

**COAL COMBUSTION RESIDUAL RULE  
2017 ANNUAL GROUNDWATER MONITORING REPORT**

**BIG BROWN STEAM ELECTRIC STATION  
BOTTOM ASH PONDS  
FREESTONE COUNTY, TEXAS**

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## 1.0 INTRODUCTION

Luminant Generation Company, LLC (Luminant) operated the Big Brown Steam Electric Station (BBSES) located approximately 10 miles northeast of Fairfield, Freestone County, Texas (Figure 1). The BBSES consists of two coal/lignite-fired units with a combined operating capacity of approximately 1,150 megawatts that were put into operation in the early 1970s. Coal Combustion Residuals (CCRs) including fly ash and bottom ash are generated as part of BBSES unit operation. The CCRs are transported off-site for beneficial use by third-parties or are managed/disposed of by Luminant at the BBSES. Two CCR units have been identified within the BBSES operations, the Bottom Ash Ponds and Ash Disposal Area II. This report discusses the Bottom Ash Ponds (the Site), which include the North Bottom Ash Pond (NBAP) and the South Bottom Ash Pond (SBAP).

The CCR Rule (40 CFR 257 Subpart D - *Standards for the Receipt of Coal Combustion Residuals in Landfills and Surface Impoundments*) has been promulgated by the EPA to regulate the management and disposal of CCRs as solid waste under Resource Conservation and Recovery Act (RCRA) Subtitle D. The final CCR Rule was published in the Federal Register on April 17, 2015. The effective date of the CCR Rule was October 19, 2015. The Bottom Ash Ponds meet the definition of a CCR surface impoundment and are subject to groundwater monitoring system requirements of the CCR Rule.

### 1.1 CCR Unit Groundwater Monitoring Applicability

Section 257.90 of the CCR Rule requires that existing CCR landfills and surface impoundments be in compliance with the following groundwater monitoring requirements no later than October 17, 2017:

- Install a groundwater monitoring system as required under Section 257.91;
- Develop a groundwater sampling and analysis program to include selection of the statistical procedures to be used for evaluating groundwater monitoring data as required under Section 257.93;
- Initiate a detection monitoring program to include obtaining a minimum of eight independent samples for each background and downgradient monitoring well as required under Section 257.94; and
- Begin evaluating the groundwater monitoring data for statistically significant increases over background levels for the constituents listed in Appendix III of this part as required under Section 257.94.

Pastor, Behling & Wheeler, LLC (PBW) was retained by Luminant to evaluate the CCR groundwater monitoring system and develop and implement a CCR groundwater sampling and analysis program at the Site. To document these activities, PBW prepared the following reports, which were placed in the facility's operating record to comply with Section 257.105(h) of the CCR Rule:

- CCR Groundwater Monitoring System Certification (PBW, 2017a);
- CCR Monitoring Well Design, Installation, Development, and Decommissioning Report (PBW, 2017b); and
- CCR Statistical Analysis Plan (PBW, 2017c).

For existing CCR landfills and surface impoundments, the owner or operator must prepare an annual groundwater monitoring and corrective action report to document the status of the groundwater monitoring and corrective action program for the CCR unit for the previous calendar year. The CCR Rule requires that the owner or operator of a CCR unit prepare the initial annual groundwater monitoring and corrective action report for the unit no later than January 31, 2018, and annually thereafter. Per Section 257.90(e) of the CCR Rule, the report should contain the following information, to the extent available:

- (1) A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;
- (2) Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;
- (3) In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;
- (4) A narrative discussion of any transition between monitoring programs (*e.g.*, the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and
- (5) Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.

## 1.2 Groundwater Sampling and Analysis Requirements

### 1.2.1 Background Monitoring Requirements

The CCR Rule requires that background groundwater quality be established in background well(s) for each of the groundwater constituents required in the detection monitoring or assessment monitoring program that applies to the CCR unit. Background groundwater quality may be established at wells that are not located hydraulically upgradient from the CCR unit if the samples accurately represent the quality of background groundwater that has not been affected by leakage from the CCR unit. Section 257.94(b) of the CCR Rule requires that a minimum of eight independent samples from each background and downgradient well associated with a CCR unit be collected and analyzed for the constituents listed in Appendix III and Appendix IV to Part 257 CCR Rule no later than October 17, 2017.

