab Sample ID: 400-165896-12

Date Collected: 02/05/19 15:09

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0151	U	0.0605	0.0605	1.00	0.140	pCi/L	02/15/19 08:52	03/12/19 05:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					02/15/19 08:52	03/12/19 05:53	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.0528	U	0.268	0.268	1.00	0.475	pCi/L	02/15/19 09:44	03/06/19 15:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	96.2		40 - 110					02/15/19 09:44	03/06/19 15:43	1
Y Carrier	85.2		40 - 110					02/15/19 09:44	03/06/19 15:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0377	U	0.275	0.275	5.00	0.475	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03222 MW-12

Lab Sample ID: 400-165896-13

Date Collected: 02/06/19 09:48

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0993	U	0.0881	0.0885	1.00	0.130	pCi/L	02/15/19 08:52	03/12/19 05:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					02/15/19 08:52	03/12/19 05:53	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.123	U	0.318	0.318	1.00	0.584	pCi/L	02/15/19 09:44	03/06/19 15:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.1		40 - 110					02/15/19 09:44	03/06/19 15:43	1
Y Carrier	84.1		40 - 110					02/15/19 09:44	03/06/19 15:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	-0.0241	U	0.330	0.330	5.00	0.584	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03223 MW-12 DUP

Lab Sample ID: 400-165896-14

Date Collected: 02/06/19 09:48

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0991	U	0.0810	0.0815	1.00	0.112	pCi/L	02/15/19 08:52	03/12/19 05:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					02/15/19 08:52	03/12/19 05:53	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.279	U	0.297	0.298	1.00	0.486	pCi/L	02/15/19 09:44	03/06/19 15:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	99.4		40 - 110					02/15/19 09:44	03/06/19 15:43	1
Y Carrier	87.1		40 - 110					02/15/19 09:44	03/06/19 15:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.378	U	0.308	0.309	5.00	0.486	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03224 MW-11

Lab Sample ID: 400-165896-15

Date Collected: 02/06/19 11:33

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.426		0.144	0.149	1.00	0.117	pCi/L	02/15/19 08:52	03/12/19 05:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					02/15/19 08:52	03/12/19 05:53	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.353	U	0.322	0.324	1.00	0.519	pCi/L	02/15/19 09:44	03/06/19 15:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	100		40 - 110					02/15/19 09:44	03/06/19 15:43	1
Y Carrier	87.1		40 - 110					02/15/19 09:44	03/06/19 15:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.779		0.353	0.357	5.00	0.519	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03225 MW-10

Lab Sample ID: 400-165896-16

Date Collected: 02/06/19 12:51

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.273		0.126	0.128	1.00	0.140	pCi/L	02/15/19 08:52	03/12/19 05:53	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/15/19 08:52	03/12/19 05:53	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.264	U	0.282	0.283	1.00	0.461	pCi/L	02/15/19 09:44	03/06/19 15:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/15/19 09:44	03/06/19 15:43	1
Y Carrier	87.5		40 - 110					02/15/19 09:44	03/06/19 15:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.537		0.309	0.311	5.00	0.461	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03226 MW-8

Lab Sample ID: 400-165896-17

Date Collected: 02/06/19 14:08

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.127		0.0882	0.0889	1.00	0.114	pCi/L	02/15/19 08:52	03/12/19 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					02/15/19 08:52	03/12/19 05:54	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.251	U	0.300	0.301	1.00	0.496	pCi/L	02/15/19 09:44	03/06/19 15:43	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	102		40 - 110					02/15/19 09:44	03/06/19 15:43	1
Y Carrier	84.9		40 - 110					02/15/19 09:44	03/06/19 15:43	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.378	U	0.313	0.314	5.00	0.496	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03227 MW-9

Lab Sample ID: 400-165896-18

Date Collected: 02/06/19 15:21

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0572	U	0.0713	0.0715	1.00	0.117	pCi/L	02/15/19 08:52	03/12/19 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					02/15/19 08:52	03/12/19 05:54	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.187	U	0.278	0.278	1.00	0.466	pCi/L	02/15/19 09:44	03/06/19 15:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					02/15/19 09:44	03/06/19 15:44	1
Y Carrier	86.7		40 - 110					02/15/19 09:44	03/06/19 15:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.244	U	0.287	0.287	5.00	0.466	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03228 MW-7

Lab Sample ID: 400-165896-19

Date Collected: 02/06/19 16:32

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.158		0.0973	0.0983	1.00	0.117	pCi/L	02/15/19 08:52	03/12/19 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					02/15/19 08:52	03/12/19 05:54	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0804	U	0.242	0.242	1.00	0.453	pCi/L	02/15/19 09:44	03/06/19 15:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	103		40 - 110					02/15/19 09:44	03/06/19 15:44	1
Y Carrier	87.1		40 - 110					02/15/19 09:44	03/06/19 15:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0774	U	0.261	0.261	5.00	0.453	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03229 FB-2

Lab Sample ID: 400-165896-20

Date Collected: 02/06/19 16:50

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	-0.0330	U	0.0462	0.0463	1.00	0.130	pCi/L	02/15/19 08:52	03/12/19 05:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					02/15/19 08:52	03/12/19 05:54	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.258	U	0.291	0.292	1.00	0.478	pCi/L	02/15/19 09:44	03/06/19 15:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	104		40 - 110					02/15/19 09:44	03/06/19 15:44	1
Y Carrier	87.5		40 - 110					02/15/19 09:44	03/06/19 15:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.225	U	0.295	0.296	5.00	0.478	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03230 PZ-6

Lab Sample ID: 400-165896-21

Date Collected: 02/07/19 10:00

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0879	U	0.0828	0.0832	1.00	0.124	pCi/L	02/15/19 08:52	03/12/19 07:54	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/15/19 08:52	03/12/19 07:54	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.307	U	0.276	0.277	1.00	0.442	pCi/L	02/15/19 09:44	03/06/19 15:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/15/19 09:44	03/06/19 15:44	1
Y Carrier	87.9		40 - 110					02/15/19 09:44	03/06/19 15:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.395	U	0.288	0.289	5.00	0.442	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03231 PZ-5

Lab Sample ID: 400-165896-22

Date Collected: 02/07/19 10:58

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0680	U	0.0820	0.0823	1.00	0.134	pCi/L	02/15/19 08:52	03/12/19 07:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/15/19 08:52	03/12/19 07:55	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0479	U	0.243	0.243	1.00	0.448	pCi/L	02/15/19 09:44	03/06/19 15:44	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	101		40 - 110					02/15/19 09:44	03/06/19 15:44	1
Y Carrier	89.3		40 - 110					02/15/19 09:44	03/06/19 15:44	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0202	U	0.256	0.257	5.00	0.448	pCi/L		03/12/19 18:30	1

Client Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03232 EB-1

Lab Sample ID: 400-165896-23

Date Collected: 02/07/19 11:20

Matrix: Water

Date Received: 02/11/19 17:20

Method: 9315 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.0892	U	0.0859	0.0863	1.00	0.131	pCi/L	02/15/19 08:52	03/12/19 07:55	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110					02/15/19 08:52	03/12/19 07:55	1

Method: 9320 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.0422	U	0.283	0.283	1.00	0.515	pCi/L	02/15/19 09:44	03/06/19 15:46	1
Carrier	%Yield	Qualifier	Limits					Prepared	Analyzed	Dil Fac
Ba Carrier	97.9		40 - 110					02/15/19 09:44	03/06/19 15:46	1
Y Carrier	86.0		40 - 110					02/15/19 09:44	03/06/19 15:46	1

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Combined Radium 226 + 228	0.0470	U	0.296	0.296	5.00	0.515	pCi/L		03/12/19 18:30	1

Definitions/Glossary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
SDG: Gadsden Ash Pond 1203

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)

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ02977 MW-16

Lab Sample ID: 400-165896-1

Date Collected: 02/05/19 09:52

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418822	03/12/19 05:45	CDR	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417283	02/28/19 15:52	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ02978 MW-17

Lab Sample ID: 400-165896-2

Date Collected: 02/05/19 11:30

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418822	03/12/19 05:45	CDR	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417283	02/28/19 15:53	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ02979 MW-14

Lab Sample ID: 400-165896-3

Date Collected: 02/05/19 13:23

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:54	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ02980 MW-5

Lab Sample ID: 400-165896-4

Date Collected: 02/05/19 14:55

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:54	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ02981 MW-1

Lab Sample ID: 400-165896-5

Date Collected: 02/05/19 16:18

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:54	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ02982 FB-1

Lab Sample ID: 400-165896-6

Date Collected: 02/05/19 13:35

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:47	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:54	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03216 MW-3

Lab Sample ID: 400-165896-7

Date Collected: 02/05/19 09:11

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:48	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:54	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03217 MW-4

Lab Sample ID: 400-165896-8

Date Collected: 02/05/19 10:55

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:48	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:55	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03218 MW-2

Lab Sample ID: 400-165896-9

Date Collected: 02/05/19 12:47

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:48	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:55	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03219 PZ-1

Lab Sample ID: 400-165896-10

Date Collected: 02/05/19 14:05

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:48	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:55	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03220 MW-6

Lab Sample ID: 400-165896-11

Date Collected: 02/05/19 15:09

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415085	02/15/19 07:46	JLC	TAL SL
Total/NA	Analysis	9315		1	418821	03/12/19 05:48	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415086	02/15/19 08:20	JLC	TAL SL
Total/NA	Analysis	9320		1	417282	02/28/19 15:55	KLS	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03221 MW-6 DUP

Lab Sample ID: 400-165896-12

Date Collected: 02/05/19 15:09

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:53	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:43	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03222 MW-12

Lab Sample ID: 400-165896-13

Date Collected: 02/06/19 09:48

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:53	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:43	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03223 MW-12 DUP

Lab Sample ID: 400-165896-14

Date Collected: 02/06/19 09:48

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:53	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:43	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03224 MW-11

Lab Sample ID: 400-165896-15

Date Collected: 02/06/19 11:33

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:53	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:43	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03225 MW-10

Lab Sample ID: 400-165896-16

Date Collected: 02/06/19 12:51

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:53	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:43	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03226 MW-8

Lab Sample ID: 400-165896-17

Date Collected: 02/06/19 14:08

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:43	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03227 MW-9

Lab Sample ID: 400-165896-18

Date Collected: 02/06/19 15:21

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:44	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03228 MW-7

Lab Sample ID: 400-165896-19

Date Collected: 02/06/19 16:32

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:44	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03229 FB-2

Lab Sample ID: 400-165896-20

Date Collected: 02/06/19 16:50

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 05:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:44	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Lab Chronicle

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Client Sample ID: AZ03230 PZ-6

Lab Sample ID: 400-165896-21

Date Collected: 02/07/19 10:00

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 07:54	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:44	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03231 PZ-5

Lab Sample ID: 400-165896-22

Date Collected: 02/07/19 10:58

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 07:55	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417878	03/06/19 15:44	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	TAL SL

Client Sample ID: AZ03232 EB-1

Lab Sample ID: 400-165896-23

Date Collected: 02/07/19 11:20

Matrix: Water

Date Received: 02/11/19 17:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	PrecSep-21			415094	02/15/19 08:52	JLC	TAL SL
Total/NA	Analysis	9315		1	418848	03/12/19 07:55	KLS	TAL SL
Total/NA	Prep	PrecSep_0			415101	02/15/19 09:44	JLC	TAL SL
Total/NA	Analysis	9320		1	417879	03/06/19 15:46	CDR	TAL SL
Total/NA	Analysis	Ra226_Ra228		1	418974	03/12/19 18:30	CDR	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: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Rad

Prep Batch: 415085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-165896-1	AZ02977 MW-16	Total/NA	Water	PrecSep-21	
400-165896-2	AZ02978 MW-17	Total/NA	Water	PrecSep-21	
400-165896-3	AZ02979 MW-14	Total/NA	Water	PrecSep-21	
400-165896-4	AZ02980 MW-5	Total/NA	Water	PrecSep-21	
400-165896-5	AZ02981 MW-1	Total/NA	Water	PrecSep-21	
400-165896-6	AZ02982 FB-1	Total/NA	Water	PrecSep-21	
400-165896-7	AZ03216 MW-3	Total/NA	Water	PrecSep-21	
400-165896-8	AZ03217 MW-4	Total/NA	Water	PrecSep-21	
400-165896-9	AZ03218 MW-2	Total/NA	Water	PrecSep-21	
400-165896-10	AZ03219 PZ-1	Total/NA	Water	PrecSep-21	
400-165896-11	AZ03220 MW-6	Total/NA	Water	PrecSep-21	
MB 160-415085/24-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-415085/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-165896-10 DU	AZ03219 PZ-1	Total/NA	Water	PrecSep-21	

Prep Batch: 415086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-165896-1	AZ02977 MW-16	Total/NA	Water	PrecSep_0	
400-165896-2	AZ02978 MW-17	Total/NA	Water	PrecSep_0	
400-165896-3	AZ02979 MW-14	Total/NA	Water	PrecSep_0	
400-165896-4	AZ02980 MW-5	Total/NA	Water	PrecSep_0	
400-165896-5	AZ02981 MW-1	Total/NA	Water	PrecSep_0	
400-165896-6	AZ02982 FB-1	Total/NA	Water	PrecSep_0	
400-165896-7	AZ03216 MW-3	Total/NA	Water	PrecSep_0	
400-165896-8	AZ03217 MW-4	Total/NA	Water	PrecSep_0	
400-165896-9	AZ03218 MW-2	Total/NA	Water	PrecSep_0	
400-165896-10	AZ03219 PZ-1	Total/NA	Water	PrecSep_0	
400-165896-11	AZ03220 MW-6	Total/NA	Water	PrecSep_0	
MB 160-415086/24-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-415086/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-165896-10 DU	AZ03219 PZ-1	Total/NA	Water	PrecSep_0	

Prep Batch: 415094

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-165896-12	AZ03221 MW-6 DUP	Total/NA	Water	PrecSep-21	
400-165896-13	AZ03222 MW-12	Total/NA	Water	PrecSep-21	
400-165896-14	AZ03223 MW-12 DUP	Total/NA	Water	PrecSep-21	
400-165896-15	AZ03224 MW-11	Total/NA	Water	PrecSep-21	
400-165896-16	AZ03225 MW-10	Total/NA	Water	PrecSep-21	
400-165896-17	AZ03226 MW-8	Total/NA	Water	PrecSep-21	
400-165896-18	AZ03227 MW-9	Total/NA	Water	PrecSep-21	
400-165896-19	AZ03228 MW-7	Total/NA	Water	PrecSep-21	
400-165896-20	AZ03229 FB-2	Total/NA	Water	PrecSep-21	
400-165896-21	AZ03230 PZ-6	Total/NA	Water	PrecSep-21	
400-165896-22	AZ03231 PZ-5	Total/NA	Water	PrecSep-21	
400-165896-23	AZ03232 EB-1	Total/NA	Water	PrecSep-21	
MB 160-415094/23-A	Method Blank	Total/NA	Water	PrecSep-21	
LCS 160-415094/1-A	Lab Control Sample	Total/NA	Water	PrecSep-21	
400-165896-17 DU	AZ03226 MW-8	Total/NA	Water	PrecSep-21	

QC Association Summary

Client: Alabama Power General Test Laboratory
Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
SDG: Gadsden Ash Pond 1203

Rad (Continued)

Prep Batch: 415101

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
400-165896-12	AZ03221 MW-6 DUP	Total/NA	Water	PrecSep_0	
400-165896-13	AZ03222 MW-12	Total/NA	Water	PrecSep_0	
400-165896-14	AZ03223 MW-12 DUP	Total/NA	Water	PrecSep_0	
400-165896-15	AZ03224 MW-11	Total/NA	Water	PrecSep_0	
400-165896-16	AZ03225 MW-10	Total/NA	Water	PrecSep_0	
400-165896-17	AZ03226 MW-8	Total/NA	Water	PrecSep_0	
400-165896-18	AZ03227 MW-9	Total/NA	Water	PrecSep_0	
400-165896-19	AZ03228 MW-7	Total/NA	Water	PrecSep_0	
400-165896-20	AZ03229 FB-2	Total/NA	Water	PrecSep_0	
400-165896-21	AZ03230 PZ-6	Total/NA	Water	PrecSep_0	
400-165896-22	AZ03231 PZ-5	Total/NA	Water	PrecSep_0	
400-165896-23	AZ03232 EB-1	Total/NA	Water	PrecSep_0	
MB 160-415101/23-A	Method Blank	Total/NA	Water	PrecSep_0	
LCS 160-415101/1-A	Lab Control Sample	Total/NA	Water	PrecSep_0	
400-165896-17 DU	AZ03226 MW-8	Total/NA	Water	PrecSep_0	

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Method: 9315 - Radium-226 (GFPC)

Lab Sample ID: MB 160-415085/24-A
Matrix: Water
Analysis Batch: 418821

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415085

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	-0.03074	U	0.0383	0.0384	1.00	0.109	pCi/L	02/15/19 07:46	03/12/19 05:48	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier		Prepared	Analyzed					
Ba Carrier	92.9		40 - 110	02/15/19 07:46	03/12/19 05:48	1				

Lab Sample ID: LCS 160-415085/1-A
Matrix: Water
Analysis Batch: 418822

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415085

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	15.1	16.14		1.66	1.00	0.125	pCi/L	107	68 - 137
Carrier	LCS LCS		Limits			Prepared	Analyzed	Dil Fac	
Ba Carrier	%Yield	Qualifier		Prepared	Analyzed				
Ba Carrier	84.7		40 - 110	02/15/19 07:46	03/12/19 05:48	1			

Lab Sample ID: 400-165896-10 DU
Matrix: Water
Analysis Batch: 418821

Client Sample ID: AZ03219 PZ-1
Prep Type: Total/NA
Prep Batch: 415085

Analyte	Sample Sample		DU	DU	Total	RL	MDC	Unit	RER	RER Limit
	Result	Qual	Result	Qual	Uncert. (2σ+/-)					
Radium-226	0.0253	U	0.03704	U	0.0589	1.00	0.103	pCi/L	0.10	1
Carrier	DU DU		Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier		Prepared	Analyzed					
Ba Carrier	94.7		40 - 110	02/15/19 08:52	03/12/19 11:40	1				

Lab Sample ID: MB 160-415094/23-A
Matrix: Water
Analysis Batch: 418848

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415094

Analyte	MB MB		Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
	Result	Qualifier	Uncert. (2σ+/-)	Uncert. (2σ+/-)						
Radium-226	0.01454	U	0.0611	0.0611	1.00	0.123	pCi/L	02/15/19 08:52	03/12/19 11:40	1
Carrier	MB MB		Limits			Prepared	Analyzed	Dil Fac		
Ba Carrier	%Yield	Qualifier		Prepared	Analyzed					
Ba Carrier	101		40 - 110	02/15/19 08:52	03/12/19 11:40	1				

Lab Sample ID: LCS 160-415094/1-A
Matrix: Water
Analysis Batch: 418848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415094

Analyte	Spike Added	LCS Result	LCS Qual	Total	RL	MDC	Unit	%Rec	%Rec. Limits
				Uncert. (2σ+/-)					
Radium-226	15.1	12.68		1.37	1.00	0.133	pCi/L	84	68 - 137

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

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

Lab Sample ID: LCS 160-415094/1-A
Matrix: Water
Analysis Batch: 418848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415094

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	93.2		40 - 110

Lab Sample ID: 400-165896-17 DU
Matrix: Water
Analysis Batch: 418848

Client Sample ID: AZ03226 MW-8
Prep Type: Total/NA
Prep Batch: 415094

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-226	0.127		0.1699		0.0984	1.00	0.108	pCi/L	0.23	1

Carrier	DU %Yield	DU Qualifier	Limits
Ba Carrier	95.3		40 - 110

Method: 9320 - Radium-228 (GFPC)

Lab Sample ID: MB 160-415086/24-A
Matrix: Water
Analysis Batch: 417282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415086

Analyte	MB Result	MB Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	RL	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	-0.1456	U	0.293	0.294	1.00	0.557	pCi/L	02/15/19 08:20	02/28/19 15:55	1

Carrier	MB %Yield	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	92.9		40 - 110	02/15/19 08:20	02/28/19 15:55	1
Y Carrier	80.7		40 - 110	02/15/19 08:20	02/28/19 15:55	1

Lab Sample ID: LCS 160-415086/1-A
Matrix: Water
Analysis Batch: 417284

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415086

Analyte	Spike Added	LCS Result	LCS Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	%Rec	%Rec. Limits
Radium-228	12.6	15.36		1.79	1.00	0.599	pCi/L	122	56 - 140

Carrier	LCS %Yield	LCS Qualifier	Limits
Ba Carrier	84.7		40 - 110
Y Carrier	78.9		40 - 110

Lab Sample ID: 400-165896-10 DU
Matrix: Water
Analysis Batch: 417282

Client Sample ID: AZ03219 PZ-1
Prep Type: Total/NA
Prep Batch: 415086

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Radium-228	0.248	U	0.2376	U	0.357	1.00	0.598	pCi/L	0.01	1

TestAmerica Pensacola

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

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

Lab Sample ID: 400-165896-10 DU
Matrix: Water
Analysis Batch: 417282

Client Sample ID: AZ03219 PZ-1
Prep Type: Total/NA
Prep Batch: 415086

	DU	DU	
Carrier	%Yield	Qualifier	Limits
Ba Carrier	94.7		40 - 110
Y Carrier	83.4		40 - 110

Lab Sample ID: MB 160-415101/23-A
Matrix: Water
Analysis Batch: 417879

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415101

Analyte	MB	MB	Count	Total	RL	MDC	Unit	Prepared	Analyzed	Dil	Fac
	Result	Qualifier	Uncert.	Uncert.							
Radium-228	0.01244	U	0.321	0.321	1.00	0.573	pCi/L	02/15/19 09:44	03/06/19 16:32	1	

Carrier	MB	MB	Limits	Prepared	Analyzed	Dil	Fac
	%Yield	Qualifier					
Ba Carrier	101		40 - 110	02/15/19 09:44	03/06/19 16:32	1	
Y Carrier	83.4		40 - 110	02/15/19 09:44	03/06/19 16:32	1	

Lab Sample ID: LCS 160-415101/1-A
Matrix: Water
Analysis Batch: 417878

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415101

Analyte	Spike	LCS	LCS	Total	RL	MDC	Unit	%Rec	%Rec.
	Added	Result	Qual	Uncert.					Limits
Radium-228	12.6	11.65		1.39	1.00	0.513	pCi/L	93	56 - 140

Carrier	LCS	LCS	Limits
	%Yield	Qualifier	
Ba Carrier	93.2		40 - 110
Y Carrier	82.2		40 - 110

Lab Sample ID: 400-165896-17 DU
Matrix: Water
Analysis Batch: 417878

Client Sample ID: AZ03226 MW-8
Prep Type: Total/NA
Prep Batch: 415101

Analyte	Sample	Sample	DU	DU	Total	RL	MDC	Unit	RER	RER	Limit
	Result	Qual	Result	Qual	Uncert.						
Radium-228	0.251	U	0.1161	U	0.325	1.00	0.561	pCi/L	0.22		1

Carrier	DU	DU	Limits
	%Yield	Qualifier	
Ba Carrier	95.3		40 - 110
Y Carrier	87.5		40 - 110

QC Sample Results

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

Method: Ra226_Ra228 - Combined Radium-226 and Radium-228

Lab Sample ID: 400-165896-10 DU
Matrix: Water
Analysis Batch: 418974

Client Sample ID: AZ03219 PZ-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.274	U	0.2746	U	0.362	5.00	0.598	pCi/L	0	

Lab Sample ID: 400-165896-17 DU
Matrix: Water
Analysis Batch: 418974

Client Sample ID: AZ03226 MW-8
Prep Type: Total/NA

Analyte	Sample Result	Sample Qual	DU Result	DU Qual	Total Uncert. (2σ+/-)	RL	MDC	Unit	RER	RER Limit
Combined Radium 226 + 228	0.378	U	0.2860	U	0.340	5.00	0.561	pCi/L	0.14	

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TestAmerica Pensacola
 3355 McLeMORE Drive
 Pensacola, FL 32514
 Phone (850) 474-1001 Fax (850) 478-2671

Chain of Custody Record

TestAmerica
 THE LEADER IN ENVIRONMENTAL TESTING

Client Information Client Contact: Nick Pitts Phone: _____ E-Mail: cheyenne.whitmire@testamericainc.com Lab PM: Whitmire, Cheyenne R. Carrier Tracking No(s): _____		COC No: 400-56525-24537.1 Page: Page 1 of 2 Job #: _____	
Company Information Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State, Zip: AL 35040 Phone: 205-664-6197 (Tel) Email: lbmidkiff@southernco.com Project Name: CCR Site: Gadsden Ash Pond 1203		Analysis Requested  400-165896 COC	
Due Date Requested: TAT Requested (days): _____ Routine: _____ PO #: _____ WO #: _____ Project #: 40007143 SSO#W#: _____		Preservation Codes: M - Hexane N - None O - AshAO2 P - NaZO4S D - Nitric Acid E - NaHSO4 F - MeOH G - Anchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Z - other (specify)	
Sample Identification Sample Date: 2/5/19 Sample Time: 09:52 Sample Type (C=Comp, G=grab): G Matrix (W=water, S=solid, D=dewast, B=toxic, A=air): Water		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)	
Sample Date: 2/5/19 Sample Time: 11:30 Sample Type: G Matrix: Water		9315_Ra226, 9320_Ra228, Ra226Ra228_GFPc	
Sample Date: 2/5/19 Sample Time: 13:23 Sample Type: G Matrix: Water		SM 4500 Cl_E	
Sample Date: 2/5/19 Sample Time: 14:55 Sample Type: G Matrix: Water		SM 4500 F_C	
Sample Date: 2/5/19 Sample Time: 16:18 Sample Type: G Matrix: Water		SM 4500 Cl_E	
Sample Date: 2/5/19 Sample Time: 13:35 Sample Type: G Matrix: Water		SM 4500 Cl_E	
Special Instructions/Note: MW-16 MW-17 MW-14 MW-5 MW-1 FB-1 (Field Blank)		Total Number of Containers 1 1 1 1 1 1	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Special Instructions/QC Requirements: <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) _____			
Empty Kit Relinquished by: Relinquished by: Laura Midkiff Date: 2/8/2019 7:32 Company: APC		Method of Shipment: Date/Time: 2/19/19 1700 Company: _____	
Relinquished by: _____ Date/Time: _____ Company: _____		Relinquished by: _____ Date/Time: _____ Company: _____	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: _____		Cooler Temperature(s) °C and Other Remarks: 18.6°C SPTA	



Chain of Custody Record

Client Information Company: Alabama Power General Test Laboratory Address: 744 County Rd 87 GSC #8 City: Calera State: AL 35040 Phone: 205-664-6197 (Tel) Email: lbmidkiff@southernco.com Project Name: 40007143 CCR Site: Gadsden Ash Pond 1203		Lab PM: Whitmore, Cheyenne R. E-Mail: cheyenne.whitmore@testamericainc.com Due Date Requested: TAT Requested (days): Routine PO #: WO #: Project #: 40007143 SSO#W#		Sampler: Ben Rothschadl Phone: Client Contact: Laura Midkiff Email: cheyenne.whitmore@testamericainc.com Carrel Tracking No(s): COC No: 400-56525-24537.1 Page: Page 2 of 2 Job #																																																																																																																																																																																																																																																													
Analysis Requested Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Total Number of Containers: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																																																																																																																																																																																																																																																																	
Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - ph 4-5 Z - other (specify)																																																																																																																																																																																																																																																																	
Special Instructions/Note: MW-3 MW-4 MW-2 PZ-1 MW-6 MW-5 DUP (Sample Duplicate) MW-12 MW-12 DUP (Sample Duplicate) MW-11 MW-10 MW-8 MW-9 MW-7 FB-2 (Field Blank) PZ-6 PZ-5 EB-1 (Equipment Blank)																																																																																																																																																																																																																																																																	
Sample Identification <table border="1"> <thead> <tr> <th>Sample Identification</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C-Comp, G-Grab)</th> <th>Matrix (Water, Solid, Overseal, BT-Tissue, A-Mat)</th> <th>Preservation Code</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>SM 4500 F</th> <th>SM 4500 CF</th> <th>SM 4500 SO4 E</th> <th>9315 Ra228, 9320 Ra228, Ra228Ra228, CfPc</th> <th>Analysis Requested</th> <th>Special Instructions/Note</th> </tr> </thead> <tbody> <tr> <td>AZ03216</td> <td>2/5/19</td> <td>09:11</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-3</td> </tr> <tr> <td>AZ03217</td> <td>2/5/19</td> <td>10:55</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-4</td> </tr> <tr> <td>AZ03218</td> <td>2/5/19</td> <td>12:47</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-2</td> </tr> <tr> <td>AZ03219</td> <td>2/5/19</td> <td>14:05</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>PZ-1</td> </tr> <tr> <td>AZ03220</td> <td>2/5/19</td> <td>15:09</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-6</td> </tr> <tr> <td>AZ03221</td> <td>2/5/19</td> <td>15:09</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-5 DUP (Sample Duplicate)</td> </tr> <tr> <td>AZ03222</td> <td>2/6/19</td> <td>09:48</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-12</td> </tr> <tr> <td>AZ03223</td> <td>2/6/19</td> <td>09:48</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-12 DUP (Sample Duplicate)</td> </tr> <tr> <td>AZ03224</td> <td>2/6/19</td> <td>11:33</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-11</td> </tr> <tr> <td>AZ03225</td> <td>2/6/19</td> <td>12:51</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-10</td> </tr> <tr> <td>AZ03226</td> <td>2/6/19</td> <td>14:08</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-8</td> </tr> <tr> <td>AZ03227</td> <td>2/6/19</td> <td>15:21</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-9</td> </tr> <tr> <td>AZ03228</td> <td>2/6/19</td> <td>16:32</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>MW-7</td> </tr> <tr> <td>AZ03229</td> <td>2/6/19</td> <td>16:50</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>FB-2 (Field Blank)</td> </tr> <tr> <td>AZ03230</td> <td>2/7/19</td> <td>10:00</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>PZ-6</td> </tr> <tr> <td>AZ03231</td> <td>2/7/19</td> <td>10:58</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>PZ-5</td> </tr> <tr> <td>AZ03232</td> <td>2/7/19</td> <td>11:20</td> <td>G</td> <td>Water</td> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>EB-1 (Equipment Blank)</td> </tr> </tbody> </table>						Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix (Water, Solid, Overseal, BT-Tissue, A-Mat)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM 4500 F	SM 4500 CF	SM 4500 SO4 E	9315 Ra228, 9320 Ra228, Ra228Ra228, CfPc	Analysis Requested	Special Instructions/Note	AZ03216	2/5/19	09:11	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-3	AZ03217	2/5/19	10:55	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-4	AZ03218	2/5/19	12:47	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-2	AZ03219	2/5/19	14:05	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						PZ-1	AZ03220	2/5/19	15:09	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-6	AZ03221	2/5/19	15:09	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-5 DUP (Sample Duplicate)	AZ03222	2/6/19	09:48	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-12	AZ03223	2/6/19	09:48	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-12 DUP (Sample Duplicate)	AZ03224	2/6/19	11:33	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-11	AZ03225	2/6/19	12:51	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-10	AZ03226	2/6/19	14:08	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-8	AZ03227	2/6/19	15:21	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-9	AZ03228	2/6/19	16:32	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-7	AZ03229	2/6/19	16:50	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						FB-2 (Field Blank)	AZ03230	2/7/19	10:00	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						PZ-6	AZ03231	2/7/19	10:58	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						PZ-5	AZ03232	2/7/19	11:20	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						EB-1 (Equipment Blank)
Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix (Water, Solid, Overseal, BT-Tissue, A-Mat)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SM 4500 F	SM 4500 CF	SM 4500 SO4 E	9315 Ra228, 9320 Ra228, Ra228Ra228, CfPc	Analysis Requested	Special Instructions/Note																																																																																																																																																																																																																																																				
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AZ03221	2/5/19	15:09	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						MW-5 DUP (Sample Duplicate)																																																																																																																																																																																																																																																				
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AZ03231	2/7/19	10:58	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						PZ-5																																																																																																																																																																																																																																																				
AZ03232	2/7/19	11:20	G	Water		<input checked="" type="checkbox"/>	<input type="checkbox"/>						EB-1 (Equipment Blank)																																																																																																																																																																																																																																																				
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																																																																																																																																																																																																																																																																	
Special Instructions/QC Requirements: <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV, Other (specify)																																																																																																																																																																																																																																																																	
Empty Kit Relinquished by: Relinquished by: Laura Mukiff Date: 2/8/2019 7:32 Company: APC Relinquished by: _____ Date/Time: _____ Company: _____ Relinquished by: _____ Date/Time: _____ Company: _____ Custody Seals Intact: _____ Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: 18-6°C EPR																																																																																																																																																																																																																																																																	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-165896-1
SDG Number: Gadsden Ash Pond 1203

Login Number: 165896

List Number: 1

Creator: Shannon, Jonathon W

List Source: TestAmerica Pensacola

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	18.6°C IR7
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Alabama Power General Test Laboratory

Job Number: 400-165896-1
SDG Number: Gadsden Ash Pond 1203

Login Number: 165896

List Number: 2

Creator: Hellm, Michael

List Source: TestAmerica St. Louis

List Creation: 02/14/19 02:32 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	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	18.0
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

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	01-12-20
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	10-31-19
Kentucky (UST)	State Program	4	53	06-30-19
Kentucky (WW)	State Program	4	98030	12-31-19
Louisiana	NELAP	6	30976	06-30-19
Louisiana (DW)	NELAP	6	LA017	12-31-19
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	01-31-20
Rhode Island	State Program	1	LAO00307	12-30-19
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	07-31-19

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 / DOE		L2305	04-06-19 *
Arizona	State Program	9	AZ0813	12-08-19
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	11-30-19
Iowa	State Program	7	373	12-01-20
Kansas	NELAP	7	E-10236	10-31-19
Kentucky (DW)	State Program	4	KY90125	12-31-19
Louisiana	NELAP	6	04080	06-30-19
Louisiana (DW)	NELAP	6	LA011	12-31-19
Maryland	State Program	3	310	09-30-19
Michigan	State Program	5	9005	06-30-19
Missouri	State Program	7	780	06-30-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Alabama Power General Test Laboratory
 Project/Site: CCR Plant Gadsden

TestAmerica Job ID: 400-165896-1
 SDG: Gadsden Ash Pond 1203

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	T104704193-18-13	07-31-19
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-17-0028	02-02-20
Utah	NELAP	8	MO000542018-10	07-31-19
Virginia	NELAP	3	460230	06-14-19
Washington	State Program	10	C592	08-30-19
West Virginia DEP	State Program	3	381	08-31-19

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Alabama Power General Test Laboratory
744 County Road 87, GSC#8
Calera, AL 35040
(205) 664-6032 or 6171
FAX (205) 257-1654

Analytical Report



Sample Group : WMWGADAP_1206
Project/Site : Gadsden Ash Pond
Gadsden, AL 35903
For : Southern Company Services
3535 Colonnade Parkway
Birmingham, AL 35243
Attention : Dustin Brooks, Greg Dyer, & Corey Ladner
Released By : Laura Midkiff
lbmidkif@southernco.com
(205) 664-6197

The following data has been reviewed and approved by:

Quality Control:

Laura Midkiff

Digitally signed by Laura Midkiff
DN: cn=Laura Midkiff, o=Alabama Power
Company, ou=Environmental Affairs,
email=lbmidkif@southernco.com, c=US
Date: 2019.04.01 07:59:45 -0500

Supervision: T. Durant
Maske

Digitally signed by T. Durant Maske
DN: cn=T. Durant Maske, o=Alabama
Power Company, ou=Environmental
Affairs, email=tdmaske@southernco.com,
c=US
Date: 2019.04.02 08:25:50 -0500



Metals ICP

Gadsden Ash Pond

WMWGADAP_1206

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ05382	640018	WMWGADAP_1206
AZ05383	640018	WMWGADAP_1206
AZ05384	640018	WMWGADAP_1206
AZ05385	640018	WMWGADAP_1206
AZ05386	640018	WMWGADAP_1206
AZ05387	640018	WMWGADAP_1206
AZ05388	640018	WMWGADAP_1206
AZ05389	640018	WMWGADAP_1206
AZ05390	640018	WMWGADAP_1206
AZ05391	640018	WMWGADAP_1206
AZ05392	640019	WMWGADAP_1206
AZ05393	640019	WMWGADAP_1206
AZ05394	640019	WMWGADAP_1206
AZ05395	640019	WMWGADAP_1206
AZ05396	640019	WMWGADAP_1206
AZ05397	640019	WMWGADAP_1206
AZ05398	640019	WMWGADAP_1206
AZ05399	640019	WMWGADAP_1206
AZ05400	640019	WMWGADAP_1206
AZ05401	640019	WMWGADAP_1206
AZ05402	640020	WMWGADAP_1206
AZ05403	640020	WMWGADAP_1206
AZ05404	640020	WMWGADAP_1206

4. All of the above samples were analyzed by EPA 200.7 and prepared by EPA 1638.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- Prior to sample analysis, an initial calibration verification (ICV) was analyzed and all criteria were met.
- Following the ICV, an initial calibration blank (ICB) was analyzed and was below the limit of quantitation for all requested analytes.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analytes.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analytes.
- A preparation method blank and laboratory control sample were digested and analyzed with the samples in each digestion batch.
- All laboratory control sample criteria were met.
- The method blank associated with each digestion batch passed all acceptance criteria for all requested analytes.
- The spectral interference check associated with EPA 200.7 was analyzed and all acceptance criteria were met.
- All sample internal standard criteria were met.
- The high standard readbacks associated with EPA 200.7 were within acceptance criteria.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for accuracy were met.
 - A matrix spike and matrix spike duplicate were digested and analyzed with each ICP batch. All acceptance criteria for precision were met.
7. All samples were analyzed at a x2.03 dilution to compensate for potential matrix effects. The following samples were diluted due to the analyzed sample concentration being greater than the high standard of the calibration curve:

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AZ05390	Calcium	x10.15
AZ05398	Calcium	x10.15

8. The raw data results are shown with dilution factors included.



TDS

Gadsden Ash Pond

WMWGADAP_1206

1. This report consists of all MWs and corresponding Lab IDs listed on the Chain of Custody.
2. Refer to comments on Chain of Custody for information regarding sample receipt.
3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ05382	640595	WMWGADAP_1206
AZ05383	640595	WMWGADAP_1206
AZ05384	640595	WMWGADAP_1206
AZ05385	640595	WMWGADAP_1206
AZ05386	640595	WMWGADAP_1206
AZ05387	640595	WMWGADAP_1206
AZ05388	640595	WMWGADAP_1206
AZ05389	640595	WMWGADAP_1206
AZ05390	640595	WMWGADAP_1206
AZ05391	640595	WMWGADAP_1206
AZ05392	641067	WMWGADAP_1206
AZ05393	641067	WMWGADAP_1206
AZ05394	641067	WMWGADAP_1206
AZ05395	641067	WMWGADAP_1206
AZ05396	641067	WMWGADAP_1206
AZ05397	641067	WMWGADAP_1206
AZ05398	641067	WMWGADAP_1206
AZ05399	641067	WMWGADAP_1206
AZ05400	641067	WMWGADAP_1206
AZ05401	641067	WMWGADAP_1206
AZ05402	640812	WMWGADAP_1206
AZ05403	640812	WMWGADAP_1206
AZ05404	640812	WMWGADAP_1206

4. All of the above samples were analyzed by Standard Method 2540C.
5. All samples were analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- A Method Blank was analyzed with each batch. All criteria were met.
- All final weights of samples, standards, and blanks agreed within 0.5mg of the previous weight.
- A sample duplicate was analyzed with each batch. RPD/2 was less than 5%.
- A laboratory control sample was analyzed with each batch. All criteria were met.
- Samples were between 2.5mg and 200mg residue.
- All samples with residue <2.5mg had the maximum volume of 150mL filtered. Affected samples are as follows:
 - AZ05387
 - AZ05400
 - AZ05404



Anions

Gadsden Ash Pond

WMWGADAP_1206

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3. All standards and solutions are NIST/ISO/IEC/Guide 34 traceable and were used within their recommended shelf life.

<u>Sample ID</u>	<u>Batch ID</u>	<u>Project ID</u>
AZ05382	640235, 640128, and 640371	WMWGADAP_1206
AZ05383	640235, 640128, and 640371	WMWGADAP_1206
AZ05384	640235, 640128, and 640371	WMWGADAP_1206
AZ05385	640235, 640128, and 640371	WMWGADAP_1206
AZ05386	640235, 640128, and 640371	WMWGADAP_1206
AZ05387	640235, 640128, and 640371	WMWGADAP_1206
AZ05388	640235, 640128, and 640371	WMWGADAP_1206
AZ05389	640235, 640128, and 640371	WMWGADAP_1206
AZ05390	640235, 640128, and 640371	WMWGADAP_1206
AZ05391	640235, 640128, and 640371	WMWGADAP_1206
AZ05392	640236, 640129, and 640372	WMWGADAP_1206
AZ05393	640236, 640129, and 640372	WMWGADAP_1206
AZ05394	640236, 640129, and 640372	WMWGADAP_1206
AZ05395	640236, 640129, and 640372	WMWGADAP_1206
AZ05396	640236, 640129, and 640372	WMWGADAP_1206
AZ05397	640236, 640129, and 640372	WMWGADAP_1206
AZ05398	640236, 640129, and 640372	WMWGADAP_1206
AZ05399	640236, 640129, and 640372	WMWGADAP_1206
AZ05400	640236, 640129, and 640372	WMWGADAP_1206
AZ05401	640236, 640129, and 640372	WMWGADAP_1206
AZ05402	640231, 640131, and 640373	WMWGADAP_1206
AZ05403	640231, 640131, and 640373	WMWGADAP_1206
AZ05404	640231, 640131, and 640373	WMWGADAP_1206

4. All of the above samples were analyzed and prepared by SM4500 Cl E, SM4500 F C, and SM4500 SO4 E.
5. All samples were prepared and analyzed within the established hold times.
6. All in house quality control procedures were followed, as described below.



General Quality Control Procedures:

- All calibration met criteria for the requested analyte.
- Prior to sample analysis, an initial calibration verification (ICV), and all criteria were met.
- Prior to sample analysis, an initial calibration blank (ICB) was analyzed and was below the method detection limit for the requested analyte.
- All continued calibration verification (CCV) were within the acceptance criteria for the requested analyte.
- All continued calibration blanks (CCB) were below the limit of quantitation for the requested analyte.
- It is noted that the QC summary page typically provides the QC results from the original batch analytical sequence. If dilutions were subsequently performed to bring sample concentrations within the calibration range, any additional QC data from the dilution analyses may need to be obtained from the laboratory. Any qualifications applied to original analyses or dilution re-analyses are based upon QC data available at the time of review.

Matrix Specific Quality Control Procedures

Similarity of matrix and therefore relevance of matrix specific QC results should not be automatically inferred for any sample other than the sample selected for QC.

- A matrix spike was analyzed with each batch. Acceptance criteria for accuracy were met.
- A sample duplicate was analyzed with each batch. Acceptance criteria for precision were met.
 - Precision result is invalid for sample AZ05391 due to both results are below the reporting limit for Fluoride.

7. The following samples were diluted due to the analyzed sample concentration being greater than the high standard of the calibration curve:

<u>Sample ID</u>	<u>Analyte</u>	<u>Dilution Factor</u>
AZ05386	Sulfate	x10
AZ05389	Sulfate	x10
AZ05390	Sulfate	X40
AZ05398	Sulfate	x10
AZ05399	Sulfate	x10
AZ05402	Sulfate	x10
AZ05403	Sulfate	x10

8. The raw data results are shown with dilution factors included.

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AZ05382

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	25.6	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	106	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	3.66	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	4.01	mg/L

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AZ05382

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20

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Laboratory certification ID: E571114

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-1

Laboratory ID Number: AZ05382

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AZ05383

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	25.3	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	107	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	3.75	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	3.86	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

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 Calera, AL 35040
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AZ05383

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-1 DUP

Laboratory ID Number: AZ05383

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

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Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AZ05384

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	3.81	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	31.3	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	4.20	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	1.53	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

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 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AZ05384

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20

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MDL's and RL's are adjusted for sample dilution, as applicable

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-6

Laboratory ID Number: AZ05384

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AZ05385

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	2.95	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	40.7	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	3.95	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	U Not Detected	mg/L

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AZ05385

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - PZ-5

Laboratory ID Number: AZ05385

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

CC:

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 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AZ05386

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	1.08	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	70.6	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	441	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	6.55	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		10	5.00	10	246	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AZ05386

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20

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Laboratory certification ID: E571114

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Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-3

Laboratory ID Number: AZ05386

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
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 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
Sample Date: 25-Feb-19
Customer ID:
Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ05387

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	U Not Detected	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	U Not Detected	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
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 Calera, AL 35040
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ05387

Sample	Analysis	Units	MB	MB				LCS	LCS Limit	Rec		Prec Limit
				Limit	Spike	MS	MSD			Rec	Limit	
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675 20
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853 20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 25-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ05387

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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Expiration: June 30, 2019

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CC:

Alabama Power General Test Laboratory
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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AZ05388

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	0.411	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	26.4	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	191	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	13.0	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	0.246	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	5.10	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AZ05388

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20

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Laboratory certification ID: E571114

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Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-4

Laboratory ID Number: AZ05388

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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Expiration: June 30, 2019

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CC:

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Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AZ05389

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	0.566	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	79.6	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	372	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	3.03	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	0.264	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		10	5.00	10	148	mg/L

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Laboratory certification ID: E571114

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AZ05389

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20

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Laboratory certification ID: E571114

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 Calera, AL 35040
 (205) 664-6032 or 6171
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-2

Laboratory ID Number: AZ05389

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

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Comments:

CC:

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AZ05390

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	1.15	mg/L
* Calcium, Total	GAS	3/6/2019	EPA 200.7		10.15	1.015	5.075	254	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		50	1210	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	5.92	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		40	20.00	40	748	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AZ05390

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20

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Laboratory certification ID: E571114

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-1

Laboratory ID Number: AZ05390

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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MDL's and RL's are adjusted for sample dilution, as applicable

* Test results for these accredited parameters meet all 2003 NELAC and 2009 TNI requirements, with exceptions noted on this report

Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AZ05391

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	0.146	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	53.3	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/7/2019	SM 2540C		1		25	252	mg/L
Filter Completion Date	CRB	3/1/2019	SM 2540C		1			03/01/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	8.28	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	J 0.0813	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	38.4	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments: Precision for Fluoride is invalid due to both the sample and sample duplicate results are below the reporting limit for Fluoride. LBM 3/28/19

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AZ05391

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05391	Boron, Total	mg/L	-0.00398	0.044	1.00	1.16	1.17	1.01	0.85 to 1.15	101	70 to 130	0.853	20
AZ05391	Calcium, Total	mg/L	-0.00448	0.22	5.00	58.2	58.2	5.23	4.25 to 5.75	98.7	70 to 130	0.0675	20

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Expiration: June 30, 2019

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-10

Laboratory ID Number: AZ05391

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05391	Chloride	mg/L	-0.0304	0.50	10.0	19.7	8.30	9.97	9 to 11	114	80 to 120	0.241	20
AZ05391	Fluoride	mg/L	-0.103	0.05	2.50	2.79	0.0466	2.67	2.25 to 2.75	108	80 to 120	54.3	20
AZ05391	Sulfate	mg/L	-0.103	0.50	20.0	59.1	38.5	19.8	18 to 22	104	80 to 120	0.260	20
AZ05391	Solids, Dissolved	mg/L	0.0000	25			258	55.0	40 to 60			1.18	5

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Expiration: June 30, 2019

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Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AZ05392

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	J 0.0527	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	16.0	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	99.3	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	8.66	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	J 0.0816	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	14.1	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AZ05392

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-6

Laboratory ID Number: AZ05392

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5

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Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AZ05393

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	J 0.0491	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	16.0	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	91.3	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	8.63	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	J 0.0618	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	14.0	mg/L

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AZ05393

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 26-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-6 DUP

Laboratory ID Number: AZ05393

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20

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Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AZ05394

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	0.457	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	39.6	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	185	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	7.38	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	J 0.0578	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	24.7	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AZ05394

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-5

Laboratory ID Number: AZ05394

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20

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Laboratory certification ID: E571114

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Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AZ05395

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	J 0.0548	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	15.6	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	103	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	6.21	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	J 0.0824	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	8.98	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AZ05395

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-7

Laboratory ID Number: AZ05395

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

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 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AZ05396

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	J 0.0428	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	53.4	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	211	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	6.52	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	0.108	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	8.25	mg/L

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AZ05396

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-8

Laboratory ID Number: AZ05396

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20

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Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AZ05397

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	J 0.0474	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	42.5	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	186	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	6.77	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	0.147	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	12.4	mg/L

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Expiration: June 30, 2019

Comments:

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 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AZ05397

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-9

Laboratory ID Number: AZ05397

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20

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Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AZ05398

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	0.140	mg/L
* Calcium, Total	GAS	3/6/2019	EPA 200.7		10.15	1.015	5.075	82.2	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	360	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	6.20	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	J 0.0985	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		10	5.00	10	135	mg/L

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AZ05398

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-11

Laboratory ID Number: AZ05398

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20

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 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AZ05399

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	J 0.0494	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	60.2	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	422	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	5.88	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		10	5.00	10	257	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

Comments:

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AZ05399

Sample	Analysis	Units	MB	MB				LCS		Rec		Prec	
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-12

Laboratory ID Number: AZ05399

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20

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 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ05400

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500CI E		1	0.50	1	U Not Detected	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	U Not Detected	mg/L

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Laboratory certification ID: E571114

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Expiration: June 30, 2019

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ05400

Sample	Analysis	Units	MB	MB				LCS		Rec			Prec
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20

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Laboratory certification ID: E571114

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Comments:

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 Calera, AL 35040
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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPFB
 Sample Date: 27-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Field Blank

Laboratory ID Number: AZ05400

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ05401

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	J 0.0206	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	18.6	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/13/2019	SM 2540C		1		25	140	mg/L
Filter Completion Date	CRB	3/5/2019	SM 2540C		1			03/05/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	3.05	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	0.182	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	9.86	mg/L

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Laboratory certification ID: E571114

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ05401

Sample	Analysis	Units	MB	MB				LCS	LCS	Rec		Prec	Limit
				Limit	Spike	MS	MSD			Limit	Rec		
AZ05401	Calcium, Total	mg/L	-0.00325	0.22	5.00	23.9	23.7	5.28	4.25 to 5.75	105	70 to 130	0.601	20
AZ05401	Boron, Total	mg/L	-0.000898	0.044	1.00	1.00	1.00	1.00	0.85 to 1.15	98.1	70 to 130	0.274	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

Alabama Power General Test Laboratory
 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-17

Laboratory ID Number: AZ05401

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05401	Chloride	mg/L	0.0225	0.50	10.0	13.7	3.05	9.97	9 to 11	106	80 to 120	0.00	20
AZ05401	Sulfate	mg/L	-0.330	0.50	20.0	28.9	9.77	20.1	18 to 22	95.2	80 to 120	0.917	20
AZ05401	Solids, Dissolved	mg/L	1.00	25			147	53.0	40 to 60			2.44	5
AZ05401	Fluoride	mg/L	-0.00567	0.05	2.50	2.75	0.172	2.56	2.25 to 2.75	103	80 to 120	5.65	20

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Certificate Of Analysis Alabama Power



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ05402

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	21.5	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/11/2019	SM 2540C		1		25	261	mg/L
Filter Completion Date	CRB	3/6/2019	SM 2540C		1			03/06/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	4.15	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		10	5.00	10	192	mg/L

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ05402

Sample	Analysis	Units	MB	MB				LCS	Rec			Prec	
				Limit	Spike	MS	MSD		Limit	Rec	Limit		Prec
AZ05404	Boron, Total	mg/L	-0.00121	0.044	1.00	0.987	0.985	1.00	0.85 to 1.15	98.7	70 to 130	0.180	20
AZ05404	Calcium, Total	mg/L	-0.00460	0.22	5.00	5.36	5.28	5.35	4.25 to 5.75	107	70 to 130	1.60	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-16

Laboratory ID Number: AZ05402

Sample	Analysis	Units	MB	MB Limit	Spike	MS	Sample		LCS Limit	Rec		Prec Limit	
							Duplicate	LCS		Rec	Limit		
AZ05404	Sulfate	mg/L	-0.135	0.50	20.0	19.5	-0.105	19.8	18 to 22	97.5	80 to 120	0.00	20
AZ05404	Fluoride	mg/L	-0.106	0.05	2.50	2.64	-0.111	2.65	2.25 to 2.75	106	80 to 120	0.00	20
AZ05403	Solids, Dissolved	mg/L	-3.00	25			261	57.0	40 to 60			4.74	5
AZ05404	Chloride	mg/L	-0.039	0.50	10.0	10.4	0.169	9.92	9 to 11	104	80 to 120	0.00	20

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Expiration: June 30, 2019

Comments:

CC:

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 744 County Road 87, GSC#8
 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AZ05403

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	21.4	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/11/2019	SM 2540C		1		25	287	mg/L
Filter Completion Date	CRB	3/6/2019	SM 2540C		1			03/06/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	3.45	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		10	5.00	10	207	mg/L

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AZ05403

Sample	Analysis	Units	MB	MB				LCS		Rec			Prec
				Limit	Spike	MS	MSD	LCS	Limit	Rec	Limit	Prec	Limit
AZ05404	Boron, Total	mg/L	-0.00121	0.044	1.00	0.987	0.985	1.00	0.85 to 1.15	98.7	70 to 130	0.180	20
AZ05404	Calcium, Total	mg/L	-0.00460	0.22	5.00	5.36	5.28	5.35	4.25 to 5.75	107	70 to 130	1.60	20

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Expiration: June 30, 2019

Comments:

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAP
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond - MW-14

Laboratory ID Number: AZ05403

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec		Prec	
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05404	Sulfate	mg/L	-0.135	0.50	20.0	19.5	-0.105	19.8	18 to 22	97.5	80 to 120	0.00	20
AZ05404	Fluoride	mg/L	-0.106	0.05	2.50	2.64	-0.111	2.65	2.25 to 2.75	106	80 to 120	0.00	20
AZ05403	Solids, Dissolved	mg/L	-3.00	25			261	57.0	40 to 60			4.74	5
AZ05404	Chloride	mg/L	-0.039	0.50	10.0	10.4	0.169	9.92	9 to 11	104	80 to 120	0.00	20

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Comments:

CC:

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 Calera, AL 35040
 (205) 664-6032 or 6171
 FAX (205) 257-1654

Certificate Of Analysis  **Alabama Power**



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
Sample Date: 28-Feb-19
Customer ID:
Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ05404

Name	Analyst	Test Date	Reference	Vio Spec	DF	MDL	RL	Q Results	Units
Metals, Cyanide, Total Phenols									
* Boron, Total	GAS	3/5/2019	EPA 200.7		2.03	0.02	0.1	U Not Detected	mg/L
* Calcium, Total	GAS	3/5/2019	EPA 200.7		2.03	0.1	0.5	U Not Detected	mg/L
General Characteristics									
* Solids, Dissolved	CRB	3/11/2019	SM 2540C		1		25	U Not Detected	mg/L
Filter Completion Date	CRB	3/6/2019	SM 2540C		1			03/06/2019	Date
* Chloride	JCC	3/1/2019	SM4500Cl E		1	0.50	1	U Not Detected	mg/L
* Fluoride	JCC	3/1/2019	SM4500F C		1	0.05	0.1	U Not Detected	mg/L
* Sulfate	JCC	3/5/2019	SM4500SO4 E		1	0.50	1	U Not Detected	mg/L

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ05404

Sample	Analysis	Units	MB	MB				LCS	LCS Limit	Rec		Prec Limit	
				Limit	Spike	MS	MSD			Rec	Limit		
AZ05404	Boron, Total	mg/L	-0.00121	0.044	1.00	0.987	0.985	1.00	0.85 to 1.15	98.7	70 to 130	0.180	20
AZ05404	Calcium, Total	mg/L	-0.00460	0.22	5.00	5.36	5.28	5.35	4.25 to 5.75	107	70 to 130	1.60	20

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Batch QC Summary



To: Dustin Brooks
 Greg Dyer

Customer Account: WMWGADAPEB
 Sample Date: 28-Feb-19
 Customer ID:
 Delivery Date: 28-Feb-19

Description: Gadsden Ash Pond Equipment Blank

Laboratory ID Number: AZ05404

Sample	Analysis	Units	MB	MB			Sample		LCS	Rec			Prec
				Limit	Spike	MS	Duplicate	LCS	Limit	Rec	Limit	Prec	Limit
AZ05404	Sulfate	mg/L	-0.135	0.50	20.0	19.5	-0.105	19.8	18 to 22	97.5	80 to 120	0.00	20
AZ05404	Fluoride	mg/L	-0.106	0.05	2.50	2.64	-0.111	2.65	2.25 to 2.75	106	80 to 120	0.00	20
AZ05403	Solids, Dissolved	mg/L	-3.00	25			261	57.0	40 to 60			4.74	5
AZ05404	Chloride	mg/L	-0.039	0.50	10.0	10.4	0.169	9.92	9 to 11	104	80 to 120	0.00	20

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Laboratory certification ID: E571114

Issued By: State of Florida, Department of Health

Expiration: June 30, 2019

Comments:

CC:

Reported: 4/1/2019
 Version: 2.0



Abbreviation	Description
DF	Dilution Factor
LCS	Lab Control Sample
LFM	Lab Fortified Matrix
MB	Method Blank
MDL	Method Detection Limit; minimum concentration of an analyte that can be determined with 99% confidence that the concentration is greater than zero.
MS	Matrix Spike
MSD	Matrix Spike Duplicate
Prec	Precision (% RPD)
Q	Qualifier; comment used to note deviations or additional information associated with analytical results.
QC	Quality Control
Rec	Recovery of Matrix Spike
RL	Reporting Limit; lowest concentration at which an analyte can be quantitatively measured.
Vio Spec	Violation Specification; regulatory limit which has been exceeded by the sample analyzed.