PBW was retained by Luminant to collect and analyze the required background well samples at the Site. Eight background groundwater monitoring events were performed using the Bottom Ash Ponds CCR monitoring well system from October 2015 to December 2016. The background groundwater monitoring program is described in detail in Section 2 of this report.

### 1.2.2 Detection Monitoring Requirements

Groundwater detection monitoring must be performed at each CCR unit (CCR Rule Section 257.94). The following constituents must be included in the detection monitoring program (from Appendix III of the CCR Rule):

- Boron
- Calcium
- Chloride
- Fluoride
- pH
- Sulfate
- Total Dissolved Solids (TDS)

The monitoring frequency for these constituents must be at least semi-annual during the active life of the CCR unit and post-closure period. The reported concentrations of the detection monitoring constituents must be compared to the respective CCR unit background concentration developed for each constituent. If a statistically significant increase over background is determined for one or more of the constituents listed above at any monitoring well at the CCR unit waste boundary, within 90 days the owner or operator

must:

- Establish an assessment monitoring program as described in Section 257.95 of the Rule; or
- Demonstrate that a source other than the CCR unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. If a successful demonstration is completed within the 90-day period, the owner or operator of the CCR unit may continue with the detection monitoring program. If at the end of the 90-day period in 257.94(e)(2), the owner or operator is unable to successfully make an alternate source demonstration, the assessment monitoring program is triggered and the owner or operator has 90 days to complete the sampling required under 257.95(d).

Detection monitoring performed at the Site is discussed in Section 4.0 of this report.

### 1.2.3 Assessment Monitoring Requirements

Assessment monitoring is required under the CCR Rule whenever a statistically significant increase over background levels has been detected for one or more of the detection monitoring constituents listed above (CCR Rule Section 257.95). The following constituents must be included in the assessment monitoring program (from Appendix IV of the CCR Rule):

- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Fluoride
- Lead
- Lithium
- Mercury
- Molybdenum
- Selenium
- Thallium
- Radium 226 and 228 combined

Assessment monitoring performed at the Site is discussed in Section 5.0 of this report.

## 2.0 GROUNDWATER MONITORING SYSTEM

### 2.1 Description of Bottom Ash Ponds

The NBAP and SBAP (collectively “Bottom Ash Ponds” or “BAPs”) are located approximately 1,500 feet northwest of the BBSSES power plant (Figure 2). Each impoundment is approximately 1,400 feet long by 250 feet wide and covers an area of approximately eight acres. The impoundments are constructed partially above and partially below grade and are surrounded by engineered earthen dikes that extend approximately 14 to 21 feet above grade (TUEC, 1998). The NBAP and SBAP were originally constructed in approximately the late 1960s - early 1970s and were relined with a clay liner in 1989-1990 (TXU, 1991, TUEC, 1998). As-built engineering drawings indicate the clay liner is three feet thick and has a hydraulic conductivity less than  $1 \times 10^{-7}$  centimeters per second (cm/sec).

The Bottom Ash Ponds served as settling basins to remove residual bottom ash and fines from a sump associated with the dewatering bins. The ponds also acted as a surge basin for various water streams in the ash-water system. Decanted water at the opposite end of the pond from the slurry discharge pipeline was returned to the power plant when it was in operation. When sufficient ash had accumulated in one pond, the ash slurry was diverted to the other pond. Ash in the inactive pond was then removed and transported via truck to the nearby Luminant mine for placement in Area C or other beneficial use.

### 2.2 Local Geology and Hydrogeology

The Bottom Ash Ponds are located in the outcrop area of the Eocene-aged Wilcox Group (Barnes, 1970). Based on soil borings completed at the Site, the geology in this area generally consists of an upper clay unit that extends from ground surface to about 10 to 30 feet below ground surface (bgs), an intermediate silty sand unit that is approximately 20-foot to 70-foot thick and contains minor occurrences of interbedded, well sorted, fine to medium-grained sand, and a lower clay unit (PBW, 2017a). The uppermost aquifer at the Site occurs under unconfined conditions within the intermediate silty sand unit, and extends to the underlying confining clay unit.