Qualifier	Description
B	Analyte found in reagent blank. Indicates possible reagent or background contamination.
BA	Analyte found in reagent blank is = RL AND is > 1/10 the amount of the sample.
C	Analyte was verified by re-analysis.
D	All samples were stored at less than or equal to 6 °C and for no longer than 48 hours from time of sampling, unless otherwise noted.
E	Estimated reported value exceeded calibration range.
F	Water Field Group (WFG) qualifier; see comments for more information
FA	Field results were reviewed by the Water Field Group.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.
J	Reported value is an estimate because concentration is less than reporting limit.
K	No MB or LCS were submitted with the sample for dissolved analysis.
L	Check standard is outside of specification limit.
LA	Analyte recovery in the check standard was above specification limit. Results may be biased high.
LL	Analyte recovery in the check standard was below specification limit. Results may be biased low.
M	LOQ verification analyzed with batch was outside of specification limit.
N	Organic constituents tentatively identified. Confirmation is needed.
P	Precision is out of specification limit.
R	Matrix spike recovery or matrix spike duplicate recovery is outside of specification limit.
RA	Matrix spike is invalid due to sample concentration.
S	Surrogate recovery is outside of specification limit.
T	Sample temperature is outside of specification limit.
U	Compound was analyzed, but not detected.



Chain of Custody

Groundwater

APC General Testing Laboratory

Field Complete
 Lab Complete

Outside Lab

Lab ETA **02/28/2019 15:40**

Requested Complete Date	Routine	Results To	Dustin Brooks, Greg Dyer, Corey Ladner
Site Representative	Gerson Pickett	Requested By	Corey Ladner
Collector	Ben Rothschild	Location	Gadsden Ash Pond

Bottles	1	Metals	500 mL	3	Anions	250 mL	5	N/A	N/A	7	N/A	N/A
	2	TDS	500 mL	4	N/A	N/A	6	N/A	N/A	8	N/A	N/A

Comments: Corrected date on MW-5 to 02/27/2019. LBM 2/28/2019

Sample #	Date	Time	Bottle Count	Description	Lab Filter	Lab Id
PZ-1	2/25/19	12:16	3	Groundwater		AZ05382
PZ-1 DUP	02/25/2019	12:16	3	Sample Duplicate		AZ05383
PZ-6	02/25/2019	13:55	3	Groundwater		AZ05384
PZ-5	02/25/2019	14:47	3	Groundwater		AZ05385
MW-3	02/25/2019	15:42	3	Groundwater		AZ05386
FB-1	02/25/2019	16:00	3	Field Blank		AZ05387
MW-4	02/26/2019	10:08	3	Groundwater		AZ05388
MW-2	02/26/2019	12:05	3	Groundwater		AZ05389
MW-1	02/26/2019	13:25	3	Groundwater		AZ05390
MW-10	02/26/2019	14:44	3	Groundwater		AZ05391
MW-6	02/26/2019	15:38	3	Groundwater		AZ05392
MW-6 DUP	02/26/2019	15:38	3	Sample Duplicate		AZ05393
MW-5	02/27/2019	09:55	3	Groundwater		AZ05394
MW-7	02/27/2019	10:50	3	Groundwater		AZ05395
MW-8	02/27/2019	12:10	3	Groundwater		AZ05396
MW-9	02/27/2019	13:06	3	Groundwater		AZ05397
MW-11	02/27/2019	14:56	3	Groundwater		AZ05398
MW-12	02/27/2019	15:48	3	Groundwater		AZ05399
FB-2	02/27/2019	16:00	3	Field Blank		AZ05400
MW-17	02/28/2019	10:34	3	Groundwater		AZ05401
MW-16	02/28/2019	11:36	3	Groundwater		AZ05402

Relinquished By	Received By	Date/Time
		02/28/2019 15:55

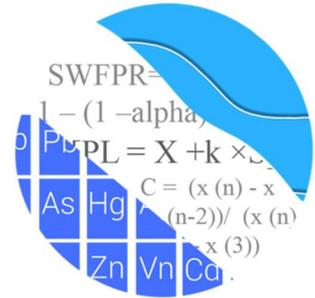
SmarTroll ID	6496-34170-1-1
Turbidity ID	3901-20010-2-2
Sample Event	1206

All metals and radiological bottles have pH < 2

Cooler Temp	0.9 degrees C
Thermometer ID	5408-27568-2-2
pH Strip ID	7260-39349-1-1

Appendix B

GROUNDWATER STATS CONSULTING



April 18, 2019

Southern Company Services
Attn: Mr. Greg Dyer
3535 Colonnade Parkway
Birmingham, AL 35243

Re: Plant Gadsden Landfill
Statistical Analysis – February 25-28, 2019 Sample Event

Dear Mr. Dyer,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the Detection Monitoring analysis for the February 25-28, 2019 groundwater sample event for Alabama Power Company's Plant Gadsden Landfill. The analysis complies with the federal rule for the Disposal of Coal Combustion Residuals from Electric Utilities (CCR Rule, 2015) and follows the USEPA Unified Guidance (2009).

Sampling began for the CCR program in December 2017, and at least 8 background samples have been collected at each of the groundwater monitoring wells.

The monitoring well network, as provided by Southern Company Services, consists of the following:

- **Upgradient wells:** GSD-AP-MW-14, GSD-AP-MW-16, GSD-AP-MW-17
- **Downgradient wells:** GSD-AP-MW-1, GSD-AP-MW-2, GSD-AP-MW-3, GSD-AP-MW-4, GSD-AP-MW-5, GSD-AP-MW-6, GSD-AP-MW-7, GSD-AP-MW-8, GSD-AP-MW-9, GSD-AP-MW-10, GSD-AP-MW-11, GSD-AP-MW-12, GSD-AP-PZ-1, GSD-AP-PZ-5, GSD-AP-PZ-6

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Dr. Jim Loftis, Civil & Environmental Engineering professor emeritus at Colorado State University and Senior Advisor to Groundwater Stats Consulting.

The CCR program consists of the following Detection Monitoring constituents:

- **Appendix III** (Detection Monitoring) - boron, calcium, chloride, fluoride, pH, sulfate, and TDS

Time series plots for these parameters at each well are provided, along with box plots. The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells.

Data at all wells were evaluated for the following during the background screening evaluation, which is described below, performed in April 2019: 1) outliers; 2) trends; 3) most appropriate statistical method for Appendix III parameters based on site characteristics of groundwater data upgradient of the facility; and 4) eligibility of downgradient wells when intrawell statistical methods are recommended. Power curves were provided with that report to demonstrate that the selected statistical methods for Appendix III parameters comply with the USEPA Unified Guidance. The EPA suggests the selected statistical method should provide at least 55% power at 3 standard deviations or at least 80% power at 4 standard deviations.

Background Screening

Outlier and Trend Testing

In April 2019, all proposed background data were screened prior to construction of statistical limits. Time series plots were used to identify suspected outliers, or extreme values that would result in limits that are not representative of the current background data population. Suspected outliers at all wells for Appendix III parameters were formally tested using Tukey's box plot method and, when identified, flagged in the computer database with "o" and deselected prior to construction of statistical limits. While no outliers were flagged for the Appendix III parameters, a summary of any future values that are flagged as such will be included with this report.

Additionally, when any values are flagged in the database as outliers, they are plotted in a disconnected and lighter symbol on the time series graph. The accompanying data pages will display the flagged value in a lighter font as well. A substitution of the most recent reporting limit was applied when varying detection limits existed in data.

No obvious seasonal patterns were observed on the time series plots for any of the detected data; therefore, no deseasonalizing adjustments were made to the data. When seasonal patterns are observed, data may be deseasonalized so that the resulting limits will correctly account for the seasonality as a predictable pattern rather than random variation or a release.

While trends may be identified by visual inspection, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends, and the results were submitted with the Background Screening evaluation. In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, all available data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When any records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits.

Most of the trends noted were relatively low in magnitude when compared to average concentrations, and the background time period is short with less than two years of record, making it difficult to separate trends from normal year-to-year variation; therefore, no adjustments were made to the data sets. If the observed decreasing or increasing trends persist over a longer time frame, some records may need to be truncated.

Appendix III – Determination of Spatial Variation

The Analysis of Variance (ANOVA) was used to statistically evaluate differences in average concentrations among upgradient wells, which assists in identifying the most appropriate statistical approach and the results were submitted with the Background Screening report. Interwell tests, which compare downgradient well data to statistical limits constructed from pooled upgradient well data, are appropriate when average concentrations are similar across upgradient wells. Intrawell tests, which compare compliance data from a single well to screened historical data within the same well, are appropriate when upgradient wells exhibit spatial variation; when statistical limits constructed from

upgradient wells are not representative of the current background data population; and when downgradient water quality is unimpacted compared to upgradient water quality for the same parameter.

The ANOVA identified variation among upgradient well data for all Appendix III parameters except TDS. Therefore, interwell methods were recommended initially for TDS, and all other constituents were further evaluated as described below for the appropriateness of intrawell testing to accommodate the groundwater quality.

Appendix III – Intrawell Method Eligibility Screening

Intrawell limits constructed from carefully screened background data from within each well serve to provide statistical limits that are representative of the background data population, and that will rapidly identify a change in more recent compliance data from within a given well. This statistical method removes the element of variation from across wells and eliminates the chance of mistaking natural spatial variation for a release from the facility. Prior to performing intrawell prediction limits, several steps are required to reasonably demonstrate downgradient water quality does not have existing impacts from the practices of the facility.

Exploratory data analysis was used as a general comparison of concentrations in downgradient wells to concentrations reported in upgradient wells for Appendix III parameters.

Upper tolerance limits are used in conjunction with confidence intervals to determine whether the estimated averages in downgradient wells are higher than observed levels upgradient of the facility. The upper tolerance limits were constructed to represent the extreme upper range of possible background levels at the site. Two-sided tolerance limits are included for pH and represent both the upper and lower ranges of possible measurements in background wells.

In cases where downgradient average concentrations are higher than observed concentrations upgradient for a given constituent where intrawell analyses are recommended, an independent study and hydrogeological investigation would be required to identify local geochemical conditions and expected groundwater quality for the region to justify an intrawell approach. Such an assessment is beyond the scope of services provided by Groundwater Stats Consulting. When there is not an obvious explanation for observed concentration differences in downgradient wells relative to reported concentrations in upgradient wells, interwell prediction limits will initially be

selected for the statistical method until further evidence shows that concentrations are due to natural variation rather than a result of the facility.

Parametric tolerance limits were constructed with a target of 99% confidence and 95% coverage using pooled upgradient well data for each of the Appendix III parameters. The confidence and coverage levels for nonparametric tolerance limits are dependent upon the number of background samples. As more data are collected, the background population is better represented and the confidence and coverage levels increase.

Confidence intervals were constructed on downgradient wells for each of the Appendix III parameters, using the tolerance limits discussed above, to determine intrawell eligibility where applicable. Parametric confidence intervals around the population mean are constructed at the 99% confidence level when data follow a normal distribution, and around the geometric mean (or population median) when data follow a transformed-normal distribution.

Non-parametric confidence intervals are constructed when data do not pass a normality test and cannot be normalized via a transformation. The confidence level associated with the non-parametric tests is dependent on the number of values used to construct the interval. Confidence intervals require a minimum of four samples; however, eight samples are recommended. When a well/constituent pair does not have the minimum sample requirement, the well/constituent pair will continue to be reported and tracked using time series plots and/or trend tests until such time that enough data are available.

When the entire confidence interval is above a background standard for a given parameter, interwell methods are initially recommended as the statistical method. Note that this screening identifies whether confidence intervals are above a background standard, but does not identify the reason for this occurrence. Therefore, only the wells/parameters with confidence intervals which did not exceed background standards are eligible for intrawell prediction limits.

At least one confidence interval exceedance was noted for boron, calcium, chloride and sulfate; therefore, interwell methods were initially recommended for these parameters along with TDS based on the results of the ANOVA. Intrawell methods were recommended for fluoride and pH. If further evaluation confirms natural variation in groundwater, intrawell methods will be considered for parameters currently recommended for interwell methods.

Appendix III Parameters – Establishing Statistical Limits

Intrawell prediction limits, combined with a 1-of-3 resample plan, were constructed for fluoride and pH; and interwell prediction limits, combined with a 1-of-2 resample plan, were constructed for boron, calcium, chloride, sulfate and TDS using all available background data through February 7, 2019. The most recent observation at each well was compared to its respective background limit (i.e. intrawell or interwell)

Interwell prediction limits pool upgradient well data to establish a background limit for an individual constituent. The most recent sample from each downgradient well is compared to the background limit to determine whether there are statistically significant increases (SSIs). Intrawell prediction limits use screened historical data within a given well to establish limits for parameters at that well. The most recent sample from the same well is compared to its respective background.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits will be necessary to accommodate these types of changes. In the interwell case, newer data will be included in background following each event, provided that upgradient well data are reviewed for outliers and trending data. In the intrawell case, data for all wells and constituents are re-evaluated when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. In some cases, the earlier portion of data are deselected prior to construction of limits in order to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample, and the 1-of-3 resample plan allows for collection of up to two additional samples, to determine whether the initial exceedance is confirmed. When the resamples confirm the initial exceedance, a statistically significant increase (SSI) is identified and further research would be required to identify the cause of the exceedance (i.e. impact from the site, natural variation, or an off-site source). If a resample falls within the statistical limit, the initial exceedance is considered to be a false positive result and, therefore, no further action is necessary.

Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. The confidence levels associated with parametric prediction limits are based on an overall false positive rate of 5%. When data cannot be

normalized or the majority of data are nondetects, a nonparametric test is utilized where the highest background value is used to establish the upper prediction limit (and lowest value in the case of pH). The associated confidence level is dependent on the number of available background, future comparisons and resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (USEPA Unified Guidance, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- No statistical analyses are required on wells and analytes containing 100% nondetects.
- When data contain <15% nondetects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for nondetects is the practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% nondetects, the Kaplan-Meier nondetect adjustment is applied to the background data. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% nondetects.

Prediction Limit Summary

When prediction limits were constructed based on the intrawell and interwell methods discussed above, no initial statistically significant increases were identified for the intrawell prediction limits. Several initial statistically significant increases were identified for the interwell prediction limits. Summary tables of the prediction limit findings follow this letter.

The Sen's Slope/Mann Kendall trend test was performed on wells/constituents with prediction limit exceedances. Upgradient wells were included in this analysis for a general comparison of how the groundwater behaves upgradient of the facility relative to downgradient. When the entire record of data was evaluated for each well discussed above, no statistically significant increasing trends were noted at any of the downgradient wells. A statistically significant decreasing trend was noted for TDS in well GSD-AP-MW-3. Statistically significant decreasing trends were noted for chloride and sulfate in upgradient well GSD-AP-MW-17 and statistically significant increasing trends were noted for sulfate and TDS in upgradient well GSD-AP-MW-16. When trends exist in upgradient wells, it is an indication that groundwater is changing naturally for those parameters unrelated to the facility.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for Plant Gadsden Landfill. If you have any questions or comments, please feel free to contact me.

For Groundwater Stats Consulting,

A handwritten signature in black ink that reads "Kristina Rayner". The signature is written in a cursive, flowing style.

Kristina L. Rayner
Groundwater Statistician

Intrawell Prediction Limit Summary - All Results (No Significant Results)

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 12:11 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Fluoride (mg/L)	GSD-AP-MW-1	0.114	n/a	2/26/2019	0.1ND	No	8	0.07031	0.01815	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-10	0.1319	n/a	2/26/2019	0.0813	No	8	0.08213	0.02068	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-11	0.1029	n/a	2/27/2019	0.0985	No	8	0.2505	0.02925	12.5	None	sqrt(x)	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-12	0.1	n/a	2/27/2019	0.1ND	No	8	n/a	n/a	87.5	n/a	n/a	0.005912	NP Intra (NDs) 1 of 3
Fluoride (mg/L)	GSD-AP-MW-14	0.3193	n/a	2/28/2019	0.1ND	No	8	0.1713	0.06151	12.5	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-16	0.16	n/a	2/28/2019	0.1ND	No	8	n/a	n/a	25	n/a	n/a	0.005912	NP Intra (normality) 1 of 3
Fluoride (mg/L)	GSD-AP-MW-17	0.2447	n/a	2/28/2019	0.182	No	8	0.1888	0.02322	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-2	0.3552	n/a	2/26/2019	0.264	No	8	0.2346	0.05008	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-3	0.146	n/a	2/25/2019	0.1ND	No	8	0.08425	0.02567	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-4	0.2778	n/a	2/26/2019	0.246	No	8	0.2311	0.01939	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-5	0.08006	n/a	2/27/2019	0.0578	No	8	0.05689	0.009625	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-6	0.1032	n/a	2/26/2019	0.0618	No	8	0.05729	0.01906	12.5	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-7	0.1236	n/a	2/27/2019	0.0824	No	8	0.085	0.01604	12.5	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-8	0.1463	n/a	2/27/2019	0.108	No	8	0.1038	0.01768	12.5	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-9	0.1569	n/a	2/27/2019	0.147	No	8	0.01259	0.004996	12.5	None	x^2	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-PZ-1	0.1609	n/a	2/25/2019	0.1ND	No	8	0.1142	0.01941	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-PZ-5	0.1	n/a	2/25/2019	0.1ND	No	8	n/a	n/a	25	n/a	n/a	0.005912	NP Intra (normality) 1 of 3
Fluoride (mg/L)	GSD-AP-PZ-6	0.1	n/a	2/25/2019	0.1ND	No	8	n/a	n/a	25	n/a	n/a	0.005912	NP Intra (normality) 1 of 3
pH (pH)	GSD-AP-MW-1	6.642	6.005	2/26/2019	6.11	No	8	6.324	0.1322	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-10	6.889	6.598	2/26/2019	6.77	No	8	6.744	0.06046	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-11	6.862	6.515	2/27/2019	6.56	No	8	6.689	0.072	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-12	5.64	5.257	2/27/2019	5.4	No	8	5.449	0.07954	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-14	4.172	3.928	2/28/2019	3.94	No	8	4.05	0.05071	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-16	5.451	3.959	2/28/2019	4.35	No	8	4.705	0.3101	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-17	10.15	7.57	2/28/2019	9.48	No	8	8.858	0.5351	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-2	6.718	6.419	2/26/2019	6.54	No	8	6.569	0.06221	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-3	6.788	5.665	2/25/2019	5.93	No	8	6.226	0.2334	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-4	6.796	6.547	2/26/2019	6.64	No	8	6.671	0.05167	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-5	6.366	5.994	2/27/2019	6.11	No	8	6.18	0.07746	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-6	6.44	5.885	2/26/2019	6.17	No	8	6.163	0.1154	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-7	6.821	5.959	2/27/2019	6.12	No	8	6.39	0.1789	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-8	6.844	6.476	2/27/2019	6.56	No	8	6.66	0.07635	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-9	7.055	6.734	2/27/2019	6.85	No	9	6.894	0.07091	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-PZ-1	6.924	6.556	2/25/2019	6.6	No	8	6.74	0.07635	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-PZ-5	5.932	5.373	2/25/2019	5.46	No	8	5.653	0.1161	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-PZ-6	5.665	5.425	2/25/2019	5.54	No	8	5.545	0.04986	0	None	No	0.0002508	Param Intra 1 of 3

Interwell Prediction Limit Summary - Significant Results

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 11:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bq N	Bq Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	GSD-AP-MW-1	0.1	n/a	2/26/2019	1.15	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-10	0.1	n/a	2/26/2019	0.146	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-11	0.1	n/a	2/27/2019	0.14	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-2	0.1	n/a	2/26/2019	0.566	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-3	0.1	n/a	2/25/2019	1.08	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-4	0.1	n/a	2/26/2019	0.411	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-5	0.1	n/a	2/27/2019	0.457	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Calcium (mg/L)	GSD-AP-MW-1	28.79	n/a	2/26/2019	254	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-10	28.79	n/a	2/26/2019	53.3	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-11	28.79	n/a	2/27/2019	82.2	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-12	28.79	n/a	2/27/2019	60.2	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-2	28.79	n/a	2/26/2019	79.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-3	28.79	n/a	2/25/2019	70.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-5	28.79	n/a	2/27/2019	39.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-8	28.79	n/a	2/27/2019	53.4	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-9	28.79	n/a	2/27/2019	42.5	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-1	4.237	n/a	2/26/2019	5.92	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-10	4.237	n/a	2/26/2019	8.28	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-11	4.237	n/a	2/27/2019	6.2	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-12	4.237	n/a	2/27/2019	5.88	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-3	4.237	n/a	2/25/2019	6.55	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-4	4.237	n/a	2/26/2019	13	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-5	4.237	n/a	2/27/2019	7.38	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-6	4.237	n/a	2/26/2019	8.63	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-7	4.237	n/a	2/27/2019	6.21	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-8	4.237	n/a	2/27/2019	6.52	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-9	4.237	n/a	2/27/2019	6.77	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-1	178.6	n/a	2/26/2019	748	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-12	178.6	n/a	2/27/2019	257	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-3	178.6	n/a	2/25/2019	246	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-1	259	n/a	2/26/2019	1210	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-11	259	n/a	2/27/2019	360	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-12	259	n/a	2/27/2019	422	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-2	259	n/a	2/26/2019	372	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-3	259	n/a	2/25/2019	441	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2

Trend Test Summary Table - Significant Results

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 11:43 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Chloride (mg/L)	GSD-AP-MW-17 (bg)	-2.537	-31	-25	Yes	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-16 (bg)	525.4	35	25	Yes	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-17 (bg)	-11.12	-27	-25	Yes	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-16 (bg)	580.6	28	25	Yes	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-3	-119.7	-26	-25	Yes	9	0	n/a	n/a	0.01	NP

Intrawell Prediction Limits

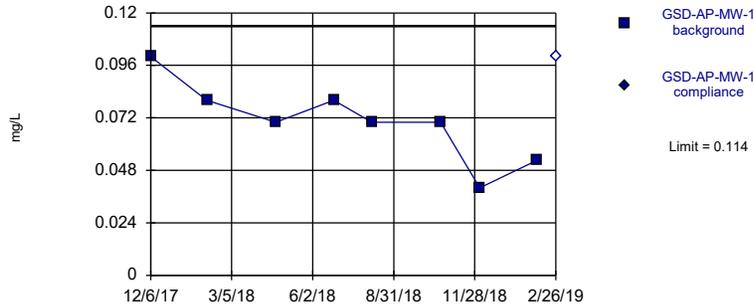
Intrawell Prediction Limit Summary - All Results (No Significant Results)

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 12:11 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Fluoride (mg/L)	GSD-AP-MW-1	0.114	n/a	2/26/2019	0.1ND	No	8	0.07031	0.01815	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-10	0.1319	n/a	2/26/2019	0.0813	No	8	0.08213	0.02068	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-11	0.1029	n/a	2/27/2019	0.0985	No	8	0.2505	0.02925	12.5	None	sqrt(x)	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-12	0.1	n/a	2/27/2019	0.1ND	No	8	n/a	n/a	87.5	n/a	n/a	0.005912	NP Intra (NDs) 1 of 3
Fluoride (mg/L)	GSD-AP-MW-14	0.3193	n/a	2/28/2019	0.1ND	No	8	0.1713	0.06151	12.5	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-16	0.16	n/a	2/28/2019	0.1ND	No	8	n/a	n/a	25	n/a	n/a	0.005912	NP Intra (normality) 1 of 3
Fluoride (mg/L)	GSD-AP-MW-17	0.2447	n/a	2/28/2019	0.182	No	8	0.1888	0.02322	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-2	0.3552	n/a	2/26/2019	0.264	No	8	0.2346	0.05008	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-3	0.146	n/a	2/25/2019	0.1ND	No	8	0.08425	0.02567	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-4	0.2778	n/a	2/26/2019	0.246	No	8	0.2311	0.01939	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-5	0.08006	n/a	2/27/2019	0.0578	No	8	0.05689	0.009625	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-6	0.1032	n/a	2/26/2019	0.0618	No	8	0.05729	0.01906	12.5	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-7	0.1236	n/a	2/27/2019	0.0824	No	8	0.085	0.01604	12.5	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-8	0.1463	n/a	2/27/2019	0.108	No	8	0.1038	0.01768	12.5	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-MW-9	0.1569	n/a	2/27/2019	0.147	No	8	0.01259	0.004996	12.5	None	x^2	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-PZ-1	0.1609	n/a	2/25/2019	0.1ND	No	8	0.1142	0.01941	0	None	No	0.0005016	Param Intra 1 of 3
Fluoride (mg/L)	GSD-AP-PZ-5	0.1	n/a	2/25/2019	0.1ND	No	8	n/a	n/a	25	n/a	n/a	0.005912	NP Intra (normality) 1 of 3
Fluoride (mg/L)	GSD-AP-PZ-6	0.1	n/a	2/25/2019	0.1ND	No	8	n/a	n/a	25	n/a	n/a	0.005912	NP Intra (normality) 1 of 3
pH (pH)	GSD-AP-MW-1	6.642	6.005	2/26/2019	6.11	No	8	6.324	0.1322	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-10	6.889	6.598	2/26/2019	6.77	No	8	6.744	0.06046	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-11	6.862	6.515	2/27/2019	6.56	No	8	6.689	0.072	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-12	5.64	5.257	2/27/2019	5.4	No	8	5.449	0.07954	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-14	4.172	3.928	2/28/2019	3.94	No	8	4.05	0.05071	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-16	5.451	3.959	2/28/2019	4.35	No	8	4.705	0.3101	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-17	10.15	7.57	2/28/2019	9.48	No	8	8.858	0.5351	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-2	6.718	6.419	2/26/2019	6.54	No	8	6.569	0.06221	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-3	6.788	5.665	2/25/2019	5.93	No	8	6.226	0.2334	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-4	6.796	6.547	2/26/2019	6.64	No	8	6.671	0.05167	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-5	6.366	5.994	2/27/2019	6.11	No	8	6.18	0.07746	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-6	6.44	5.885	2/26/2019	6.17	No	8	6.163	0.1154	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-7	6.821	5.959	2/27/2019	6.12	No	8	6.39	0.1789	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-8	6.844	6.476	2/27/2019	6.56	No	8	6.66	0.07635	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-MW-9	7.055	6.734	2/27/2019	6.85	No	9	6.894	0.07091	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-PZ-1	6.924	6.556	2/25/2019	6.6	No	8	6.74	0.07635	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-PZ-5	5.932	5.373	2/25/2019	5.46	No	8	5.653	0.1161	0	None	No	0.0002508	Param Intra 1 of 3
pH (pH)	GSD-AP-PZ-6	5.665	5.425	2/25/2019	5.54	No	8	5.545	0.04986	0	None	No	0.0002508	Param Intra 1 of 3