### 2.3 Bottom Ash Ponds Groundwater Monitoring System

The CCR groundwater monitoring well system at the Bottom Ash Ponds consists of seven monitoring wells (BAP-57, BAP-58, BAP-59, BAP-60, BAP-61, BAP-62, and BAP-63) that are each screened in the uppermost aquifer at the Site. The locations of the CCR monitoring wells are shown on Figure 2. Well



construction information and survey data for the CCR wells are summarized in Table 1. The wells were installed in 2015. No wells were added to or removed from the CCR groundwater monitoring system during 2017.

**2.4 Groundwater Potentiometric Surface**

Static water levels measured during the background monitoring period and 2017 detection monitoring event indicated water elevations ranging from 307.38 feet above mean sea level (amsl) to 313.56 feet amsl, and depths to water ranging from 17.98 feet bgs to 37.54 feet bgs (Table 2).

Groundwater elevations were generally highest near well BAP-57, located on the north side of the Bottom Ash Ponds, with an inferred groundwater flow direction to the east, west, and south (Figure 3). Based on the inferred groundwater flow direction, the location of each CCR monitoring well relative to the Bottom Ash Ponds is as follows:

Upgradient Wells	Downgradient Wells
BAP-57	BAP-58 BAP-59 BAP-60 BAP-61 BAP-62 BAP-63

### **3.0 BACKGROUND GROUNDWATER MONITORING PROGRAM**

Eight background groundwater monitoring events were performed using the Bottom Ash Ponds CCR monitoring well system from October 2015 to December 2016. The results of the background monitoring events are described in this section.

#### **3.1 Background Groundwater Monitoring Results**

The Bottom Ash Ponds CCR groundwater monitoring wells were sampled approximately every two months from October 2015 to December 2016 (eight sampling events) to fulfill the background monitoring period sampling requirements of the CCR Rule. Background sample data are summarized in Table 3 (Appendix III) and Table 4 (Appendix IV). Laboratory analytical reports for the data are presented in Appendix A.

#### **3.2 Background Statistical Evaluation Procedures**

Statistical analysis of groundwater monitoring data is required as part of detection monitoring and assessment monitoring under Section 257.93 of the CCR Rule. Section 257.93 of the CCR Rule provides several options for statistically evaluating the groundwater data. The owner or operator of the CCR unit must select one of the following statistical methods specified in paragraphs (f)(1) through (5) of Section 257.93 to be used in evaluating groundwater monitoring data for each specified constituent:

- (1) A parametric analysis of variance followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's mean and the background mean levels for each constituent.
- (2) An analysis of variance based on ranks followed by multiple comparison procedures to identify statistically significant evidence of contamination. The method must include estimation and testing of the contrasts between each compliance well's median and the background median levels for each constituent.
- (3) A tolerance or prediction interval procedure, in which an interval for each constituent is established from the distribution of the background data and the level of each constituent in each compliance well is compared to the upper tolerance or prediction limit.
- (4) A control chart approach that gives control limits for each constituent.
- (5) Another statistical test method that meets the performance standards of paragraph (g) of this section.

The following statistical evaluation approaches were selected to demonstrate groundwater compliance for the Bottom Ash Ponds under the CCR Rule:

- Use of interwell data evaluations, which compare new sample data to sample data from upgradient background well(s).
- Use of prediction limits for data comparisons. This approach is a common statistical method used to evaluate groundwater compliance for Subtitle D landfill facilities and is one of the approved options for groundwater quality data statistical evaluation under the CCR Rule.

The evaluation procedures used for the Bottom Ash Ponds background groundwater data conforms with the Rule requirements shown above, as well as EPA's *Unified Guidance: Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities* (EPA, 2009) and the American Society for Testing and Materials (ASTM) standard D6312-17, *Developing Appropriate Statistical Approaches for Groundwater Detection Monitoring Programs at waste Disposal Facilities* (ASTM, 2017). The statistical approach used for establishing prediction limits based on the background data are described in detail in the Statistical Analysis Plan for the Site (PBW, 2017c).

#### **4.0 DETECTION GROUNDWATER MONITORING PROGRAM**

In accordance with CCR Rule Section 257.94, detection monitoring groundwater samples are collected on a semi-annual basis from the Bottom Ash Pond CCR groundwater monitoring network.

##### **4.1 Detection Monitoring Results**

PBW collected the initial detection monitoring groundwater samples from the Bottom Ash Pond CCR monitoring wells in September 2017 and evaluation of the data commenced by October 17, 2017. The detection monitoring results are summarized in Table 5. Laboratory analytical reports for the detection monitoring samples are included in Appendix B. The evaluation of these data will be completed in 2018, and the evaluation will be summarized in the 2018 Annual Groundwater Monitoring Report.

##### **4.2 CCR Detection Monitoring Activities Planned for 2018**

In accordance with CCR Rule Section 257.94, detection monitoring groundwater samples will be collected on a semi-annual basis in 2018 and the analytical data from both sampling events will be included in the 2018 Annual Groundwater Monitoring Report. A statistical evaluation of the 2017 detection monitoring data and the first semi-annual 2018 detection monitoring data will be summarized in the 2018 Annual Groundwater Monitoring Report. If a statistically significant increase over background is determined for one or more of the detection monitoring constituents at any monitoring well at the CCR unit waste boundary, Luminant will comply with the applicable CCR Rule requirements in 257.94(e)(2).

## **5.0 ASSESSMENT GROUNDWATER MONITORING PROGRAM**

Assessment groundwater monitoring was not performed at the Site during 2017. Assessment monitoring will be performed during 2018 if required.

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## 6.0 REFERENCES

- ASTM, 2017. Standard Guide for Developing Appropriate Statistical Approaches for Groundwater Detection Monitoring Programs at Waste Disposal Facilities - D6312-17.
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- Pastor, Behling & Wheeler, LLC, 2017c. Coal Combustion Residual Rule Statistical Analysis Plan, Big Brown Steam Electric Station, Bottom Ash Ponds, Freestone County, Texas. October 11, 2017.
- Texas Utilities Electric Company (TUEC), 1998. Application for Permit to Receive and Process Non-Hazardous Solid Waste, Big Brown Steam Electric Station, Freestone County, Texas. February.
- TXU Electric Company (TXU), 1991. As-Built Engineering Drawings 119-1134-301-01, 119-1134-301-02, and 119-1134-301-03, Big Brown Steam Electric Station – Bottom Ash Ponds, February 8.

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**Tables**

**TABLE 1  
WELL CONSTRUCTION SUMMARY  
BOTTOM ASH PONDS  
BIG BROWN STEAM ELECTRIC STATION**

<b>Well ID</b>	<b>Date Installed</b>	<b>Northing</b>	<b>Easting</b>	<b>Concrete Pad Elevation (ft amsl)</b>	<b>TOC Elevation (ft amsl)</b>	<b>Top of Screen (ft bgs)</b>	<b>Bottom of Screen (ft bgs)</b>	<b>Screen Length (ft)</b>	<b>Total Design Depth (ft bgs)</b>	<b>Casing Diameter (in)</b>
BAP-57	9/11/2015	10651746	3622487	332.28	335.75	34.0	44.0	10.0	44.0	2
BAP-58	9/11/2015	10652234	3623191	326.54	330.12	31.0	41.0	10.0	41.0	2
BAP-59	9/11/2015	10651971	3623549	332.83	336.14	35.0	45.0	10.0	45.0	2
BAP-60	8/31/2015	10651500	3623383	333.79	337.56	36.0	46.0	10.0	46.0	2
BAP-61	9/1/2015	10650992	3622607	333.95	337.63	34.5	44.5	10.0	44.5	2
BAP-62	9/1/2015	10651096	3622077	343.88	347.59	31.0	41.0	10.0	41.0	2
BAP-63	9/10/2015	10651348	3621886	342.57	345.57	35.5	45.5	10.0	45.5	2