Within Limit

Prediction Limit
 Intrawell Parametric

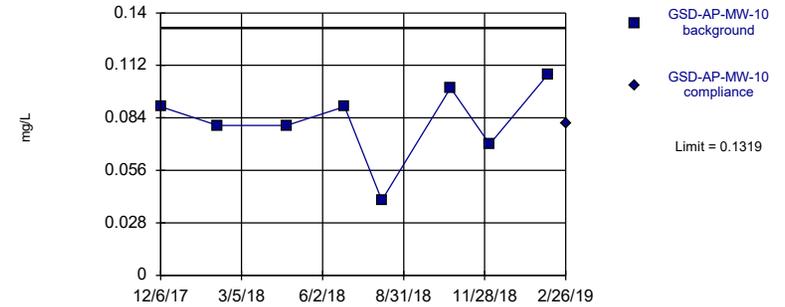


Background Data Summary: Mean=0.07031, Std. Dev.=0.01815, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9482, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
 Intrawell Parametric

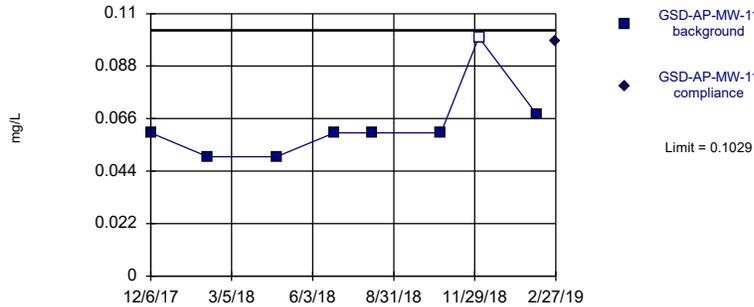


Background Data Summary: Mean=0.08213, Std. Dev.=0.02068, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9155, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
 Intrawell Parametric

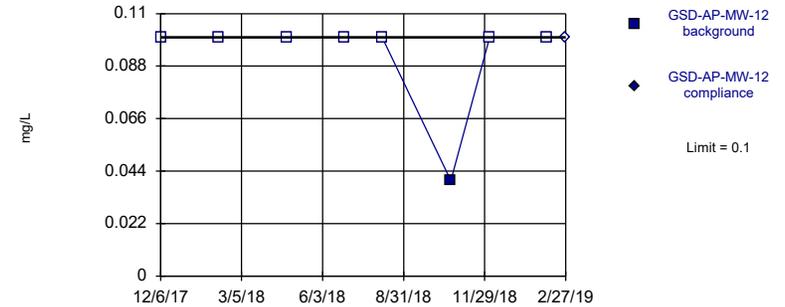


Background Data Summary (based on square root transformation): Mean=0.2505, Std. Dev.=0.02925, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7653, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
 Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-1
12/6/2017	0.1	
2/6/2018	0.08 (J)	
4/23/2018	0.07 (J)	
6/26/2018	0.08 (J)	
8/7/2018	0.07 (J)	
10/22/2018	0.07 (J)	
12/4/2018	0.04 (J)	
2/5/2019	0.0525 (J)	
2/26/2019		<0.1

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-10	GSD-AP-MW-10
12/6/2017	0.09 (J)	
2/7/2018	0.08 (J)	
4/24/2018	0.08 (J)	
6/27/2018	0.09 (J)	
8/7/2018	0.04 (J)	
10/22/2018	0.1	
12/4/2018	0.07 (J)	
2/6/2019	0.107	
2/26/2019		0.0813 (J)

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-11	GSD-AP-MW-11
12/6/2017	0.06 (J)	
2/7/2018	0.05 (J)	
4/24/2018	0.05 (J)	
6/27/2018	0.06 (J)	
8/8/2018	0.06 (J)	
10/23/2018	0.06 (J)	
12/4/2018	<0.1	
2/6/2019	0.0678 (J)	
2/27/2019		0.0985 (J)

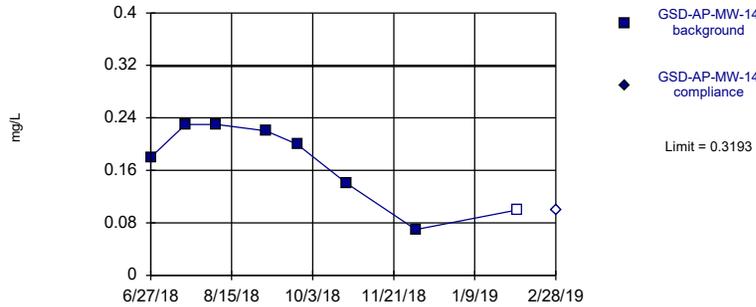
Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-12	GSD-AP-MW-12
12/6/2017	<0.1	
2/8/2018	<0.1	
4/24/2018	<0.1	
6/27/2018	<0.1	
8/8/2018	<0.1	
10/23/2018	0.04 (J)	
12/5/2018	<0.1	
2/6/2019	<0.1	
2/27/2019		<0.1

Within Limit

Prediction Limit
Intrawell Parametric

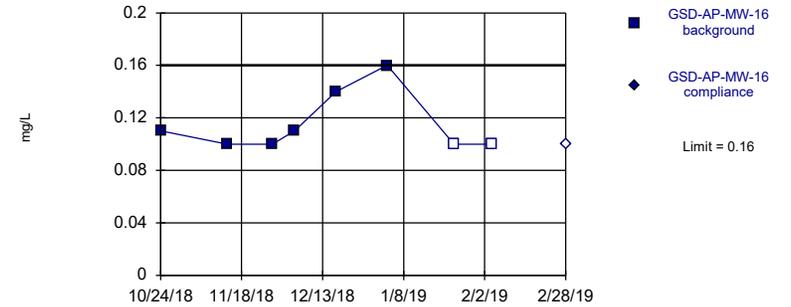


Background Data Summary: Mean=0.1713, Std. Dev.=0.06151, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8841, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
Intrawell Non-parametric

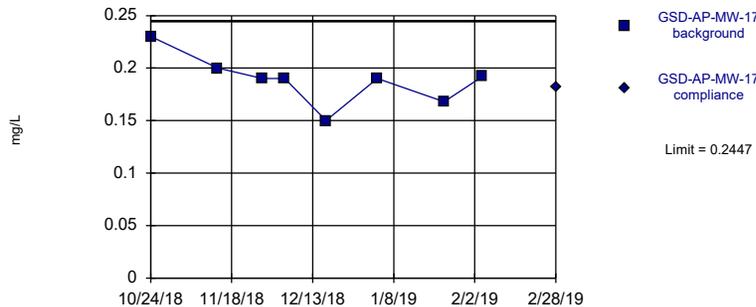


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 25% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
Intrawell Parametric

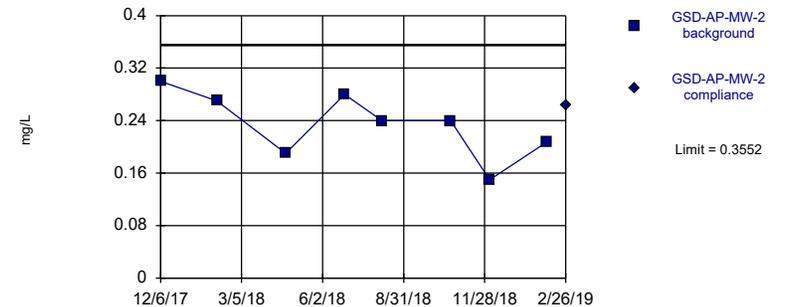


Background Data Summary: Mean=0.1888, Std. Dev.=0.02322, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9185, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=0.2346, Std. Dev.=0.05008, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.966, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-14	GSD-AP-MW-14
6/27/2018	0.18	
7/18/2018	0.23	
8/6/2018	0.23	
9/5/2018	0.22	
9/24/2018	0.2	
10/24/2018	0.14	
12/5/2018	0.07 (J)	
2/5/2019	<0.1	
2/28/2019		<0.1

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-16	GSD-AP-MW-16
10/24/2018	0.11	
11/14/2018	0.1	
11/28/2018	0.1	
12/5/2018	0.11	
12/18/2018	0.14	
1/3/2019	0.16	
1/24/2019	<0.1	
2/5/2019	<0.1	
2/28/2019		<0.1

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-17	GSD-AP-MW-17
10/24/2018	0.23	
11/14/2018	0.2	
11/28/2018	0.19	
12/5/2018	0.19	
12/18/2018	0.15	
1/3/2019	0.19	
1/24/2019	0.168	
2/5/2019	0.192	
2/28/2019		0.182

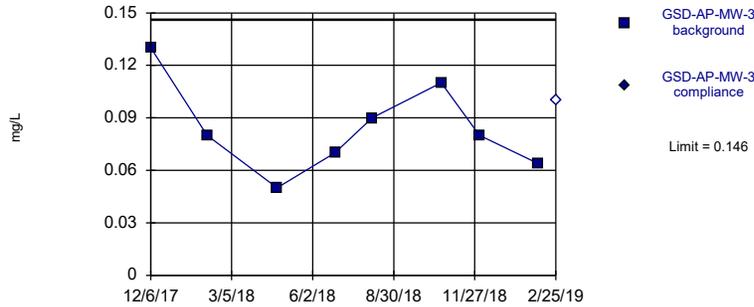
Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-2	GSD-AP-MW-2
12/6/2017	0.3	
2/6/2018	0.27	
4/23/2018	0.19	
6/27/2018	0.28	
8/7/2018	0.24	
10/22/2018	0.24	
12/4/2018	0.15	
2/5/2019	0.207	
2/26/2019		0.264

Within Limit

Prediction Limit
 Intrawell Parametric

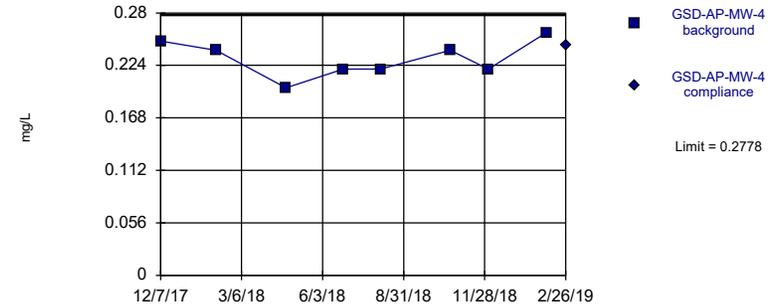


Background Data Summary: Mean=0.08425, Std. Dev.=0.02567, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9577, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
 Intrawell Parametric

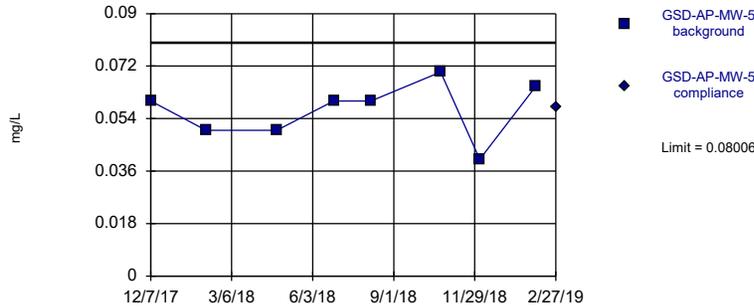


Background Data Summary: Mean=0.2311, Std. Dev.=0.01939, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9429, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
 Intrawell Parametric

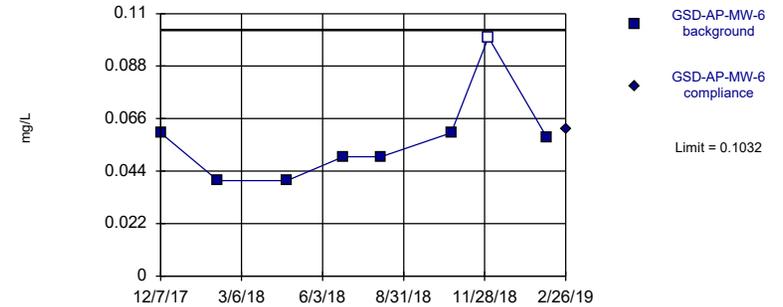


Background Data Summary: Mean=0.05689, Std. Dev.=0.009625, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.939, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
 Intrawell Parametric



Background Data Summary: Mean=0.05729, Std. Dev.=0.01906, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7906, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-3	GSD-AP-MW-3
12/6/2017	0.13	
2/6/2018	0.08 (J)	
4/24/2018	0.05 (J)	
6/27/2018	0.07 (J)	
8/7/2018	0.09 (J)	
10/22/2018	0.11	
12/3/2018	0.08 (J)	
2/5/2019	0.064 (J)	
2/25/2019		<0.1

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-4	GSD-AP-MW-4
12/7/2017	0.25	
2/6/2018	0.24	
4/24/2018	0.2	
6/26/2018	0.22	
8/6/2018	0.22	
10/22/2018	0.24	
12/3/2018	0.22	
2/5/2019	0.259	
2/26/2019		0.246

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-5	GSD-AP-MW-5
12/7/2017	0.06 (J)	
2/6/2018	0.05 (J)	
4/25/2018	0.05 (J)	
6/27/2018	0.06 (J)	
8/7/2018	0.06 (J)	
10/23/2018	0.07 (J)	
12/5/2018	0.04 (J)	
2/5/2019	0.0651 (J)	
2/27/2019		0.0578 (J)

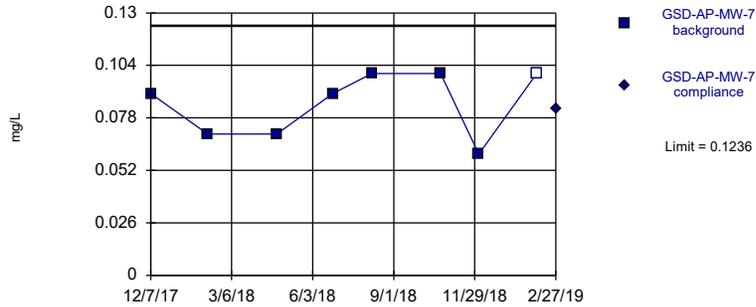
Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-6	GSD-AP-MW-6
12/7/2017	0.06 (J)	
2/8/2018	0.04 (J)	
4/25/2018	0.04 (J)	
6/26/2018	0.05 (J)	
8/7/2018	0.05 (J)	
10/23/2018	0.06 (J)	
12/3/2018	<0.1	
2/5/2019	0.0583 (J)	
2/26/2019		0.0618 (J)

Within Limit

Prediction Limit
Intrawell Parametric

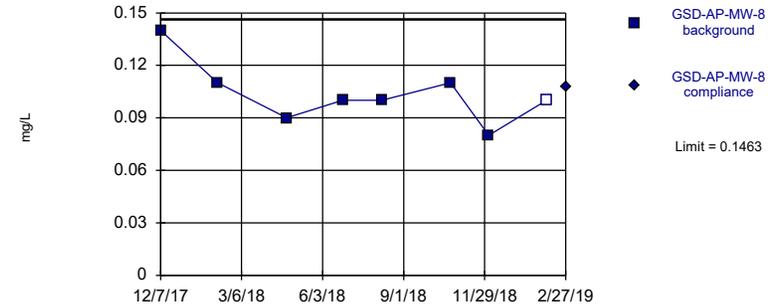


Background Data Summary: Mean=0.085, Std. Dev.=0.01604, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8419, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
Intrawell Parametric

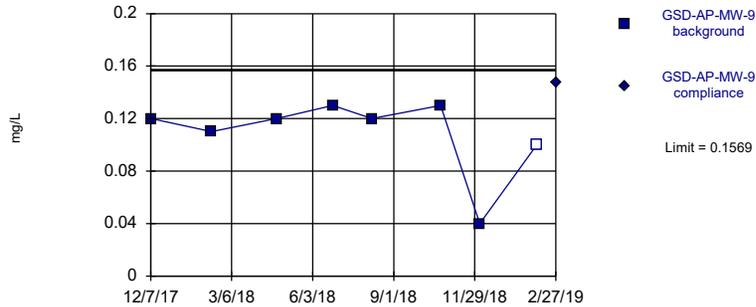


Background Data Summary: Mean=0.1038, Std. Dev.=0.01768, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9005, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
Intrawell Parametric

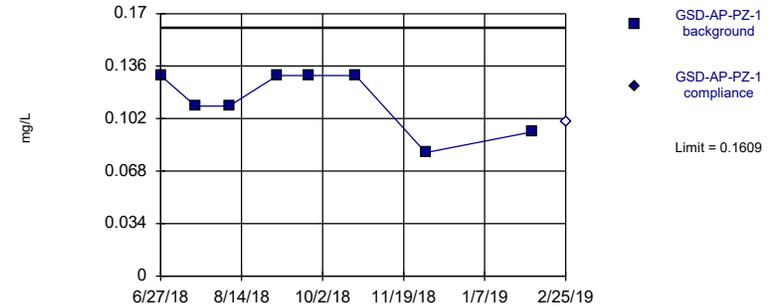


Background Data Summary (based on square transformation): Mean=0.01259, Std. Dev.=0.004996, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8029, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=0.1142, Std. Dev.=0.01941, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8184, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-7	GSD-AP-MW-7
12/7/2017	0.09 (J)	
2/8/2018	0.07 (J)	
4/25/2018	0.07 (J)	
6/26/2018	0.09 (J)	
8/8/2018	0.1	
10/23/2018	0.1	
12/4/2018	0.06 (J)	
2/6/2019	<0.1	
2/27/2019		0.0824 (J)

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-8	GSD-AP-MW-8
12/7/2017	0.14	
2/8/2018	0.11	
4/25/2018	0.09 (J)	
6/26/2018	0.1	
8/8/2018	0.1	
10/23/2018	0.11	
12/4/2018	0.08 (J)	
2/6/2019	<0.1	
2/27/2019		0.108

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-9	GSD-AP-MW-9
12/7/2017	0.12	
2/12/2018	0.11	
4/25/2018	0.12	
6/26/2018	0.13	
8/8/2018	0.12	
10/23/2018	0.13	
12/5/2018	0.04 (J)	
2/6/2019	<0.1	
2/27/2019		0.147

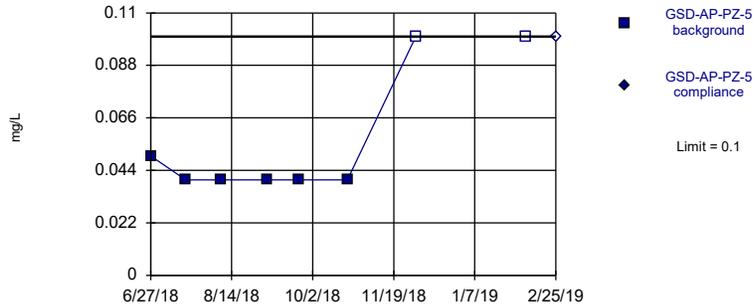
Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-PZ-1	GSD-AP-PZ-1
6/27/2018	0.13	
7/18/2018	0.11	
8/7/2018	0.11	
9/5/2018	0.13	
9/24/2018	0.13	
10/22/2018	0.13	
12/3/2018	0.08 (J)	
2/5/2019	0.0934 (J)	
2/25/2019		<0.1

Within Limit

Prediction Limit
Intrawell Non-parametric

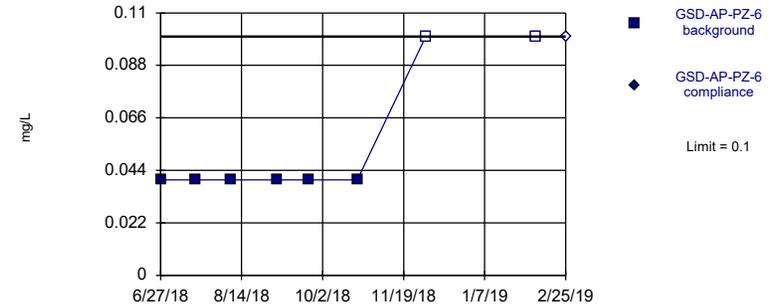


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 25% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limit

Prediction Limit
Intrawell Non-parametric

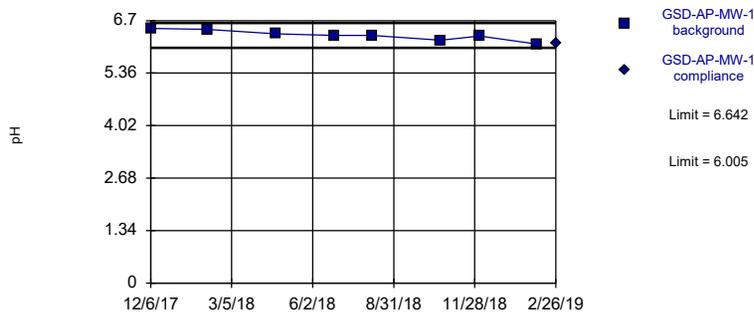


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. 25% NDs. Well-constituent pair annual alpha = 0.01179. Individual comparison alpha = 0.005912 (1 of 3).

Constituent: Fluoride Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric

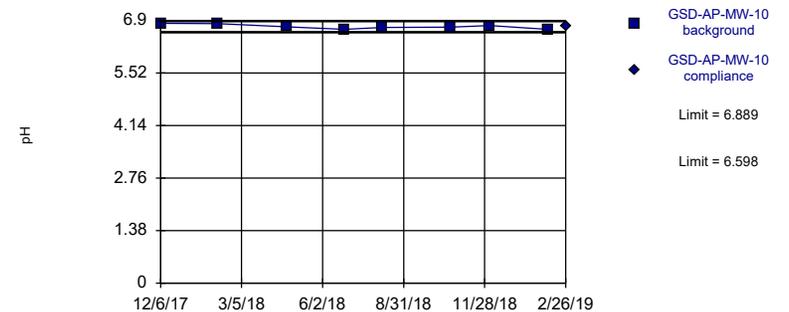


Background Data Summary: Mean=6.324, Std. Dev.=0.1322, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9411, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=6.744, Std. Dev.=0.06046, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9217, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-PZ-5	GSD-AP-PZ-5
6/27/2018	0.05 (J)	
7/18/2018	0.04 (J)	
8/8/2018	0.04 (J)	
9/5/2018	0.04 (J)	
9/24/2018	0.04 (J)	
10/23/2018	0.04 (J)	
12/3/2018	<0.1	
2/7/2019	<0.1	
2/25/2019		<0.1

Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-PZ-6	GSD-AP-PZ-6
6/27/2018	0.04 (J)	
7/18/2018	0.04 (J)	
8/8/2018	0.04 (J)	
9/5/2018	0.04 (J)	
9/24/2018	0.04 (J)	
10/23/2018	0.04 (J)	
12/3/2018	<0.1	
2/7/2019	<0.1	
2/25/2019		<0.1

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-1
12/6/2017	6.5	
2/6/2018	6.48	
4/23/2018	6.36	
6/26/2018	6.32	
8/7/2018	6.32	
10/22/2018	6.2	
12/4/2018	6.31	
2/5/2019	6.1	
2/26/2019		6.11

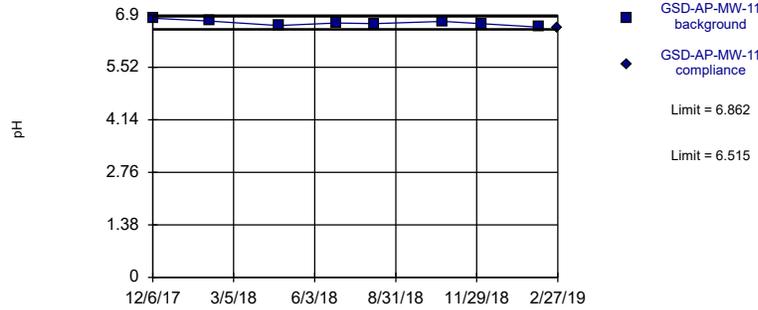
Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-10	GSD-AP-MW-10
12/6/2017	6.83	
2/7/2018	6.82	
4/24/2018	6.74	
6/27/2018	6.67	
8/7/2018	6.72	
10/22/2018	6.73	
12/4/2018	6.77	
2/6/2019	6.67	
2/26/2019		6.77

Within Limits

Prediction Limit
Intrawell Parametric

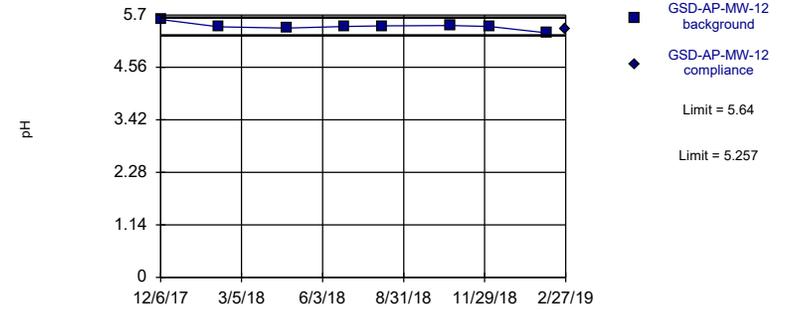


Background Data Summary: Mean=6.689, Std. Dev.=0.072, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9817, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric

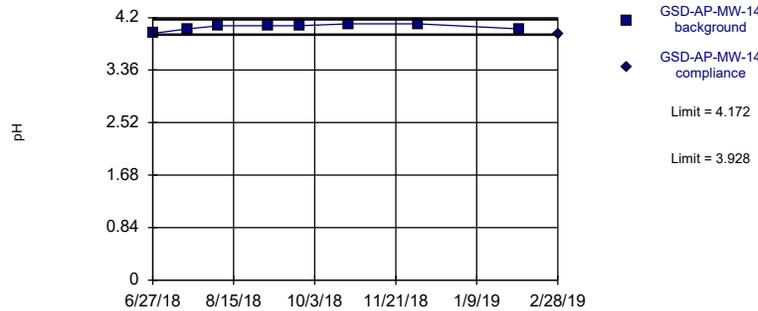


Background Data Summary: Mean=5.449, Std. Dev.=0.07954, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.885, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric

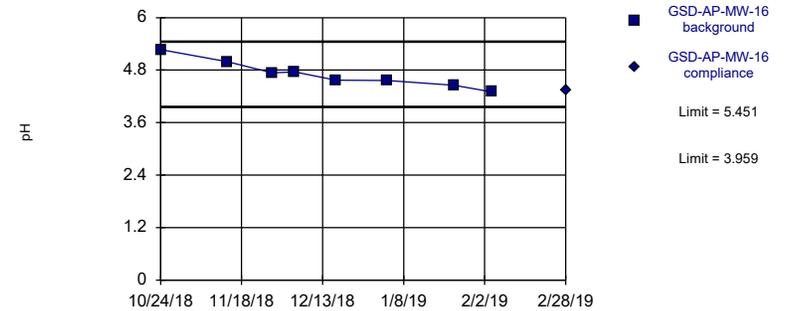


Background Data Summary: Mean=4.05, Std. Dev.=0.05071, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8654, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=4.705, Std. Dev.=0.3101, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9564, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:09 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-11	GSD-AP-MW-11
12/6/2017	6.81	
2/7/2018	6.74	
4/24/2018	6.62	
6/27/2018	6.69	
8/8/2018	6.67	
10/23/2018	6.73	
12/4/2018	6.67	
2/6/2019	6.58	
2/27/2019		6.56

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-12	GSD-AP-MW-12
12/6/2017	5.6	
2/8/2018	5.44	
4/24/2018	5.41	
6/27/2018	5.45	
8/8/2018	5.46	
10/23/2018	5.47	
12/5/2018	5.45	
2/6/2019	5.31	
2/27/2019		5.4

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-14	GSD-AP-MW-14
6/27/2018	3.95	
7/18/2018	4.02	
8/6/2018	4.07	
9/5/2018	4.07	
9/24/2018	4.07	
10/24/2018	4.1	
12/5/2018	4.1	
2/5/2019	4.02	
2/28/2019		3.94 (E)

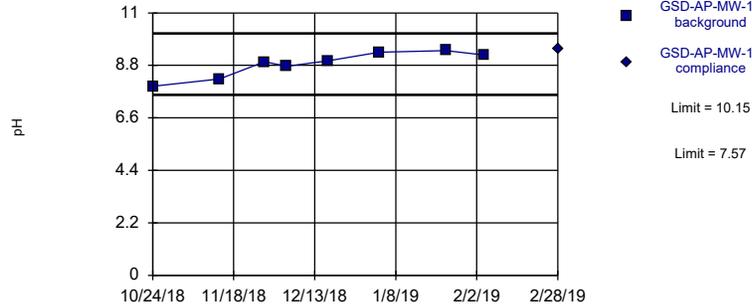
Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-16	GSD-AP-MW-16
10/24/2018	5.27	
11/14/2018	4.99	
11/28/2018	4.74	
12/5/2018	4.76	
12/18/2018	4.57	
1/3/2019	4.56	
1/24/2019	4.45	
2/5/2019	4.3	
2/28/2019		4.35