Notes:

1. Abbreviations: ft - feet; TOC - top of casing; amsl - above mean sea level; bgs - below ground surface; in - inches.



**TABLE 2**  
**WATER LEVEL SUMMARY**  
**BOTTOM ASH PONDS**  
**BIG BROWN STEAM ELECTRIC STATION**

<b>Well ID</b>	<b>TOC Elevation (ft amsl)</b>	<b>Date</b>	<b>Depth to Water (ft btoc)</b>	<b>Water Elevation (ft amsl)</b>
BAP-57	335.745	10/27/15	24.81	310.94
		12/15/15	22.74	313.01
		02/29/16	22.82	312.93
		04/13/16	22.54	313.21
		06/09/16	24.29	311.46
		09/01/16	22.19	313.56
		10/06/16	22.94	312.81
		12/14/16	25.76	309.99
BAP-58	330.119	10/27/15	20.76	309.36
		12/15/15	19.26	310.86
		02/29/16	22.74	307.38
		04/13/16	18.19	311.93
		06/09/16	17.98	312.14
		09/01/16	18.03	312.09
		10/06/16	18.71	311.41
		12/14/16	22.38	307.74
BAP-59	336.14	10/27/15	26.18	309.96
		12/15/15	24.34	311.80
		02/29/16	24.67	311.47
		04/13/16	24.59	311.55
		06/09/16	22.74	313.40
		09/01/16	23.98	312.16
		10/06/16	24.49	311.65
		12/14/16	27.61	308.53
BAP-60	337.556	10/27/15	27.18	310.38
		12/15/15	26.02	311.54
		02/29/16	26.44	311.12
		04/13/16	26.36	311.20
		06/09/16	24.93	312.63
		09/01/16	25.56	312.00
		10/06/16	26.02	311.54
		12/14/16	29.17	308.39
BAP-61	337.632	10/27/15	27.21	310.42
		12/15/15	26.24	311.39
		02/29/16	27.34	310.29
		04/13/16	27.22	310.41
		06/09/16	25.57	312.06
		09/01/16	26.34	311.29
		10/06/16	26.51	311.12
		12/14/16	29.21	308.42

**TABLE 2**  
**WATER LEVEL SUMMARY**  
**BOTTOM ASH PONDS**  
**BIG BROWN STEAM ELECTRIC STATION**

<b>Well ID</b>	<b>TOC Elevation (ft amsl)</b>	<b>Date</b>	<b>Depth to Water (ft btoc)</b>	<b>Water Elevation (ft amsl)</b>
BAP-62	347.592	10/27/15	37.14	310.45
		12/15/15	36.09	311.50
		02/29/16	36.04	311.55
		04/13/16	35.86	311.73
		06/09/16	35.11	312.48
		09/01/16	35.31	312.28
		10/06/16	35.33	312.26
		12/14/16	37.54	310.05
BAP-63	345.571	10/27/15	36.03	309.54
		12/15/15	35.11	310.46
		02/29/16	34.54	311.03
		04/13/16	34.48	311.09
		06/09/16	33.78	311.79
		09/01/16	33.57	312.00
		10/06/16	33.69	311.88
		12/14/16	35.84	309.73

Notes:

1. Abbreviations: TOC - top of casing; ft - feet, amsl - above mean sea level.

**TABLE 3**  
**APPENDIX III BACKGROUND GROUNDWATER ANALYTICAL DATA**  
**BIG BROWN STEAM ELECTRIC STATION**  
**BOTTOM ASH PONDS**