Within Limits

Prediction Limit
Intrawell Parametric

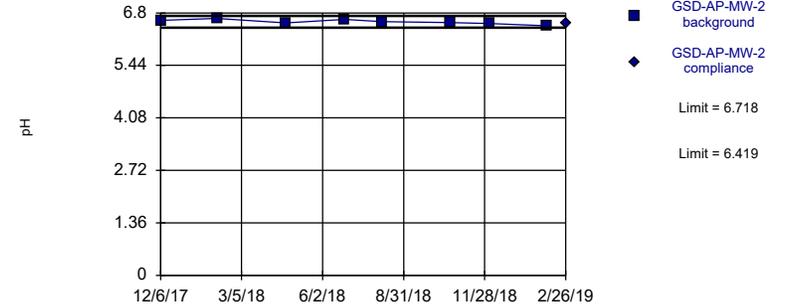


Background Data Summary: Mean=8.858, Std. Dev.=0.5351, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9021, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric

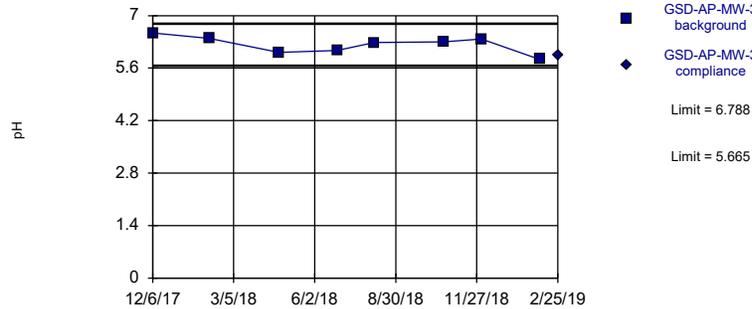


Background Data Summary: Mean=6.569, Std. Dev.=0.06221, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9822, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric

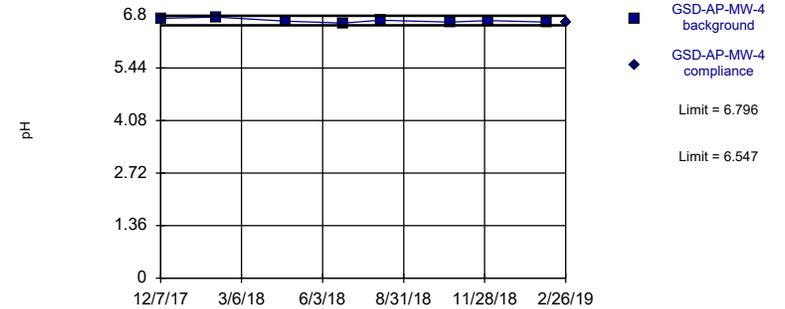


Background Data Summary: Mean=6.226, Std. Dev.=0.2334, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9505, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=6.671, Std. Dev.=0.05167, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9281, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-17	GSD-AP-MW-17
10/24/2018	7.92	
11/14/2018	8.23	
11/28/2018	8.95	
12/5/2018	8.77	
12/18/2018	8.99	
1/3/2019	9.35	
1/24/2019	9.42	
2/5/2019	9.23	
2/28/2019		9.48

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-2	GSD-AP-MW-2
12/6/2017	6.61	
2/6/2018	6.66	
4/23/2018	6.54	
6/27/2018	6.63	
8/7/2018	6.57	
10/22/2018	6.55	
12/4/2018	6.52	
2/5/2019	6.47	
2/26/2019		6.54

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-3	GSD-AP-MW-3
12/6/2017	6.54	
2/6/2018	6.39	
4/24/2018	6.02	
6/27/2018	6.07	
8/7/2018	6.28	
10/22/2018	6.3	
12/3/2018	6.38	
2/5/2019	5.83	
2/25/2019		5.93

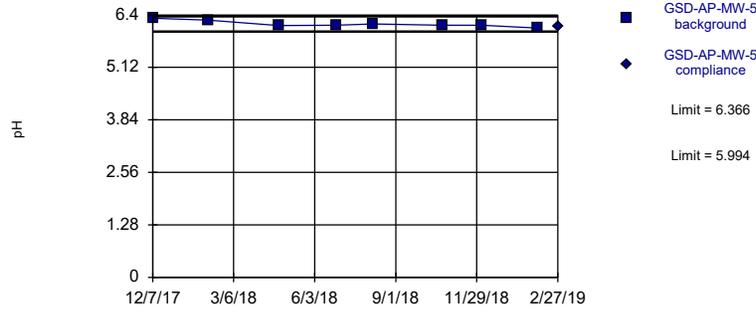
Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-4	GSD-AP-MW-4
12/7/2017	6.73	
2/6/2018	6.76	
4/24/2018	6.66	
6/26/2018	6.61	
8/6/2018	6.68	
10/22/2018	6.63	
12/3/2018	6.67	
2/5/2019	6.63	
2/26/2019		6.64

Within Limits

Prediction Limit Intrawell Parametric

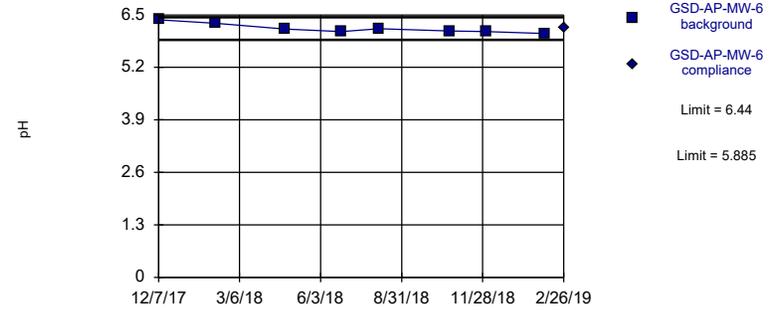


Background Data Summary: Mean=6.18, Std. Dev.=0.07746, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8741, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit Intrawell Parametric

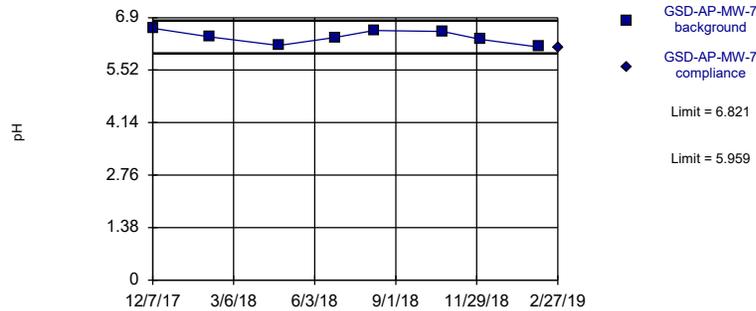


Background Data Summary: Mean=6.163, Std. Dev.=0.1154, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8662, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit Intrawell Parametric

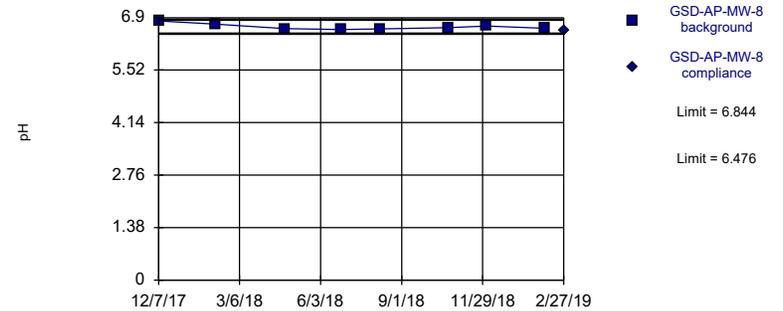


Background Data Summary: Mean=6.39, Std. Dev.=0.1789, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9328, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit Intrawell Parametric



Background Data Summary: Mean=6.66, Std. Dev.=0.07635, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8626, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-5	GSD-AP-MW-5
12/7/2017	6.32	
2/6/2018	6.27	
4/25/2018	6.14	
6/27/2018	6.15	
8/7/2018	6.18	
10/23/2018	6.15	
12/5/2018	6.15	
2/5/2019	6.08	
2/27/2019		6.11

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-6	GSD-AP-MW-6
12/7/2017	6.38	
2/8/2018	6.29	
4/25/2018	6.15	
6/26/2018	6.09	
8/7/2018	6.16	
10/23/2018	6.1	
12/3/2018	6.09	
2/5/2019	6.04	
2/26/2019		6.17

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-7	GSD-AP-MW-7
12/7/2017	6.62	
2/8/2018	6.39	
4/25/2018	6.17	
6/26/2018	6.38	
8/8/2018	6.56	
10/23/2018	6.54	
12/4/2018	6.33	
2/6/2019	6.13	
2/27/2019		6.12

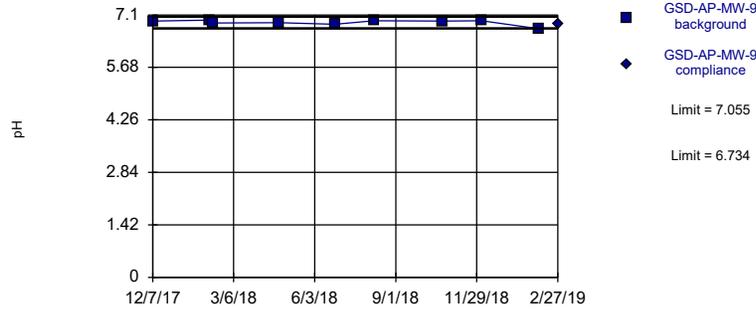
Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-8	GSD-AP-MW-8
12/7/2017	6.81	
2/8/2018	6.73	
4/25/2018	6.61	
6/26/2018	6.59	
8/8/2018	6.6	
10/23/2018	6.64	
12/4/2018	6.68	
2/6/2019	6.62	
2/27/2019		6.56

Within Limits

Prediction Limit
Intrawell Parametric

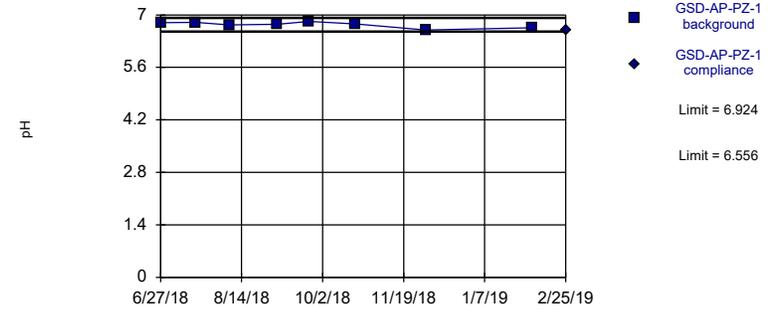


Background Data Summary: Mean=6.894, Std. Dev.=0.07091, n=9. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8079, critical = 0.764. Kappa = 2.268 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric

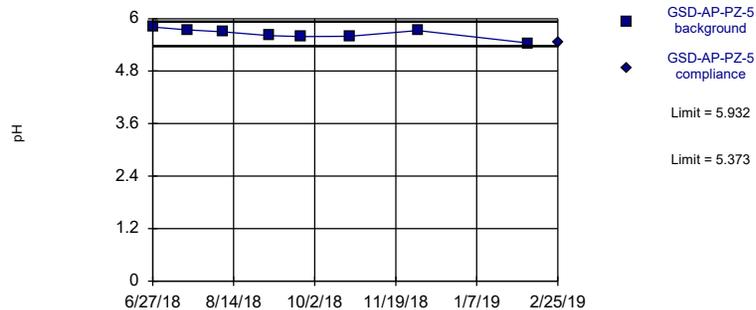


Background Data Summary: Mean=6.74, Std. Dev.=0.07635, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9273, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric

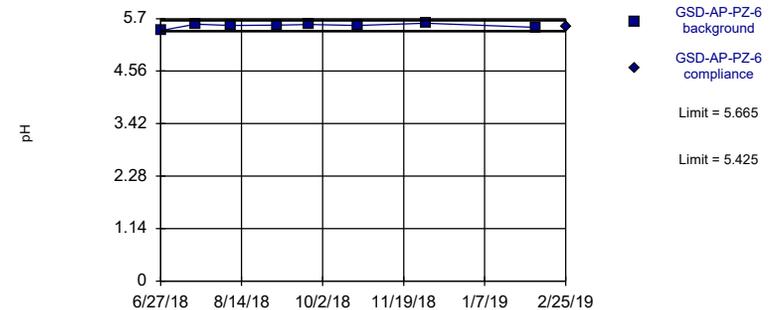


Background Data Summary: Mean=5.653, Std. Dev.=0.1161, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9481, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Within Limits

Prediction Limit
Intrawell Parametric



Background Data Summary: Mean=5.545, Std. Dev.=0.04986, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8699, critical = 0.749. Kappa = 2.407 (c=7, w=15, 1 of 3, event alpha = 0.05132). Report alpha = 0.0005016.

Constituent: pH Analysis Run 4/18/2019 12:10 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - Intrawell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-9	GSD-AP-MW-9
12/7/2017	6.93	
2/8/2018	6.96	
2/12/2018	6.88	
4/25/2018	6.89	
6/26/2018	6.85	
8/8/2018	6.94	
10/23/2018	6.93	
12/5/2018	6.94	
2/6/2019	6.73	
2/27/2019		6.85

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-PZ-1	GSD-AP-PZ-1
6/27/2018	6.79	
7/18/2018	6.8	
8/7/2018	6.73	
9/5/2018	6.75	
9/24/2018	6.83	
10/22/2018	6.76	
12/3/2018	6.6	
2/5/2019	6.66	
2/25/2019		6.6

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-PZ-5	GSD-AP-PZ-5
6/27/2018	5.81	
7/18/2018	5.74	
8/8/2018	5.7	
9/5/2018	5.61	
9/24/2018	5.59	
10/23/2018	5.6	
12/3/2018	5.73	
2/7/2019	5.44	
2/25/2019		5.46

Prediction Limit

Constituent: pH (pH) Analysis Run 4/18/2019 12:11 PM View: PL - IntraWell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-PZ-6	GSD-AP-PZ-6
6/27/2018	5.44	
7/18/2018	5.58	
8/8/2018	5.55	
9/5/2018	5.56	
9/24/2018	5.57	
10/23/2018	5.55	
12/3/2018	5.6	
2/7/2019	5.51	
2/25/2019		5.54

Interwell Prediction Limits

Interwell Prediction Limit Summary - Significant Results

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 11:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bq N	Bq Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	GSD-AP-MW-1	0.1	n/a	2/26/2019	1.15	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-10	0.1	n/a	2/26/2019	0.146	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-11	0.1	n/a	2/27/2019	0.14	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-2	0.1	n/a	2/26/2019	0.566	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-3	0.1	n/a	2/25/2019	1.08	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-4	0.1	n/a	2/26/2019	0.411	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-5	0.1	n/a	2/27/2019	0.457	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Calcium (mg/L)	GSD-AP-MW-1	28.79	n/a	2/26/2019	254	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-10	28.79	n/a	2/26/2019	53.3	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-11	28.79	n/a	2/27/2019	82.2	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-12	28.79	n/a	2/27/2019	60.2	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-2	28.79	n/a	2/26/2019	79.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-3	28.79	n/a	2/25/2019	70.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-5	28.79	n/a	2/27/2019	39.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-8	28.79	n/a	2/27/2019	53.4	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-9	28.79	n/a	2/27/2019	42.5	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-1	4.237	n/a	2/26/2019	5.92	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-10	4.237	n/a	2/26/2019	8.28	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-11	4.237	n/a	2/27/2019	6.2	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-12	4.237	n/a	2/27/2019	5.88	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-3	4.237	n/a	2/25/2019	6.55	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-4	4.237	n/a	2/26/2019	13	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-5	4.237	n/a	2/27/2019	7.38	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-6	4.237	n/a	2/26/2019	8.63	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-7	4.237	n/a	2/27/2019	6.21	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-8	4.237	n/a	2/27/2019	6.52	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-9	4.237	n/a	2/27/2019	6.77	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-1	178.6	n/a	2/26/2019	748	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-12	178.6	n/a	2/27/2019	257	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-3	178.6	n/a	2/25/2019	246	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-1	259	n/a	2/26/2019	1210	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-11	259	n/a	2/27/2019	360	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-12	259	n/a	2/27/2019	422	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-2	259	n/a	2/26/2019	372	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-3	259	n/a	2/25/2019	441	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2

Interwell Prediction Limit Summary - All Results

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 11:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bq N	Bq Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Boron (mg/L)	GSD-AP-MW-1	0.1	n/a	2/26/2019	1.15	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-10	0.1	n/a	2/26/2019	0.146	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-11	0.1	n/a	2/27/2019	0.14	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-12	0.1	n/a	2/27/2019	0.0494	No	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-2	0.1	n/a	2/26/2019	0.566	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-3	0.1	n/a	2/25/2019	1.08	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-4	0.1	n/a	2/26/2019	0.411	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-5	0.1	n/a	2/27/2019	0.457	Yes	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-6	0.1	n/a	2/26/2019	0.0491	No	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-7	0.1	n/a	2/27/2019	0.0548	No	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-8	0.1	n/a	2/27/2019	0.0428	No	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-MW-9	0.1	n/a	2/27/2019	0.0474	No	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-PZ-1	0.1	n/a	2/25/2019	0.1ND	No	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-PZ-5	0.1	n/a	2/25/2019	0.1ND	No	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Boron (mg/L)	GSD-AP-PZ-6	0.1	n/a	2/25/2019	0.1ND	No	24	n/a	n/a	41.67	n/a	n/a	0.002673	NP Inter (normality) 1 of 2
Calcium (mg/L)	GSD-AP-MW-1	28.79	n/a	2/26/2019	254	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-10	28.79	n/a	2/26/2019	53.3	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-11	28.79	n/a	2/27/2019	82.2	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-12	28.79	n/a	2/27/2019	60.2	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-2	28.79	n/a	2/26/2019	79.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-3	28.79	n/a	2/25/2019	70.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-4	28.79	n/a	2/26/2019	26.4	No	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-5	28.79	n/a	2/27/2019	39.6	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-6	28.79	n/a	2/26/2019	16	No	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-7	28.79	n/a	2/27/2019	15.6	No	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-8	28.79	n/a	2/27/2019	53.4	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-MW-9	28.79	n/a	2/27/2019	42.5	Yes	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-PZ-1	28.79	n/a	2/25/2019	25.3	No	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-PZ-5	28.79	n/a	2/25/2019	2.95	No	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Calcium (mg/L)	GSD-AP-PZ-6	28.79	n/a	2/25/2019	3.81	No	24	17.43	4.905	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-1	4.237	n/a	2/26/2019	5.92	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-10	4.237	n/a	2/26/2019	8.28	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-11	4.237	n/a	2/27/2019	6.2	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-12	4.237	n/a	2/27/2019	5.88	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-2	4.237	n/a	2/26/2019	3.03	No	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-3	4.237	n/a	2/25/2019	6.55	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-4	4.237	n/a	2/26/2019	13	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-5	4.237	n/a	2/27/2019	7.38	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-6	4.237	n/a	2/26/2019	8.63	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-7	4.237	n/a	2/27/2019	6.21	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-8	4.237	n/a	2/27/2019	6.52	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-MW-9	4.237	n/a	2/27/2019	6.77	Yes	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-PZ-1	4.237	n/a	2/25/2019	3.75	No	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-PZ-5	4.237	n/a	2/25/2019	3.95	No	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Chloride (mg/L)	GSD-AP-PZ-6	4.237	n/a	2/25/2019	4.2	No	24	3.288	0.4099	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-1	178.6	n/a	2/26/2019	748	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-10	178.6	n/a	2/26/2019	38.4	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-11	178.6	n/a	2/27/2019	135	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-12	178.6	n/a	2/27/2019	257	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-2	178.6	n/a	2/26/2019	148	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2

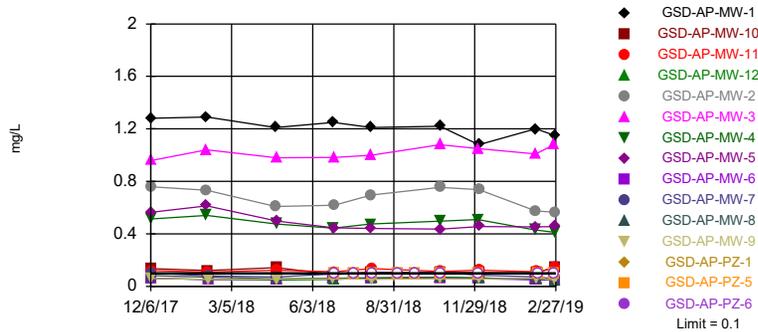
Interwell Prediction Limit Summary - All Results

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 11:09 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Sulfate (mg/L)	GSD-AP-MW-3	178.6	n/a	2/25/2019	246	Yes	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-4	178.6	n/a	2/26/2019	5.1	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-5	178.6	n/a	2/27/2019	24.7	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-6	178.6	n/a	2/26/2019	14	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-7	178.6	n/a	2/27/2019	8.98	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-8	178.6	n/a	2/27/2019	8.25	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-MW-9	178.6	n/a	2/27/2019	12.4	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-PZ-1	178.6	n/a	2/25/2019	3.86	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-PZ-5	178.6	n/a	2/25/2019	1ND	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Sulfate (mg/L)	GSD-AP-PZ-6	178.6	n/a	2/25/2019	1.53	No	24	63.78	49.58	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-1	259	n/a	2/26/2019	1210	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-10	259	n/a	2/26/2019	252	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-11	259	n/a	2/27/2019	360	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-12	259	n/a	2/27/2019	422	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-2	259	n/a	2/26/2019	372	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-3	259	n/a	2/25/2019	441	Yes	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-4	259	n/a	2/26/2019	191	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-5	259	n/a	2/27/2019	185	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-6	259	n/a	2/26/2019	91.3	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-7	259	n/a	2/27/2019	103	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-8	259	n/a	2/27/2019	211	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-MW-9	259	n/a	2/27/2019	186	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-PZ-1	259	n/a	2/25/2019	107	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-PZ-5	259	n/a	2/25/2019	40.7	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2
Total Dissolved Solids (mg/L)	GSD-AP-PZ-6	259	n/a	2/25/2019	31.3	No	24	158.1	43.56	0	None	No	0.0005016	Param Inter 1 of 2

Exceeds Limit: GSD-AP-MW-1, GSD-AP-MW-10, GSD-AP-MW-11, GSD-AP-MW-2...

Prediction Limit
Interwell Non-parametric

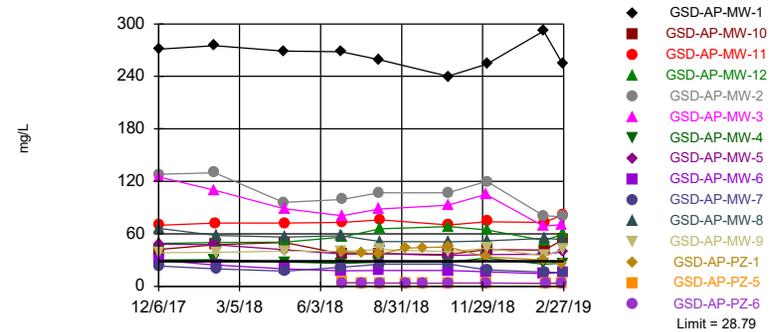


Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 24 background values. 41.67% NDs. Annual per-constituent alpha = 0.07716. Individual comparison alpha = 0.002673 (1 of 2). Comparing 15 points to limit.

Constituent: Boron Analysis Run 4/18/2019 11:02 AM View: PL's - Interwell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Exceeds Limit: GSD-AP-MW-1, GSD-AP-MW-10, GSD-AP-MW-11, GSD-AP-MW-12..

Prediction Limit
Interwell Parametric

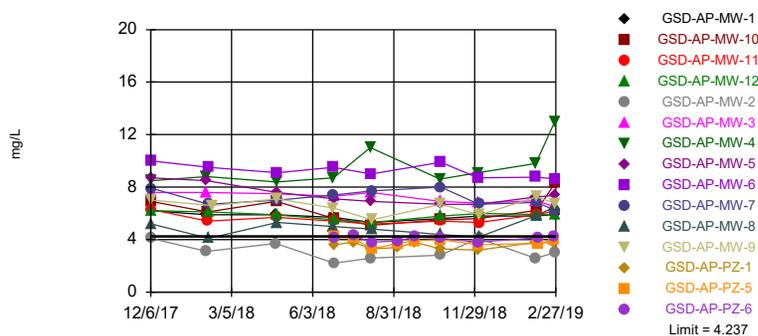


Background Data Summary: Mean=17.43, Std. Dev.=4.905, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9534, critical = 0.884. Kappa = 2.316 (c=7, w=15, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0005016. Comparing 15 points to limit.

Constituent: Calcium Analysis Run 4/18/2019 11:03 AM View: PL's - Interwell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Exceeds Limit: GSD-AP-MW-1, GSD-AP-MW-10, GSD-AP-MW-11, GSD-AP-MW-12..

Prediction Limit
Interwell Parametric

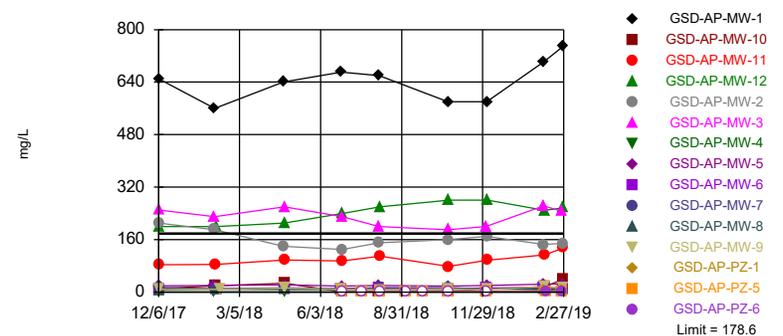


Background Data Summary: Mean=3.288, Std. Dev.=0.4099, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9623, critical = 0.884. Kappa = 2.316 (c=7, w=15, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0005016. Comparing 15 points to limit.

Constituent: Chloride Analysis Run 4/18/2019 11:03 AM View: PL's - Interwell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Exceeds Limit: GSD-AP-MW-1, GSD-AP-MW-12, GSD-AP-MW-3

Prediction Limit
Interwell Parametric



Background Data Summary: Mean=63.78, Std. Dev.=49.58, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9041, critical = 0.884. Kappa = 2.316 (c=7, w=15, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0005016. Comparing 15 points to limit.

Constituent: Sulfate Analysis Run 4/18/2019 11:03 AM View: PL's - Interwell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-3	GSD-AP-MW-2	GSD-AP-MW-12	GSD-AP-MW-11	GSD-AP-MW-9	GSD-AP-MW-8	GSD-AP-MW-7
12/6/2017	1.28	0.135	0.959	0.758	0.0605 (J)	0.12			
12/7/2017							0.0614 (J)	0.0828 (J)	0.102
2/6/2018	1.29		1.04	0.733					
2/7/2018		0.12				0.109			
2/8/2018					0.0527 (J)		0.0531 (J)	0.0691 (J)	0.0787 (J)
4/23/2018	1.21			0.608					
4/24/2018		0.144	0.979		0.0476 (J)	0.124			
4/25/2018							0.0551 (J)	0.0571 (J)	0.0734 (J)
6/26/2018	1.25						0.0568 (J)	0.0634 (J)	0.094 (J)
6/27/2018		0.0903 (J)	0.982	0.619	0.0539 (J)	0.111			
7/18/2018									
8/6/2018									
8/7/2018	1.21	0.106	1	0.697					
8/8/2018					0.0637 (J)	0.135	0.0524 (J)	0.0659 (J)	0.103
9/5/2018									
9/24/2018									
10/22/2018	1.22	0.107	1.08	0.754					
10/23/2018					0.0696 (J)	0.114	0.0576 (J)	0.0666 (J)	0.106
10/24/2018									
11/14/2018									
11/28/2018									
12/3/2018			1.05						
12/4/2018	1.08	0.103		0.737		0.124		0.0617 (J)	0.085 (J)
12/5/2018					0.0652 (J)		0.0561 (J)		
12/18/2018									
1/3/2019									
1/24/2019									
2/5/2019	1.2		1.01	0.575					
2/6/2019		0.105			0.051 (J)	0.112	0.0627 (J)	0.0586 (J)	0.0733 (J)
2/7/2019									
2/25/2019			1.08						
2/26/2019	1.15	0.146		0.566					
2/27/2019					0.0494 (J)	0.14	0.0474 (J)	0.0428 (J)	0.0548 (J)

Prediction Limit

Constituent: Boron (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-6	GSD-AP-MW-5	GSD-AP-MW-4	GSD-AP-MW-14 ...	GSD-AP-PZ-6	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...
12/6/2017									
12/7/2017	0.063 (J)	0.566	0.515						
2/6/2018		0.614	0.541						
2/7/2018									
2/8/2018	0.0508 (J)								
4/23/2018									
4/24/2018			0.475						
4/25/2018	0.0548 (J)	0.498							
6/26/2018	0.0571 (J)		0.444						
6/27/2018		0.446		<0.1	<0.1	<0.1	<0.1		
7/18/2018				<0.1	<0.1	<0.1	<0.1		
8/6/2018			0.474	<0.1					
8/7/2018	0.0571 (J)	0.442				<0.1			
8/8/2018					<0.1		<0.1		
9/5/2018				<0.1	<0.1	<0.1	<0.1		
9/24/2018				<0.1	<0.1	<0.1	<0.1		
10/22/2018			0.496			<0.1			
10/23/2018	0.0636 (J)	0.436			<0.1		<0.1		
10/24/2018				<0.1				0.0261 (J)	0.0357 (J)
11/14/2018								0.0209 (J)	0.0348 (J)
11/28/2018								0.0239 (J)	0.0313 (J)
12/3/2018	0.0568 (J)		0.51		<0.1	<0.1	<0.1		
12/4/2018									
12/5/2018		0.456		<0.1				<0.1	0.0363 (J)
12/18/2018								<0.1	0.033 (J)
1/3/2019								0.0209 (J)	0.036 (J)
1/24/2019								0.0271 (J)	0.0307 (J)
2/5/2019	0.0517 (J)	0.453	0.43	<0.1		<0.1		0.0245 (J)	0.0306 (J)
2/6/2019									
2/7/2019					<0.1		<0.1		
2/25/2019					<0.1	<0.1	<0.1		
2/26/2019	0.0491 (J)		0.411						
2/27/2019		0.457							

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-3	GSD-AP-MW-2	GSD-AP-MW-12	GSD-AP-MW-11	GSD-AP-MW-9	GSD-AP-MW-8	GSD-AP-MW-7
12/6/2017	271	42	125	128	49	70			
12/7/2017							38.7	66.1	23.4
2/6/2018	275		110	130					
2/7/2018		47.6				72.4			
2/8/2018					50		38.8	58	20.1
4/23/2018	269			95.9					
4/24/2018		50.1	88.8		50.5	72.3			
4/25/2018							40.3	56.3	17.4
6/26/2018	268						39.9	57.7	21.8
6/27/2018		37.1	80.8	99.4	56.3	73.1			
7/18/2018									
8/6/2018									
8/7/2018	259	37.4	88.5	107					
8/8/2018					65.7	76	42.3	51.2	25.4
9/5/2018									
9/24/2018									
10/22/2018	240	36.3	92.7	107					
10/23/2018					68.3	70.2	39.8	50.9	25.6
10/24/2018									
11/14/2018									
11/28/2018									
12/3/2018			105						
12/4/2018	254	42.1		120		74		51.9	19
12/5/2018					64.3		43.8		
12/18/2018									
1/3/2019									
1/24/2019									
2/5/2019	292		68.6	80.6					
2/6/2019		41.3			52.3	73.1	34.9	55	16.4
2/7/2019									
2/25/2019			70.6						
2/26/2019	254	53.3		79.6					
2/27/2019					60.2	82.2	42.5	53.4	15.6

Prediction Limit

Constituent: Calcium (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-6	GSD-AP-MW-5	GSD-AP-MW-4	GSD-AP-MW-14 ...	GSD-AP-PZ-6	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...
12/6/2017									
12/7/2017	29.8	48.2	30.1						
2/6/2018		47.8	30.6						
2/7/2018									
2/8/2018	24.3								
4/23/2018									
4/24/2018			27.8						
4/25/2018	19.8	41.8							
6/26/2018	17.8		26.2						
6/27/2018		36.9		16.6	3.89	39.4	4.56		
7/18/2018				15.3	3.8	38.4	3.92		
8/6/2018			27.5	13.8					
8/7/2018	18.3	37.6				36.7			
8/8/2018					3.89		3.74		
9/5/2018				12.1	3.78	43.6	3.38		
9/24/2018				11.8	3.73	44.5	3.25		
10/22/2018			27.7			45			
10/23/2018	18.1	35.3			3.79		3.37		
10/24/2018				10.2				18	28.3
11/14/2018								14.9	27.5
11/28/2018								14.8	20.7
12/3/2018	16.6		32.3		3.79	33.7	3.67		
12/4/2018									
12/5/2018		36.3		9.14				14.8	25.3
12/18/2018								16.4	20.9
1/3/2019								19.7	18.5
1/24/2019								19.6	17
2/5/2019	14.4	36.6	25.5	15.1		30.1		20.8	17.1
2/6/2019									
2/7/2019					3.75		2.89		
2/25/2019					3.81	25.3	2.95		
2/26/2019	16		26.4						
2/27/2019		39.6							

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-3	GSD-AP-MW-2	GSD-AP-MW-12	GSD-AP-MW-11	GSD-AP-MW-9	GSD-AP-MW-8	GSD-AP-MW-7
12/6/2017	6.2	6.9	7.6	4.1	6.2	6.3			
12/7/2017							7	5.2	7.9
2/6/2018	5.9		7.6	3.1					
2/7/2018		6.1				5.4			
2/8/2018					6.1			4.1	6.7
2/12/2018							6.6		
4/23/2018	5.9			3.7					
4/24/2018		6.9	7.5		5.9	5.7			
4/25/2018							7.1	5.3	7
6/26/2018	5.7						6.4	5	7.4
6/27/2018		5.6	7.3	2.2	5.5	5.4			
7/18/2018									
8/6/2018									
8/7/2018	5.3	5.1	7.6	2.6					
8/8/2018					5.3	5.2	5.5	4.8	7.7
9/5/2018									
9/24/2018									
10/22/2018	5.6	5.5	6.9	2.8					
10/23/2018					5.8	5.4	6.7	4.4	8
10/24/2018									
11/14/2018									
11/28/2018									
12/3/2018			6.8						
12/4/2018	5.8	5.6		4.1		5.3		4.2	6.7
12/5/2018					6		5.9		
12/18/2018									
1/3/2019									
1/24/2019									
2/5/2019	5.8		6.95	2.56					
2/6/2019		6.24			5.92	5.89	7.26	5.84	6.84
2/7/2019									
2/25/2019			6.55						
2/26/2019	5.92	8.28		3.03					
2/27/2019					5.88	6.2	6.77	6.52	6.21

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-6	GSD-AP-MW-5	GSD-AP-MW-4	GSD-AP-MW-14 ...	GSD-AP-PZ-6	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...
12/6/2017									
12/7/2017	10	8.7	8.5						
2/6/2018		8.5	8.8						
2/7/2018									
2/8/2018	9.5								
2/12/2018									
4/23/2018									
4/24/2018			8.4						
4/25/2018	9.1	7.6							
6/26/2018	9.5		8.7						
6/27/2018		7.1		3.1	4.1	3.6	4.2		
7/18/2018				3.4	4.3	3.8	4.1		
8/6/2018			11	2.8					
8/7/2018	9	6.9				3.3			
8/8/2018					3.8		3.3		
9/5/2018				2.8	3.9	3.4	3.7		
9/24/2018				3.1	4.2	3.8	3.9		
10/22/2018			8.6			3.3			
10/23/2018	9.9	6.7			4.1		4		
10/24/2018				2.8				3.3	4
11/14/2018								3.6	3.6
11/28/2018								3.5	3.5
12/3/2018	8.7		9.1		3.8	3.2	3.6		
12/4/2018									
12/5/2018		6.7		2.2				3.3	3.2
12/18/2018								3.6	3.4
1/3/2019								3.4	3.2
1/24/2019								3.91	3.15
2/5/2019	8.76	7.24	9.81	3.12		3.78		3.94	2.98
2/6/2019									
2/7/2019					4.15		3.72		
2/25/2019					4.2	3.75	3.95		
2/26/2019	8.63		13						
2/27/2019		7.38							

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-3	GSD-AP-MW-2	GSD-AP-MW-12	GSD-AP-MW-11	GSD-AP-MW-9	GSD-AP-MW-8	GSD-AP-MW-7
12/6/2017	650	11	250	210	200	83			
12/7/2017							9	6.5	14
2/6/2018	560		230	190					
2/7/2018		19				84			
2/8/2018					200			8.9	10
2/12/2018							8.3		
4/23/2018	640			140					
4/24/2018		27	260		210	98			
4/25/2018							12	7.9	11
6/26/2018	670						8.5	7.5	11
6/27/2018		<1	230	130	240	95			
7/18/2018									
8/6/2018									
8/7/2018	660	<1	200	150					
8/8/2018					260	110	6.7	7.3	13
9/5/2018									
9/24/2018									
10/22/2018	580	<1	190	160					
10/23/2018					280	78	9.4	7.8	13
10/24/2018									
11/14/2018									
11/28/2018									
12/3/2018			200						
12/4/2018	580	11		170		97		8.2	9.8
12/5/2018					280		7.8		
12/18/2018									
1/3/2019									
1/24/2019									
2/5/2019	702		263	145					
2/6/2019		16.8			249	113	17	9.53	10.8
2/7/2019									
2/25/2019			246						
2/26/2019	748	38.4		148					
2/27/2019					257	135	12.4	8.25	8.98

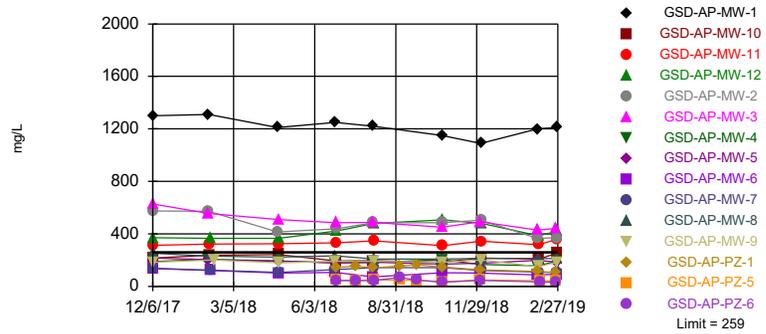
Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-6	GSD-AP-MW-5	GSD-AP-MW-4	GSD-AP-MW-14 ...	GSD-AP-PZ-6	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...
12/6/2017									
12/7/2017	10	19	<1						
2/6/2018		20	<1						
2/7/2018									
2/8/2018	11								
2/12/2018									
4/23/2018									
4/24/2018			<1						
4/25/2018	13	22							
6/26/2018	11		<1						
6/27/2018		18		120	<1	2.2 (J)	<1		
7/18/2018				120	<1	2.5 (J)	<1		
8/6/2018			<1	110					
8/7/2018	12	20				<1			
8/8/2018					<1		<1		
9/5/2018				86	<1	1.4 (J)	<1		
9/24/2018				80	<1	<1	<1		
10/22/2018			<1			1.7 (J)			
10/23/2018	11	18			<1		<1		
10/24/2018				68				44	16
11/14/2018								44	13
11/28/2018								46	11
12/3/2018	12		<1		<1	2.1 (J)	<1		
12/4/2018									
12/5/2018		20		54				51	12
12/18/2018								76	11
1/3/2019								94	10
1/24/2019								135	10.2
2/5/2019	13.7	24.3	5.38	126		3.99		183	10.4
2/6/2019									
2/7/2019					1.69		0.639 (J)		
2/25/2019					1.53	3.86	<1		
2/26/2019	14		5.1						
2/27/2019		24.7							

Exceeds Limit: GSD-AP-MW-1, GSD-AP-MW-11, GSD-AP-MW-12, GSD-AP-MW-2...

Prediction Limit Interwell Parametric



Background Data Summary: Mean=158.1, Std. Dev.=43.56, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9504, critical = 0.884. Kappa = 2.316 (c=7, w=15, 1 of 2, event alpha = 0.05132). Report alpha = 0.007498. Individual comparison alpha = 0.0005016. Comparing 15 points to limit.

Constituent: Total Dissolved Solids Analysis Run 4/18/2019 11:03 AM View: PL's - Interwell
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-3	GSD-AP-MW-2	GSD-AP-MW-12	GSD-AP-MW-11	GSD-AP-MW-9	GSD-AP-MW-8	GSD-AP-MW-7
12/6/2017	1300	215	628	574	371	312			
12/7/2017							183	253	137
2/6/2018	1310		556	572					
2/7/2018		237				323			
2/8/2018					367			229	124
2/12/2018							201		
4/23/2018	1210			414					
4/24/2018		242	510		365	324			
4/25/2018							180	223	106
6/26/2018	1250						191	232	129
6/27/2018		194	486	440	421	333			
7/18/2018									
8/6/2018									
8/7/2018	1220	195	487	485					
8/8/2018					479	346	192	208	142
9/5/2018									
9/24/2018									
10/22/2018	1150	184	450	484					
10/23/2018					507	311	185	209	142
10/24/2018									
11/14/2018									
11/28/2018									
12/3/2018			492						
12/4/2018	1090	215		504		343		213	121
12/5/2018					479		200		
12/18/2018									
1/3/2019									
1/24/2019									
2/5/2019	1200		428	366					
2/6/2019		208			385	317	151	212	108
2/7/2019									
2/25/2019			441						
2/26/2019	1210	252		372					
2/27/2019					422	360	186	211	103

Prediction Limit

Constituent: Total Dissolved Solids (mg/L) Analysis Run 4/18/2019 11:09 AM View: PL's - Interwell
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-6	GSD-AP-MW-5	GSD-AP-MW-4	GSD-AP-MW-14 ...	GSD-AP-PZ-6	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...
12/6/2017									
12/7/2017	136	215	189						
2/6/2018		204	206						
2/7/2018									
2/8/2018	122								
2/12/2018									
4/23/2018									
4/24/2018			193						
4/25/2018	102	192							
6/26/2018	106		180						
6/27/2018		180		219	44	144	48.7		
7/18/2018				195	42.7	156	46		
8/6/2018			182	175					
8/7/2018	71.3	183				140			
8/8/2018					46		48		
9/5/2018				153	67.3	154	47.3		
9/24/2018				127	49.3	165	44.7		
10/22/2018			204			148			
10/23/2018	105	169			31.3		35.3		
10/24/2018				125				107	184
11/14/2018								96.7	170
11/28/2018								102	167
12/3/2018	102		168		46	127	48.7		
12/4/2018									
12/5/2018		177		101				103	185
12/18/2018								126	164
1/3/2019								191	167
1/24/2019								212	137
2/5/2019	86.7	198	158	180		113		269	138
2/6/2019									
2/7/2019					32.7		42.7		
2/25/2019					31.3	107	40.7		
2/26/2019	91.3		191						
2/27/2019		185							

Trend Tests - Prediction Limit Exceedances

Trend Test Summary Table - Significant Results

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 11:43 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Normality</u>	<u>Xform</u>	<u>Alpha</u>	<u>Method</u>
Chloride (mg/L)	GSD-AP-MW-17 (bg)	-2.537	-31	-25	Yes	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-16 (bg)	525.4	35	25	Yes	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-17 (bg)	-11.12	-27	-25	Yes	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-16 (bg)	580.6	28	25	Yes	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-3	-119.7	-26	-25	Yes	9	0	n/a	n/a	0.01	NP

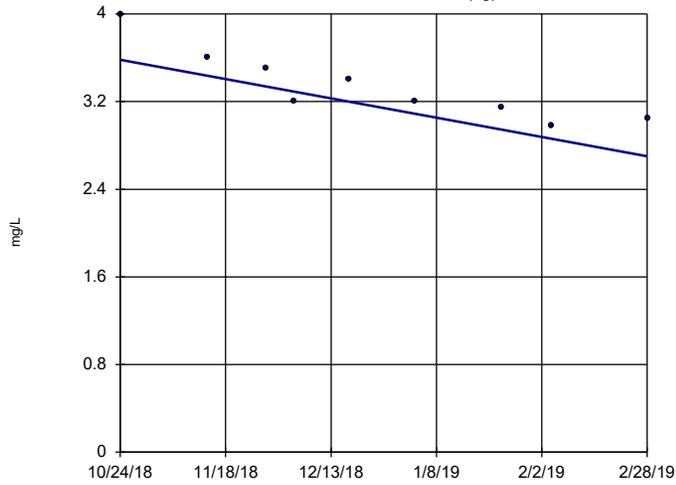
Trend Test Summary Table - All Results

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR Printed 4/18/2019, 11:43 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Boron (mg/L)	GSD-AP-MW-1	-0.1017	-23	-25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-10	-0.008012	-4	-25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-11	0.008032	11	25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-14 (bg)	0	0	25	No	9	100	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-16 (bg)	0.009899	8	25	No	9	33.33	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-17 (bg)	-0.01958	-20	-25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-2	-0.08527	-14	-25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-3	0.05896	21	25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-4	-0.06833	-18	-25	No	9	0	n/a	n/a	0.01	NP
Boron (mg/L)	GSD-AP-MW-5	-0.06293	-12	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-1	-17.41	-15	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-10	1.386	2	25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-11	4.292	19	25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-12	10.58	18	25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-14 (bg)	-12.68	-10	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-16 (bg)	23.44	21	25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-17 (bg)	-29.71	-24	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-2	-30.2	-15	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-3	-34.59	-18	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-5	-7.388	-18	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-8	-7.324	-18	-25	No	9	0	n/a	n/a	0.01	NP
Calcium (mg/L)	GSD-AP-MW-9	2.758	12	25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-1	-0.124	-6	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-10	0	0	25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-11	0	-1	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-12	-0.2048	-10	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-14 (bg)	0	2	25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-16 (bg)	2.287	22	25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-17 (bg)	-2.537	-31	-25	Yes	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-3	-0.8642	-25	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-4	1.766	20	25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-5	-1.217	-17	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-6	-0.918	-23	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-7	-0.6995	-9	-25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-8	0.4872	6	25	No	9	0	n/a	n/a	0.01	NP
Chloride (mg/L)	GSD-AP-MW-9	-0.02177	0	25	No	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-1	60.51	13	25	No	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-12	58.43	22	25	No	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-14 (bg)	-118.5	-5	-25	No	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-16 (bg)	525.4	35	25	Yes	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-17 (bg)	-11.12	-27	-25	Yes	9	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	GSD-AP-MW-3	-9.959	-4	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-1	-102.6	-19	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-11	28.52	14	25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-12	59.8	13	25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-14 (bg)	-208.6	-10	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-16 (bg)	580.6	28	25	Yes	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-17 (bg)	-136.7	-21	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-2	-111.9	-16	-25	No	9	0	n/a	n/a	0.01	NP
Total Dissolved Solids (mg/L)	GSD-AP-MW-3	-119.7	-26	-25	Yes	9	0	n/a	n/a	0.01	NP

Sen's Slope Estimator

GSD-AP-MW-17 (bg)

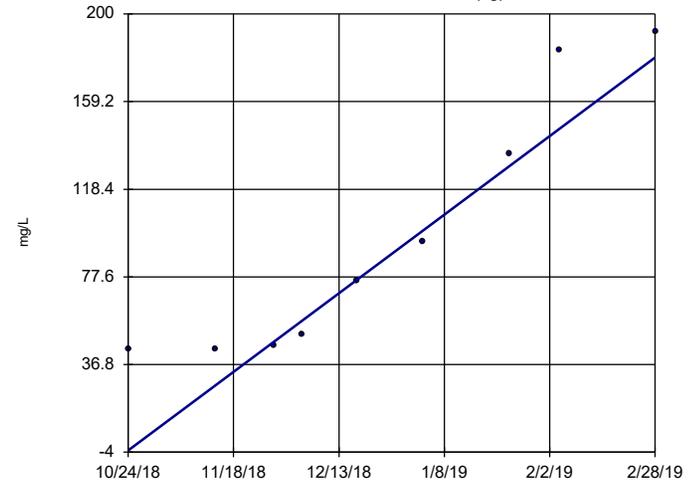


n = 9
 Slope = -2.537
 units per year.
 Mann-Kendall
 statistic = -31
 critical = -25
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Chloride Analysis Run 4/18/2019 11:36 AM View: Trend Testing
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Sen's Slope Estimator

GSD-AP-MW-16 (bg)

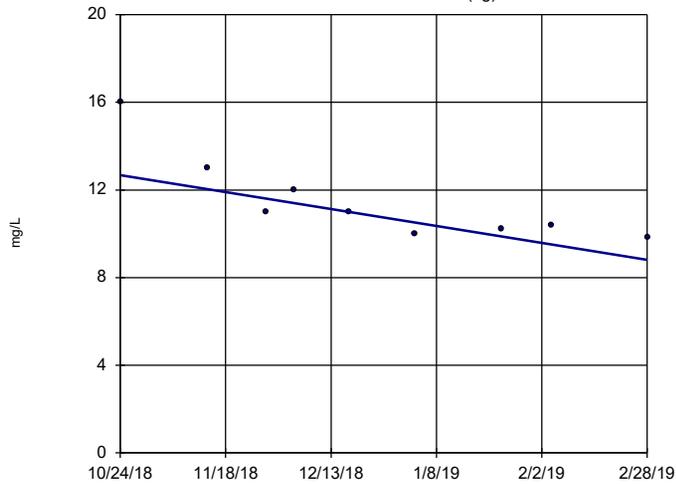


n = 9
 Slope = 525.4
 units per year.
 Mann-Kendall
 statistic = 35
 critical = 25
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Sulfate Analysis Run 4/18/2019 11:36 AM View: Trend Testing
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Sen's Slope Estimator

GSD-AP-MW-17 (bg)

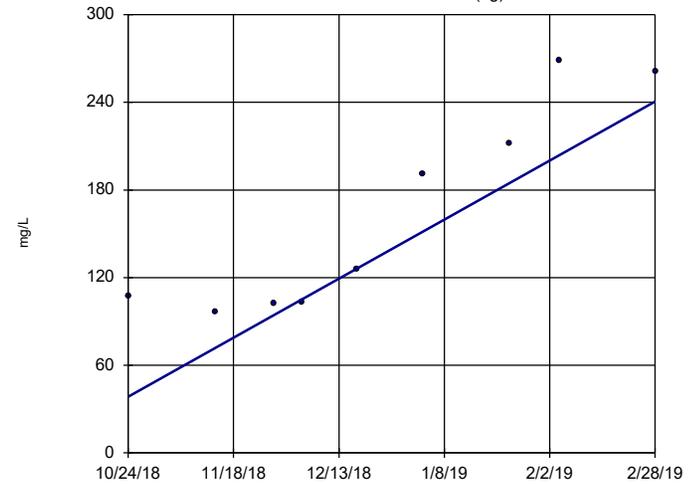


n = 9
 Slope = -11.12
 units per year.
 Mann-Kendall
 statistic = -27
 critical = -25
 Decreasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Sulfate Analysis Run 4/18/2019 11:36 AM View: Trend Testing
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Sen's Slope Estimator

GSD-AP-MW-16 (bg)

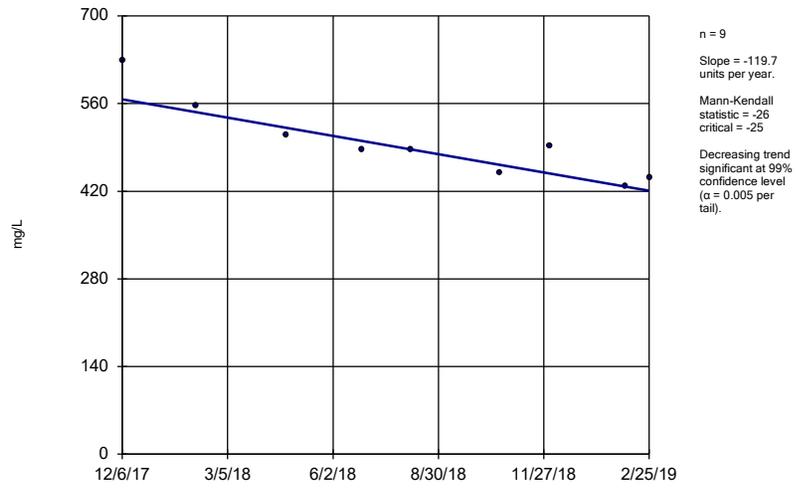


n = 9
 Slope = 580.6
 units per year.
 Mann-Kendall
 statistic = 28
 critical = 25
 Increasing trend
 significant at 99%
 confidence level
 ($\alpha = 0.005$ per
 tail).

Constituent: Total Dissolved Solids Analysis Run 4/18/2019 11:36 AM View: Trend Testing
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Sen's Slope Estimator

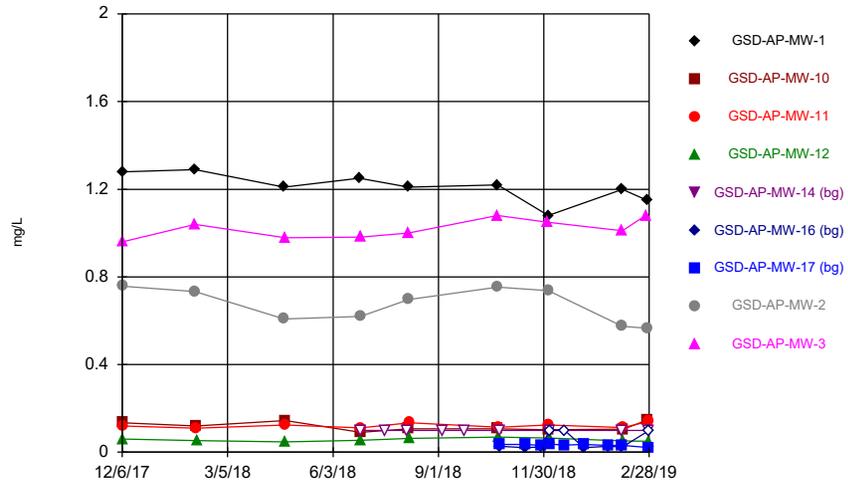
GSD-AP-MW-3



Constituent: Total Dissolved Solids Analysis Run 4/18/2019 11:36 AM View: Trend Testing
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

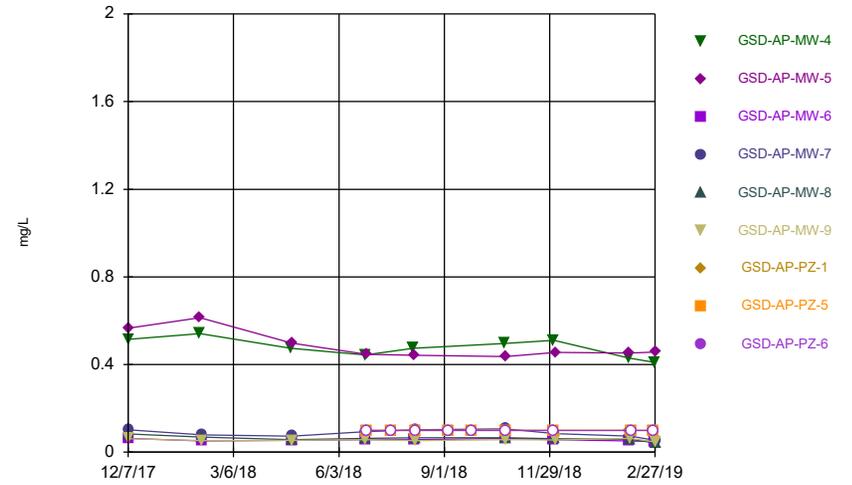
Time Series

Time Series



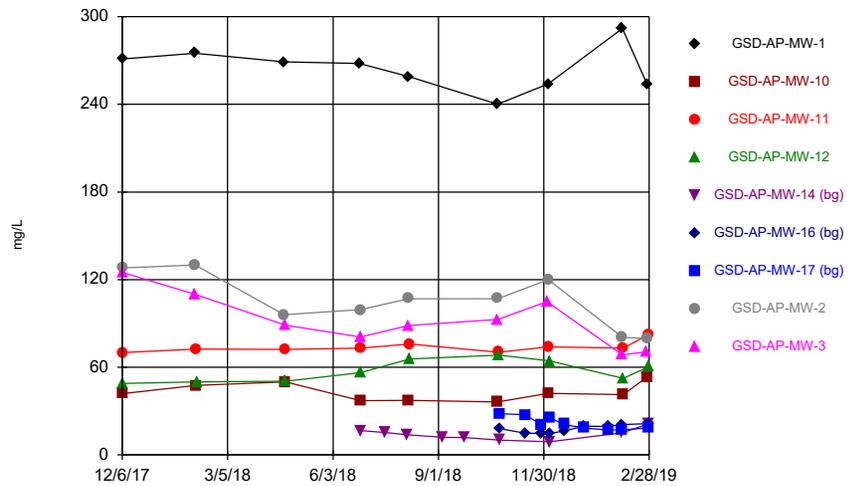
Constituent: Boron Analysis Run 4/18/2019 11:51 AM View: Descriptive
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



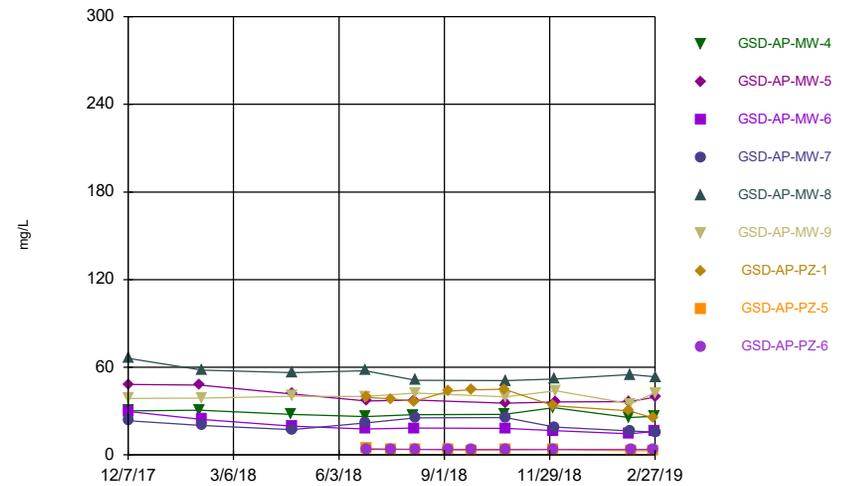
Constituent: Boron Analysis Run 4/18/2019 11:51 AM View: Descriptive
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



Constituent: Calcium Analysis Run 4/18/2019 11:51 AM View: Descriptive
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



Constituent: Calcium Analysis Run 4/18/2019 11:51 AM View: Descriptive
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series

Constituent: Boron (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-11	GSD-AP-MW-12	GSD-AP-MW-14 ...	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...	GSD-AP-MW-2	GSD-AP-MW-3
12/6/2017	1.28	0.135	0.12	0.0605 (J)				0.758	0.959
2/6/2018	1.29							0.733	1.04
2/7/2018		0.12	0.109						
2/8/2018				0.0527 (J)					
4/23/2018	1.21							0.608	
4/24/2018		0.144	0.124	0.0476 (J)					0.979
6/26/2018	1.25								
6/27/2018		0.0903 (J)	0.111	0.0539 (J)	<0.1			0.619	0.982
7/18/2018					<0.1				
8/6/2018					<0.1				
8/7/2018	1.21	0.106						0.697	1
8/8/2018			0.135	0.0637 (J)					
9/5/2018					<0.1				
9/24/2018					<0.1				
10/22/2018	1.22	0.107						0.754	1.08
10/23/2018			0.114	0.0696 (J)					
10/24/2018					<0.1	0.0261 (J)	0.0357 (J)		
11/14/2018						0.0209 (J)	0.0348 (J)		
11/28/2018						0.0239 (J)	0.0313 (J)		
12/3/2018									1.05
12/4/2018	1.08	0.103	0.124					0.737	
12/5/2018				0.0652 (J)	<0.1	<0.1	0.0363 (J)		
12/18/2018						<0.1	0.033 (J)		
1/3/2019						0.0209 (J)	0.036 (J)		
1/24/2019						0.0271 (J)	0.0307 (J)		
2/5/2019	1.2				<0.1	0.0245 (J)	0.0306 (J)	0.575	1.01
2/6/2019		0.105	0.112	0.051 (J)					
2/25/2019									1.08
2/26/2019	1.15	0.146						0.566	
2/27/2019			0.14	0.0494 (J)					
2/28/2019					<0.1	<0.1	0.0206 (J)		

Time Series

Constituent: Boron (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-4	GSD-AP-MW-5	GSD-AP-MW-6	GSD-AP-MW-7	GSD-AP-MW-8	GSD-AP-MW-9	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-PZ-6
12/7/2017	0.515	0.566	0.063 (J)	0.102	0.0828 (J)	0.0614 (J)			
2/6/2018	0.541	0.614							
2/8/2018			0.0508 (J)	0.0787 (J)	0.0691 (J)	0.0531 (J)			
4/24/2018	0.475								
4/25/2018		0.498	0.0548 (J)	0.0734 (J)	0.0571 (J)	0.0551 (J)			
6/26/2018	0.444		0.0571 (J)	0.094 (J)	0.0634 (J)	0.0568 (J)			
6/27/2018		0.446					<0.1	<0.1	<0.1
7/18/2018							<0.1	<0.1	<0.1
8/6/2018	0.474								
8/7/2018		0.442	0.0571 (J)				<0.1		
8/8/2018				0.103	0.0659 (J)	0.0524 (J)		<0.1	<0.1
9/5/2018							<0.1	<0.1	<0.1
9/24/2018							<0.1	<0.1	<0.1
10/22/2018	0.496						<0.1		
10/23/2018		0.436	0.0636 (J)	0.106	0.0666 (J)	0.0576 (J)		<0.1	<0.1
12/3/2018	0.51		0.0568 (J)				<0.1	<0.1	<0.1
12/4/2018				0.085 (J)	0.0617 (J)				
12/5/2018		0.456				0.0561 (J)			
2/5/2019	0.43	0.453	0.0517 (J)				<0.1		
2/6/2019				0.0733 (J)	0.0586 (J)	0.0627 (J)			
2/7/2019								<0.1	<0.1
2/25/2019							<0.1	<0.1	<0.1
2/26/2019	0.411		0.0491 (J)						
2/27/2019		0.457		0.0548 (J)	0.0428 (J)	0.0474 (J)			

Time Series

Constituent: Calcium (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-11	GSD-AP-MW-12	GSD-AP-MW-14 ...	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...	GSD-AP-MW-2	GSD-AP-MW-3
12/6/2017	271	42	70	49				128	125
2/6/2018	275							130	110
2/7/2018		47.6	72.4						
2/8/2018				50					
4/23/2018	269							95.9	
4/24/2018		50.1	72.3	50.5					88.8
6/26/2018	268								
6/27/2018		37.1	73.1	56.3	16.6			99.4	80.8
7/18/2018					15.3				
8/6/2018					13.8				
8/7/2018	259	37.4						107	88.5
8/8/2018			76	65.7					
9/5/2018					12.1				
9/24/2018					11.8				
10/22/2018	240	36.3						107	92.7
10/23/2018			70.2	68.3					
10/24/2018					10.2	18	28.3		
11/14/2018						14.9	27.5		
11/28/2018						14.8	20.7		
12/3/2018									105
12/4/2018	254	42.1	74					120	
12/5/2018				64.3	9.14	14.8	25.3		
12/18/2018						16.4	20.9		
1/3/2019						19.7	18.5		
1/24/2019						19.6	17		
2/5/2019	292				15.1	20.8	17.1	80.6	68.6
2/6/2019		41.3	73.1	52.3					
2/25/2019									70.6
2/26/2019	254	53.3						79.6	
2/27/2019			82.2	60.2					
2/28/2019					21.4	21.5	18.6		

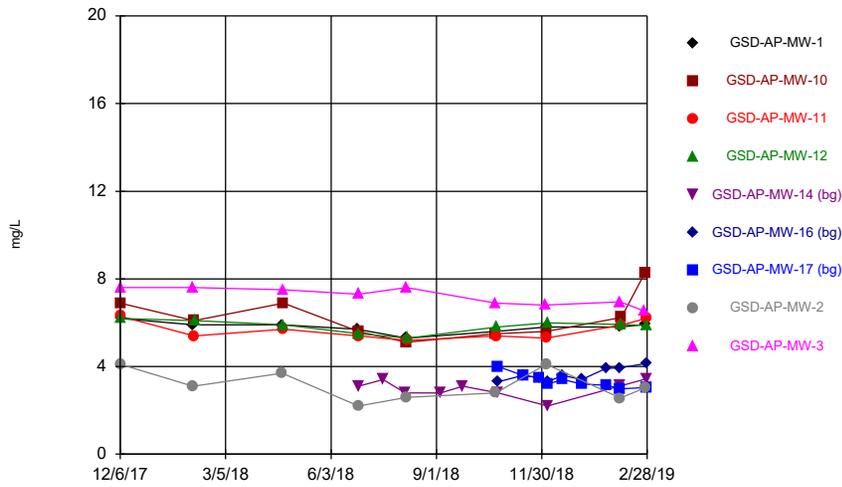
Time Series

Constituent: Calcium (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

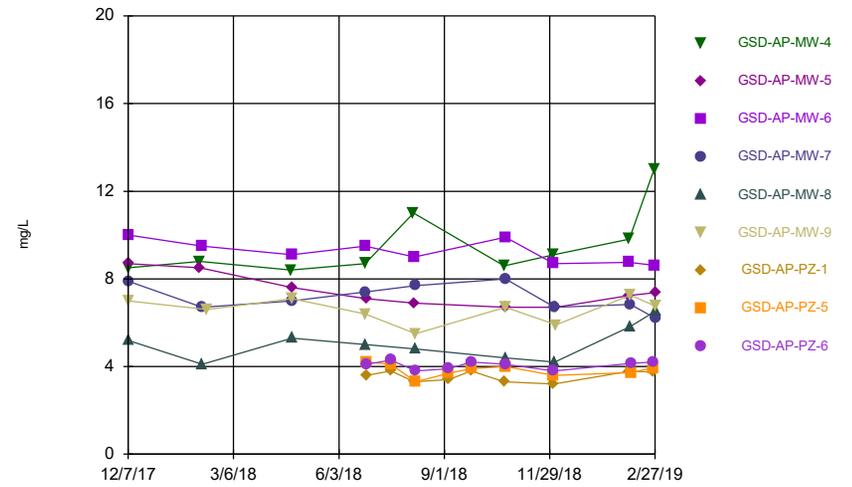
	GSD-AP-MW-4	GSD-AP-MW-5	GSD-AP-MW-6	GSD-AP-MW-7	GSD-AP-MW-8	GSD-AP-MW-9	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-PZ-6
12/7/2017	30.1	48.2	29.8	23.4	66.1	38.7			
2/6/2018	30.6	47.8							
2/8/2018			24.3	20.1	58	38.8			
4/24/2018	27.8								
4/25/2018		41.8	19.8	17.4	56.3	40.3			
6/26/2018	26.2		17.8	21.8	57.7	39.9			
6/27/2018		36.9					39.4	4.56	3.89
7/18/2018							38.4	3.92	3.8
8/6/2018	27.5								
8/7/2018		37.6	18.3				36.7		
8/8/2018				25.4	51.2	42.3		3.74	3.89
9/5/2018							43.6	3.38	3.78
9/24/2018							44.5	3.25	3.73
10/22/2018	27.7						45		
10/23/2018		35.3	18.1	25.6	50.9	39.8		3.37	3.79
12/3/2018	32.3		16.6				33.7	3.67	3.79
12/4/2018				19	51.9				
12/5/2018		36.3				43.8			
2/5/2019	25.5	36.6	14.4				30.1		
2/6/2019				16.4	55	34.9			
2/7/2019								2.89	3.75
2/25/2019							25.3	2.95	3.81
2/26/2019	26.4		16						
2/27/2019		39.6		15.6	53.4	42.5			

Time Series



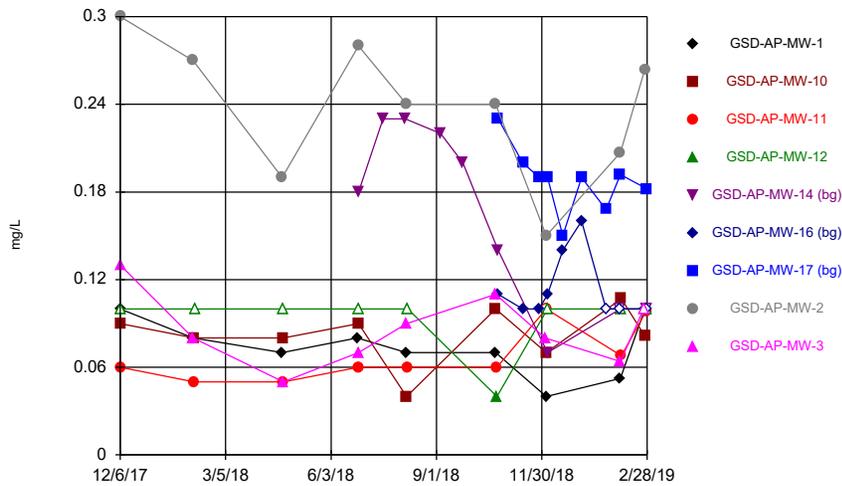
Constituent: Chloride Analysis Run 4/18/2019 11:51 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



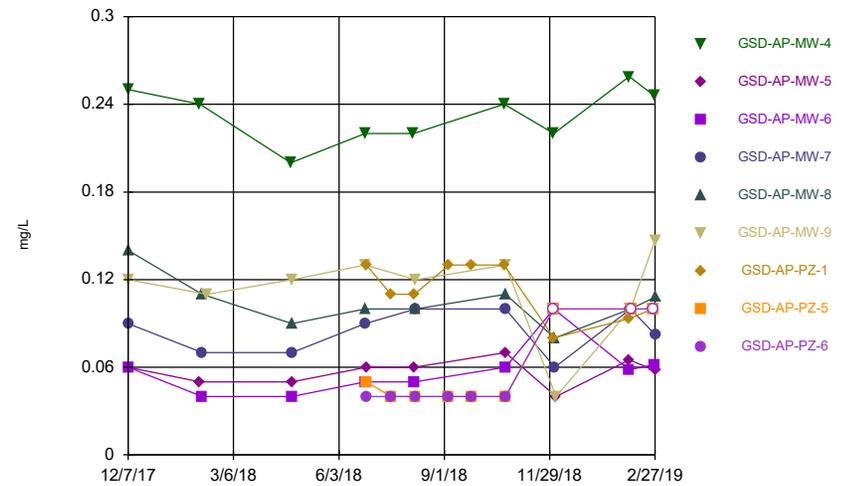
Constituent: Chloride Analysis Run 4/18/2019 11:51 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



Constituent: Fluoride Analysis Run 4/18/2019 11:51 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



Constituent: Fluoride Analysis Run 4/18/2019 11:51 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series

Constituent: Chloride (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-11	GSD-AP-MW-12	GSD-AP-MW-14 ...	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...	GSD-AP-MW-2	GSD-AP-MW-3
12/6/2017	6.2	6.9	6.3	6.2				4.1	7.6
2/6/2018	5.9							3.1	7.6
2/7/2018		6.1	5.4						
2/8/2018				6.1					
4/23/2018	5.9							3.7	
4/24/2018		6.9	5.7	5.9					7.5
6/26/2018	5.7								
6/27/2018		5.6	5.4	5.5	3.1			2.2	7.3
7/18/2018					3.4				
8/6/2018					2.8				
8/7/2018	5.3	5.1						2.6	7.6
8/8/2018			5.2	5.3					
9/5/2018					2.8				
9/24/2018					3.1				
10/22/2018	5.6	5.5						2.8	6.9
10/23/2018			5.4	5.8					
10/24/2018					2.8	3.3	4		
11/14/2018						3.6	3.6		
11/28/2018						3.5	3.5		
12/3/2018									6.8
12/4/2018	5.8	5.6	5.3					4.1	
12/5/2018				6	2.2	3.3	3.2		
12/18/2018						3.6	3.4		
1/3/2019						3.4	3.2		
1/24/2019						3.91	3.15		
2/5/2019	5.8				3.12	3.94	2.98	2.56	6.95
2/6/2019		6.24	5.89	5.92					
2/25/2019									6.55
2/26/2019	5.92	8.28						3.03	
2/27/2019			6.2	5.88					
2/28/2019					3.45	4.15	3.05		

Time Series

Constituent: Chloride (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-4	GSD-AP-MW-5	GSD-AP-MW-6	GSD-AP-MW-7	GSD-AP-MW-8	GSD-AP-MW-9	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-PZ-6
12/7/2017	8.5	8.7	10	7.9	5.2	7			
2/6/2018	8.8	8.5							
2/8/2018			9.5	6.7	4.1				
2/12/2018						6.6			
4/24/2018	8.4								
4/25/2018		7.6	9.1	7	5.3	7.1			
6/26/2018	8.7		9.5	7.4	5	6.4			
6/27/2018		7.1					3.6	4.2	4.1
7/18/2018							3.8	4.1	4.3
8/6/2018	11								
8/7/2018		6.9	9				3.3		
8/8/2018				7.7	4.8	5.5		3.3	3.8
9/5/2018							3.4	3.7	3.9
9/24/2018							3.8	3.9	4.2
10/22/2018	8.6						3.3		
10/23/2018		6.7	9.9	8	4.4	6.7		4	4.1
12/3/2018	9.1		8.7				3.2	3.6	3.8
12/4/2018				6.7	4.2				
12/5/2018		6.7				5.9			
2/5/2019	9.81	7.24	8.76				3.78		
2/6/2019				6.84	5.84	7.26			
2/7/2019								3.72	4.15
2/25/2019							3.75	3.95	4.2
2/26/2019	13		8.63						
2/27/2019		7.38		6.21	6.52	6.77			

Time Series

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-11	GSD-AP-MW-12	GSD-AP-MW-14 ...	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...	GSD-AP-MW-2	GSD-AP-MW-3
12/6/2017	0.1	0.09 (J)	0.06 (J)	<0.1				0.3	0.13
2/6/2018	0.08 (J)							0.27	0.08 (J)
2/7/2018		0.08 (J)	0.05 (J)						
2/8/2018				<0.1					
4/23/2018	0.07 (J)							0.19	
4/24/2018		0.08 (J)	0.05 (J)	<0.1					0.05 (J)
6/26/2018	0.08 (J)								
6/27/2018		0.09 (J)	0.06 (J)	<0.1	0.18			0.28	0.07 (J)
7/18/2018					0.23				
8/6/2018					0.23				
8/7/2018	0.07 (J)	0.04 (J)						0.24	0.09 (J)
8/8/2018			0.06 (J)	<0.1					
9/5/2018					0.22				
9/24/2018					0.2				
10/22/2018	0.07 (J)	0.1						0.24	0.11
10/23/2018			0.06 (J)	0.04 (J)					
10/24/2018					0.14	0.11	0.23		
11/14/2018						0.1	0.2		
11/28/2018						0.1	0.19		
12/3/2018									0.08 (J)
12/4/2018	0.04 (J)	0.07 (J)	<0.1					0.15	
12/5/2018				<0.1	0.07 (J)	0.11	0.19		
12/18/2018						0.14	0.15		
1/3/2019						0.16	0.19		
1/24/2019						<0.1	0.168		
2/5/2019	0.0525 (J)				<0.1	<0.1	0.192	0.207	0.064 (J)
2/6/2019		0.107	0.0678 (J)	<0.1					
2/25/2019									<0.1
2/26/2019	<0.1	0.0813 (J)						0.264	
2/27/2019			0.0985 (J)	<0.1					
2/28/2019					<0.1	<0.1	0.182		

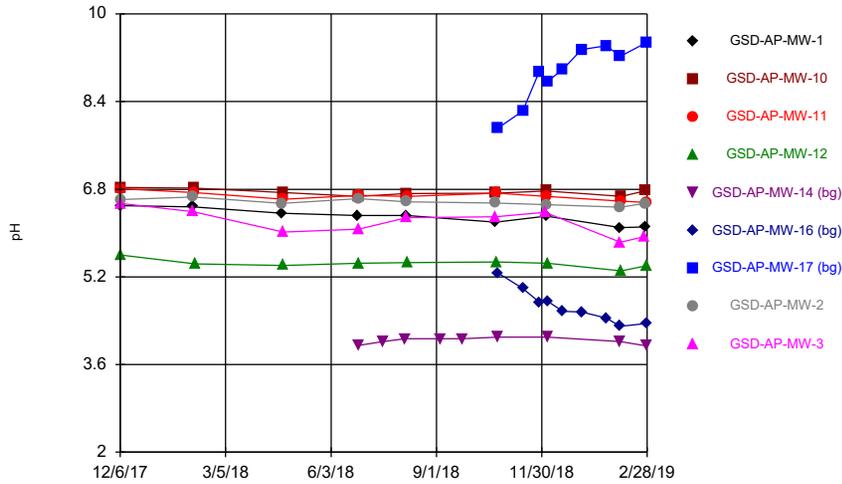
Time Series

Constituent: Fluoride (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

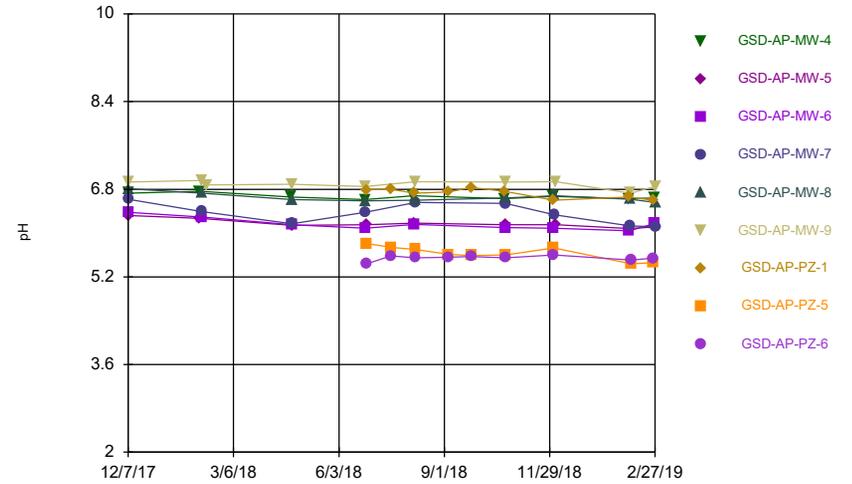
	GSD-AP-MW-4	GSD-AP-MW-5	GSD-AP-MW-6	GSD-AP-MW-7	GSD-AP-MW-8	GSD-AP-MW-9	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-PZ-6
12/7/2017	0.25	0.06 (J)	0.06 (J)	0.09 (J)	0.14	0.12			
2/6/2018	0.24	0.05 (J)							
2/8/2018			0.04 (J)	0.07 (J)	0.11				
2/12/2018						0.11			
4/24/2018	0.2								
4/25/2018		0.05 (J)	0.04 (J)	0.07 (J)	0.09 (J)	0.12			
6/26/2018	0.22		0.05 (J)	0.09 (J)	0.1	0.13			
6/27/2018		0.06 (J)					0.13	0.05 (J)	0.04 (J)
7/18/2018							0.11	0.04 (J)	0.04 (J)
8/6/2018	0.22								
8/7/2018		0.06 (J)	0.05 (J)				0.11		
8/8/2018				0.1	0.1	0.12		0.04 (J)	0.04 (J)
9/5/2018							0.13	0.04 (J)	0.04 (J)
9/24/2018							0.13	0.04 (J)	0.04 (J)
10/22/2018	0.24						0.13		
10/23/2018		0.07 (J)	0.06 (J)	0.1	0.11	0.13		0.04 (J)	0.04 (J)
12/3/2018	0.22		<0.1				0.08 (J)	<0.1	<0.1
12/4/2018				0.06 (J)	0.08 (J)				
12/5/2018		0.04 (J)				0.04 (J)			
2/5/2019	0.259	0.0651 (J)	0.0583 (J)				0.0934 (J)		
2/6/2019				<0.1	<0.1	<0.1			
2/7/2019								<0.1	<0.1
2/25/2019							<0.1	<0.1	<0.1
2/26/2019	0.246		0.0618 (J)						
2/27/2019		0.0578 (J)		0.0824 (J)	0.108	0.147			

Time Series



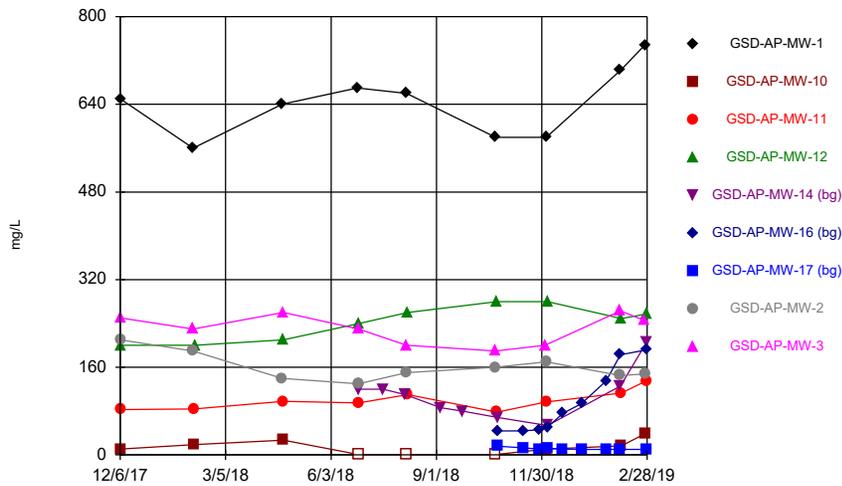
Constituent: pH Analysis Run 4/18/2019 11:51 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



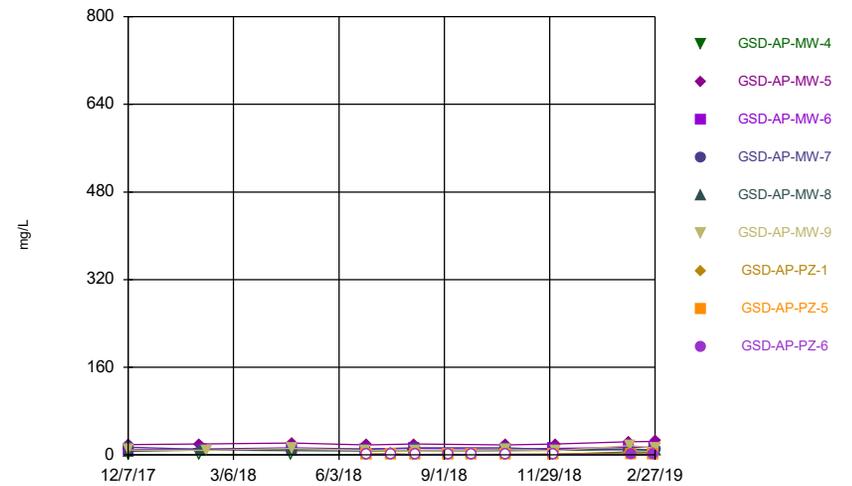
Constituent: pH Analysis Run 4/18/2019 11:51 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



Constituent: Sulfate Analysis Run 4/18/2019 11:51 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



Constituent: Sulfate Analysis Run 4/18/2019 11:51 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series

Constituent: pH (pH) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-11	GSD-AP-MW-12	GSD-AP-MW-14 ...	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...	GSD-AP-MW-2	GSD-AP-MW-3
12/6/2017	6.5	6.83	6.81	5.6				6.61	6.54
2/6/2018	6.48							6.66	6.39
2/7/2018		6.82	6.74						
2/8/2018				5.44					
4/23/2018	6.36							6.54	
4/24/2018		6.74	6.62	5.41					6.02
6/26/2018	6.32								
6/27/2018		6.67	6.69	5.45	3.95			6.63	6.07
7/18/2018					4.02				
8/6/2018					4.07				
8/7/2018	6.32	6.72						6.57	6.28
8/8/2018			6.67	5.46					
9/5/2018					4.07				
9/24/2018					4.07				
10/22/2018	6.2	6.73						6.55	6.3
10/23/2018			6.73	5.47					
10/24/2018					4.1	5.27	7.92		
11/14/2018						4.99	8.23		
11/28/2018						4.74	8.95		
12/3/2018									6.38
12/4/2018	6.31	6.77	6.67					6.52	
12/5/2018				5.45	4.1	4.76	8.77		
12/18/2018						4.57	8.99		
1/3/2019						4.56	9.35		
1/24/2019						4.45	9.42		
2/5/2019	6.1				4.02	4.3	9.23	6.47	5.83
2/6/2019		6.67	6.58	5.31					
2/25/2019									5.93
2/26/2019	6.11	6.77						6.54	
2/27/2019			6.56	5.4					
2/28/2019					3.94 (E)	4.35	9.48		

Time Series

Constituent: pH (pH) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-4	GSD-AP-MW-5	GSD-AP-MW-6	GSD-AP-MW-7	GSD-AP-MW-8	GSD-AP-MW-9	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-PZ-6
12/7/2017	6.73	6.32	6.38	6.62	6.81	6.93			
2/6/2018	6.76	6.27							
2/8/2018			6.29	6.39	6.73	6.96			
2/12/2018						6.88			
4/24/2018	6.66								
4/25/2018		6.14	6.15	6.17	6.61	6.89			
6/26/2018	6.61		6.09	6.38	6.59	6.85			
6/27/2018		6.15					6.79	5.81	5.44
7/18/2018							6.8	5.74	5.58
8/6/2018	6.68								
8/7/2018		6.18	6.16				6.73		
8/8/2018				6.56	6.6	6.94		5.7	5.55
9/5/2018							6.75	5.61	5.56
9/24/2018							6.83	5.59	5.57
10/22/2018	6.63						6.76		
10/23/2018		6.15	6.1	6.54	6.64	6.93		5.6	5.55
12/3/2018	6.67		6.09				6.6	5.73	5.6
12/4/2018				6.33	6.68				
12/5/2018		6.15				6.94			
2/5/2019	6.63	6.08	6.04				6.66		
2/6/2019				6.13	6.62	6.73			
2/7/2019								5.44	5.51
2/25/2019							6.6	5.46	5.54
2/26/2019	6.64		6.17						
2/27/2019		6.11		6.12	6.56	6.85			

Time Series

Constituent: Sulfate (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-11	GSD-AP-MW-12	GSD-AP-MW-14 ...	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...	GSD-AP-MW-2	GSD-AP-MW-3
12/6/2017	650	11	83	200				210	250
2/6/2018	560							190	230
2/7/2018		19	84						
2/8/2018				200					
4/23/2018	640							140	
4/24/2018		27	98	210					260
6/26/2018	670								
6/27/2018		<1	95	240	120			130	230
7/18/2018					120				
8/6/2018					110				
8/7/2018	660	<1						150	200
8/8/2018			110	260					
9/5/2018					86				
9/24/2018					80				
10/22/2018	580	<1						160	190
10/23/2018			78	280					
10/24/2018					68	44	16		
11/14/2018						44	13		
11/28/2018						46	11		
12/3/2018									200
12/4/2018	580	11	97					170	
12/5/2018				280	54	51	12		
12/18/2018						76	11		
1/3/2019						94	10		
1/24/2019						135	10.2		
2/5/2019	702				126	183	10.4	145	263
2/6/2019		16.8	113	249					
2/25/2019									246
2/26/2019	748	38.4						148	
2/27/2019			135	257					
2/28/2019					207	192	9.86		

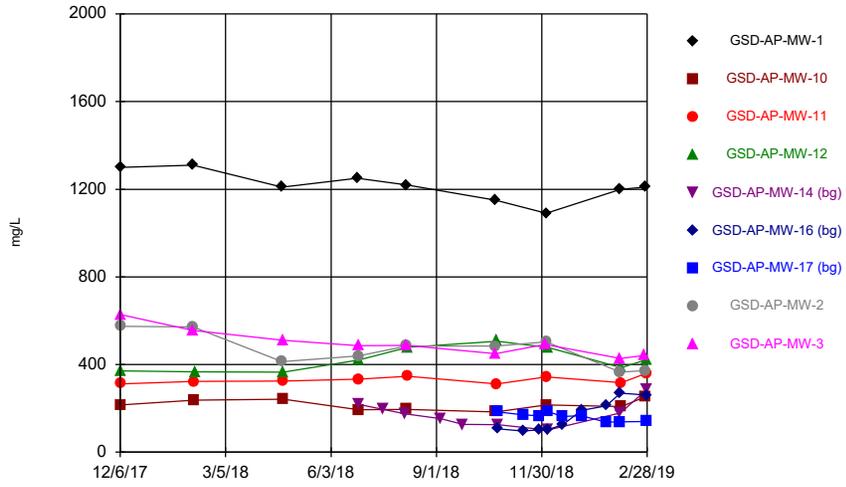
Time Series

Constituent: Sulfate (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

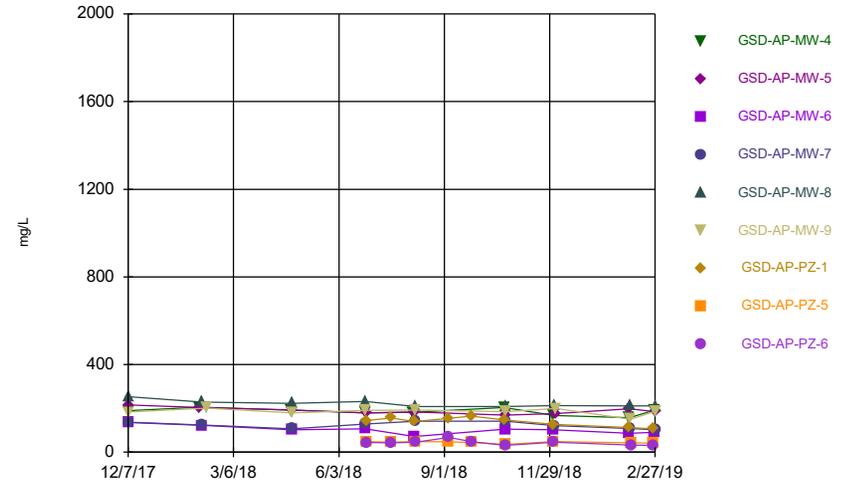
	GSD-AP-MW-4	GSD-AP-MW-5	GSD-AP-MW-6	GSD-AP-MW-7	GSD-AP-MW-8	GSD-AP-MW-9	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-PZ-6
12/7/2017	<1	19	10	14	6.5	9			
2/6/2018	<1	20							
2/8/2018			11	10	8.9				
2/12/2018						8.3			
4/24/2018	<1								
4/25/2018		22	13	11	7.9	12			
6/26/2018	<1		11	11	7.5	8.5			
6/27/2018		18					2.2 (J)	<1	<1
7/18/2018							2.5 (J)	<1	<1
8/6/2018	<1								
8/7/2018		20	12				<1		
8/8/2018				13	7.3	6.7		<1	<1
9/5/2018							1.4 (J)	<1	<1
9/24/2018							<1	<1	<1
10/22/2018	<1						1.7 (J)		
10/23/2018		18	11	13	7.8	9.4		<1	<1
12/3/2018	<1		12				2.1 (J)	<1	<1
12/4/2018				9.8	8.2				
12/5/2018		20				7.8			
2/5/2019	5.38	24.3	13.7				3.99		
2/6/2019				10.8	9.53	17			
2/7/2019								0.639 (J)	1.69
2/25/2019							3.86	<1	1.53
2/26/2019	5.1		14						
2/27/2019		24.7		8.98	8.25	12.4			

Time Series



Constituent: Total Dissolved Solids Analysis Run 4/18/2019 11:51 AM View: Descriptive
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series



Constituent: Total Dissolved Solids Analysis Run 4/18/2019 11:51 AM View: Descriptive
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Time Series

Constituent: T Total Dissolved Solids (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-1	GSD-AP-MW-10	GSD-AP-MW-11	GSD-AP-MW-12	GSD-AP-MW-14 ...	GSD-AP-MW-16 ...	GSD-AP-MW-17 ...	GSD-AP-MW-2	GSD-AP-MW-3
12/6/2017	1300	215	312	371				574	628
2/6/2018	1310							572	556
2/7/2018		237	323						
2/8/2018				367					
4/23/2018	1210							414	
4/24/2018		242	324	365					510
6/26/2018	1250								
6/27/2018		194	333	421	219			440	486
7/18/2018					195				
8/6/2018					175				
8/7/2018	1220	195						485	487
8/8/2018			346	479					
9/5/2018					153				
9/24/2018					127				
10/22/2018	1150	184						484	450
10/23/2018			311	507					
10/24/2018					125	107	184		
11/14/2018						96.7	170		
11/28/2018						102	167		
12/3/2018									492
12/4/2018	1090	215	343					504	
12/5/2018				479	101	103	185		
12/18/2018						126	164		
1/3/2019						191	167		
1/24/2019						212	137		
2/5/2019	1200				180	269	138	366	428
2/6/2019		208	317	385					
2/25/2019									441
2/26/2019	1210	252						372	
2/27/2019			360	422					
2/28/2019					287	261	140		

Time Series

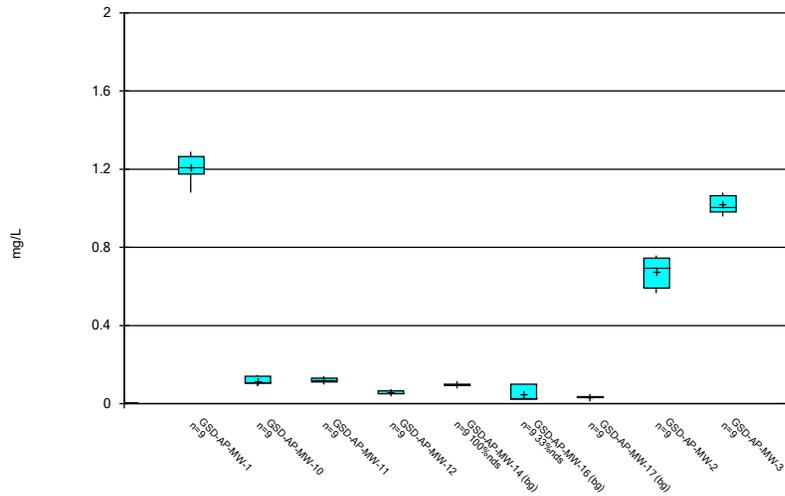
Constituent: T Total Dissolved Solids (mg/L) Analysis Run 4/18/2019 11:53 AM View: Descriptive

Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

	GSD-AP-MW-4	GSD-AP-MW-5	GSD-AP-MW-6	GSD-AP-MW-7	GSD-AP-MW-8	GSD-AP-MW-9	GSD-AP-PZ-1	GSD-AP-PZ-5	GSD-AP-PZ-6
12/7/2017	189	215	136	137	253	183			
2/6/2018	206	204							
2/8/2018			122	124	229				
2/12/2018						201			
4/24/2018	193								
4/25/2018		192	102	106	223	180			
6/26/2018	180		106	129	232	191			
6/27/2018		180					144	48.7	44
7/18/2018							156	46	42.7
8/6/2018	182								
8/7/2018		183	71.3				140		
8/8/2018				142	208	192		48	46
9/5/2018							154	47.3	67.3
9/24/2018							165	44.7	49.3
10/22/2018	204						148		
10/23/2018		169	105	142	209	185		35.3	31.3
12/3/2018	168		102				127	48.7	46
12/4/2018				121	213				
12/5/2018		177				200			
2/5/2019	158	198	86.7				113		
2/6/2019				108	212	151			
2/7/2019								42.7	32.7
2/25/2019							107	40.7	31.3
2/26/2019	191		91.3						
2/27/2019		185		103	211	186			

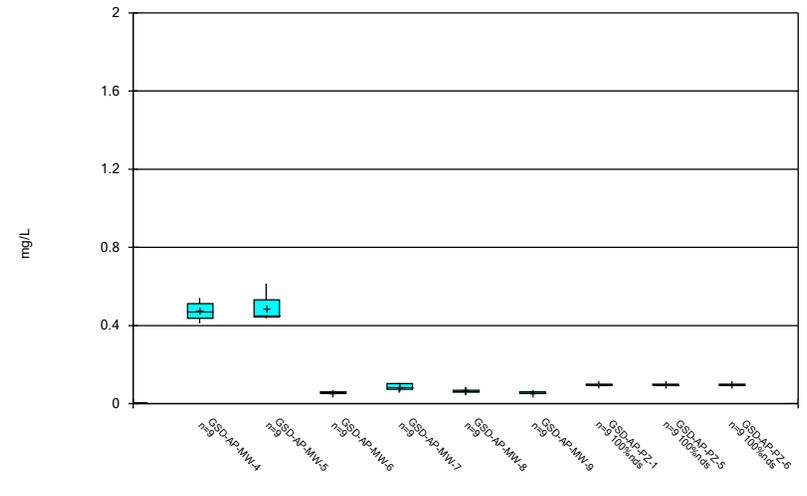
Box Plots

Box & Whiskers Plot



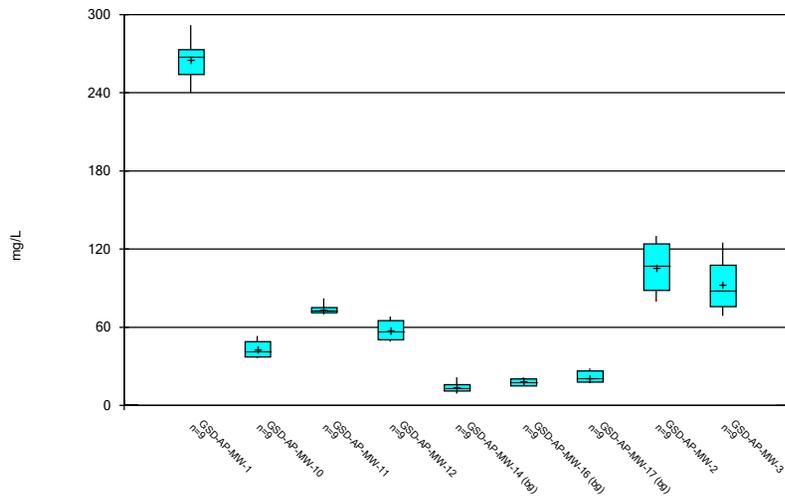
Constituent: Boron Analysis Run 4/18/2019 11:30 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



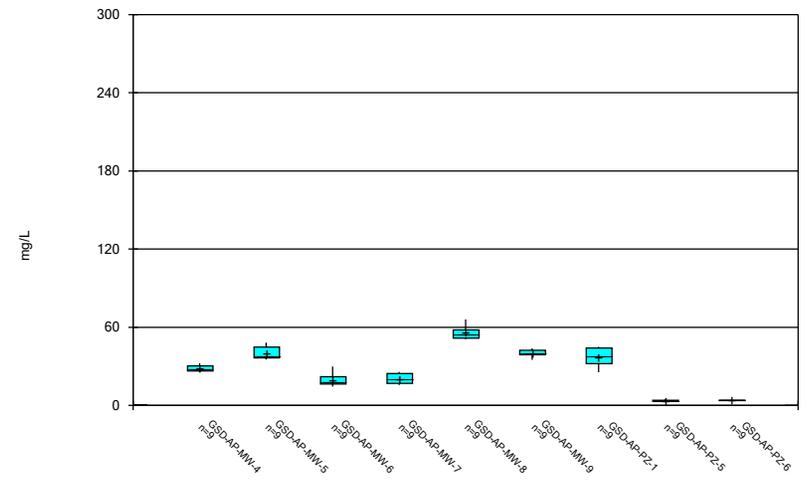
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 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



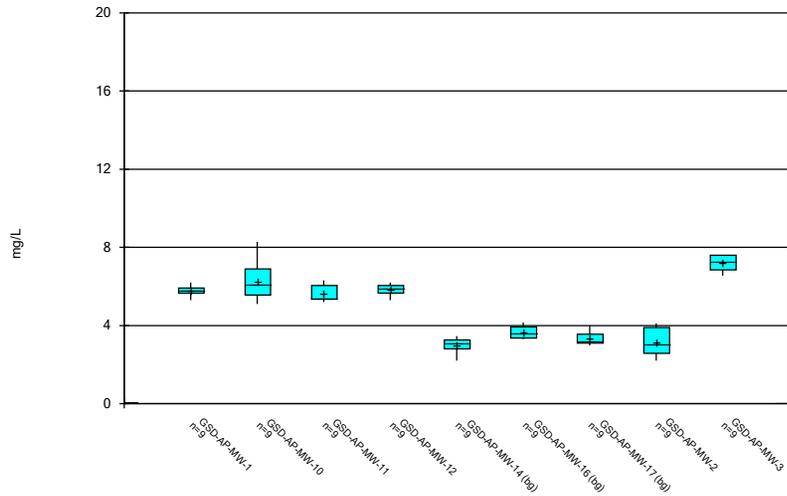
Constituent: Calcium Analysis Run 4/18/2019 11:30 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



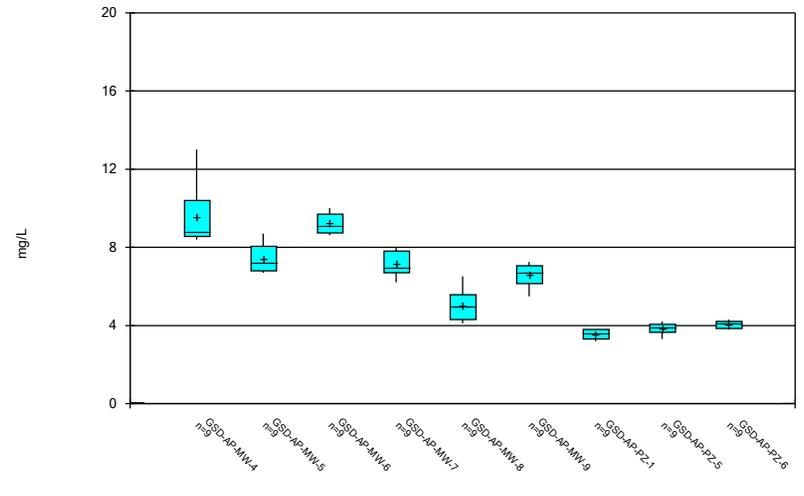
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 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



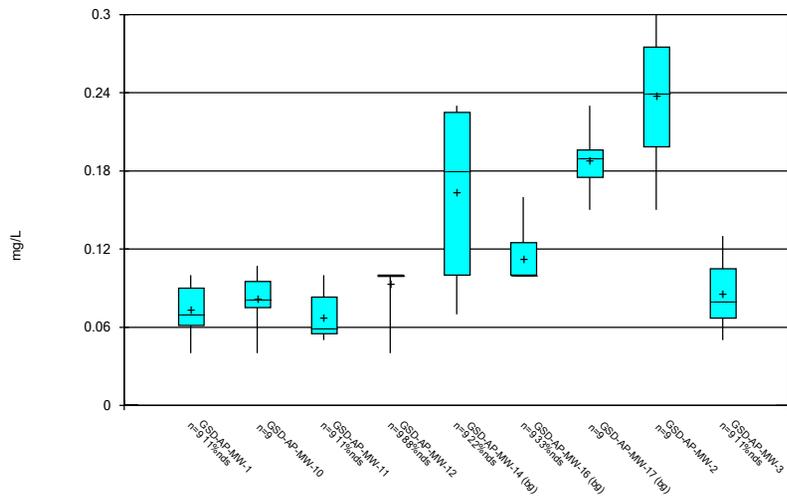
Constituent: Chloride Analysis Run 4/18/2019 11:30 AM View: Descriptive
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



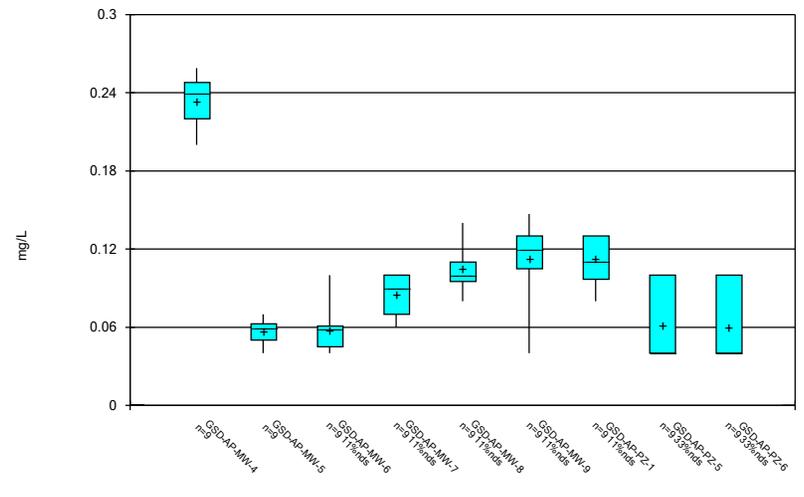
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Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



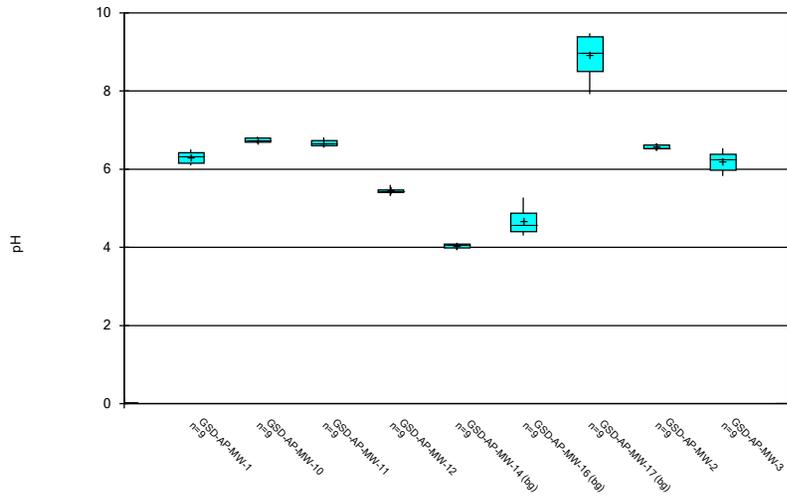
Constituent: Fluoride Analysis Run 4/18/2019 11:30 AM View: Descriptive
Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



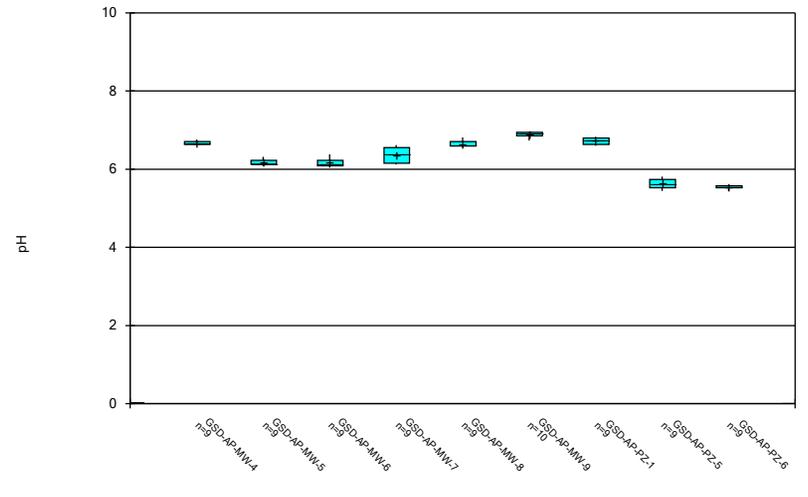
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Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



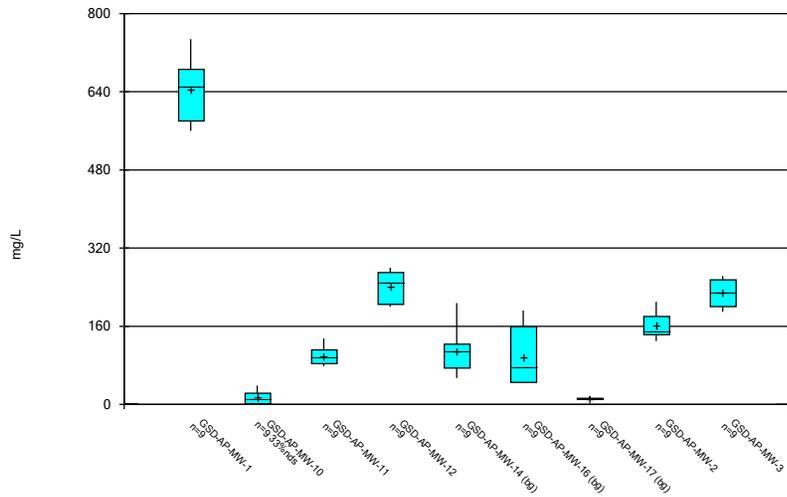
Constituent: pH Analysis Run 4/18/2019 11:30 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



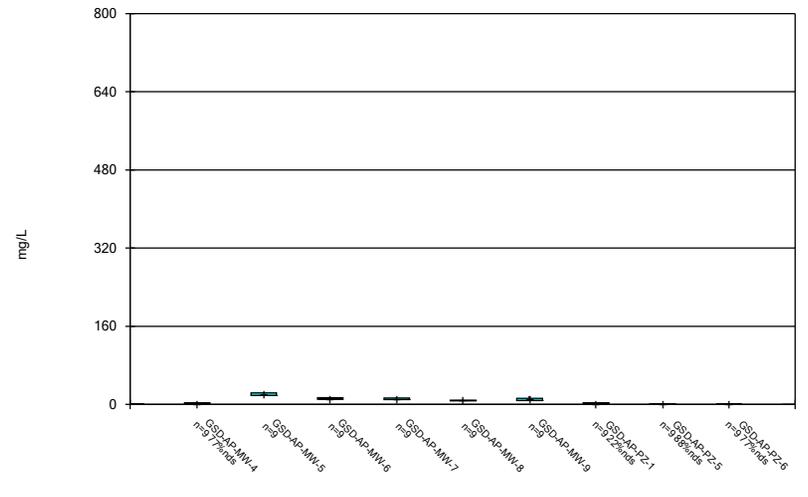
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 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



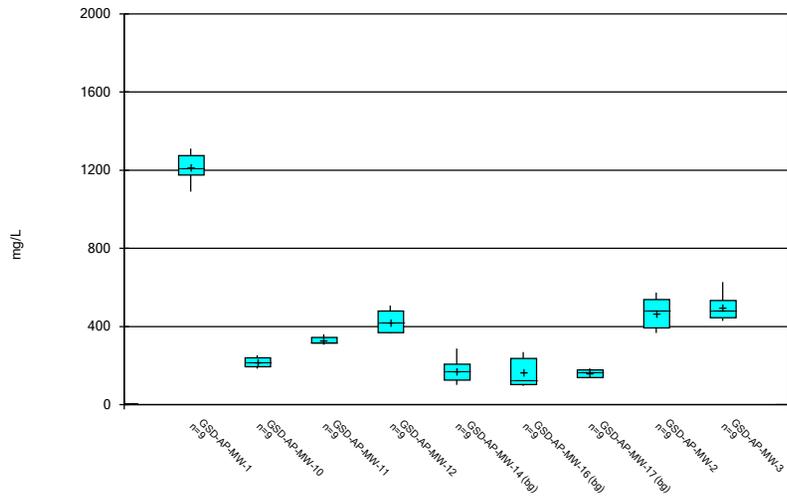
Constituent: Sulfate Analysis Run 4/18/2019 11:30 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



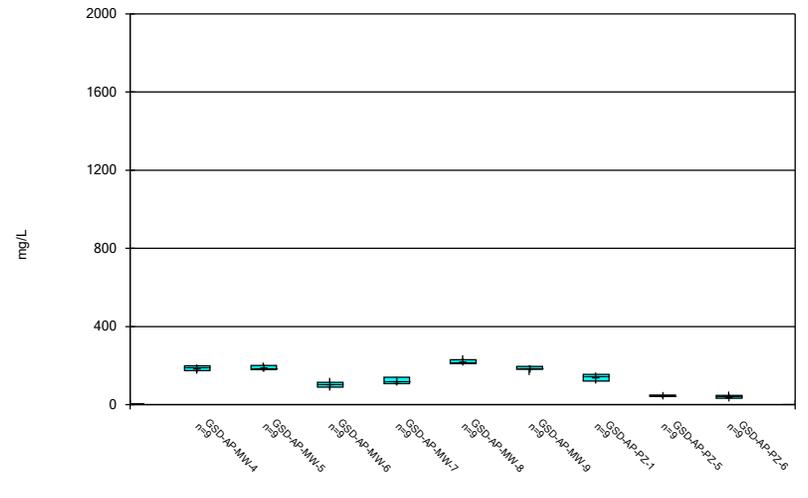
Constituent: Sulfate Analysis Run 4/18/2019 11:30 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 4/18/2019 11:30 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR

Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 4/18/2019 11:30 AM View: Descriptive
 Plant Gadsden Client: Southern Company Data: Plant Gadsden CCR