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	Fl (mg/L)	pH (s.u.)	SO <sub>4</sub> (mg/L)	TDS (mg/L)
BAP-57	10/28/15	0.208	20.9	35.7	0.121 J	7.21	268	894
	12/16/15	0.253	61	28.6	0.323 J	7.32	95.7	1,070
	03/01/16	0.242	21.6	30.7	0.221 J	6.41	56.4	450
	04/13/16	0.31	11.9	29.5	0.191 J	7.18	56.9	417
	06/13/16	0.459	48.9	38.5	<0.1	7.19	62.3	418
	09/01/16	0.451	39.5	60.6	<0.1	6.92	51.9	449
	10/06/16	0.323	38.8	59.9	0.175 J	6.78	49.4	412
	12/15/16	0.289	31.1	56.8	0.103 J	6.82	40.4	409
BAP-58	10/28/15	1.04	18.4	37.8	<0.1	7.09	88.7	402
	12/16/15	0.439	16.4	32.5	0.542	7.14	89.9	381
	02/29/16	1.18	18	35.3	0.131 J	6.43	90.1	359
	04/13/16	1.17	18.1	31.4	0.174 J	7.12	88.3	344
	06/13/16	1.23	16.3	32.6	<0.1	7.12	90.1	332
	09/01/16	1.1	15.9	28.2	0.126 J	6.75	77.8	334
	10/06/16	0.882	15.8	29.5	0.211 J	6.92	79.5	263
	12/15/16	1.01	14.9	29.3	<0.1	7.08	76.5	327
BAP-59	10/27/15	1.86	64.2	132	0.152 J	7.24	202	799
	12/15/15	2.54	69.7	138	0.467	7.15	241	848
	03/01/16	2.88	61.2	136	0.242 J	6.65	262	858
	04/13/16	3.00	62	129	0.328 J	7.13	269	774
	06/13/16	2.85	52.5	117	0.175 J	7.12	244	745
	09/01/16	2.54	50.7	109	0.314 J	7.17	234	670
	10/06/16	2.55	48.6	94.2	0.308 J	7.08	214	581
	12/15/16	2.88	32.7	71.1	0.291 J	6.78	181	483
BAP-60	10/21/15	0.651	26.3	84.1	0.129 J	6.83	108	556
	12/16/15	0.645	21.7	73.7	0.23 J	6.93	109	511
	03/01/16	0.503	13.8	52.3	0.193 J	6.87	68.5	408
	04/13/16	0.486	14.1	44.4	0.211 J	6.79	60.8	391
	06/13/16	0.478	12.8	48.4	0.123 J	6.90	68.6	357
	09/01/16	0.423	1.24	19.4	0.226 J	6.92	81.4	373
	10/06/16	0.395	13.1	17.3	0.268 J	6.84	89.1	340
	12/14/16	0.447	11.8	15.5	0.148 J	6.83	94.1	347
BAP-61	10/27/15	0.658	60.9	224	<0.1	7.12	122	814
	12/15/15	0.752	57	205	0.223 J	7.07	84.2	790
	03/01/16	0.788	65.5	205	<0.1	6.74	113	711
	04/13/16	0.761	69.7	198	0.131 J	7.01	110	680
	06/13/16	0.754	65.6	209	<0.1	7.05	116	670
	09/01/16	0.759	67.4	190	0.212 J	7.07	113	653
	10/06/16	0.744	70.9	197	0.104 J	6.83	118	559
	12/14/16	0.903	68.9	217	<0.1	6.75	121	672

**TABLE 3**  
**APPENDIX III BACKGROUND GROUNDWATER ANALYTICAL DATA**  
**BIG BROWN STEAM ELECTRIC STATION**  
**BOTTOM ASH PONDS**

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	Fl (mg/L)	pH (s.u.)	SO <sub>4</sub> (mg/L)	TDS (mg/L)
BAP-62	10/27/15	2.78	134	49.1	0.168 J	6.72	217	746
	12/15/15	3.69	155	105	0.356 J	6.82	360	1,040
	03/01/16	1.46	101	24	0.237 J	6.78	191	627
	04/13/16	1.4	103	16	0.359 J	6.79	177	612
	06/13/16	1.45	87	14.6	0.256 J	6.78	158	562
	09/01/16	0.933	84.2	7.41	0.359 J	6.78	114	466
	10/06/16	0.771	74.4	8.01	0.348 J	6.74	110	360
	12/15/16	0.963	68.7	8.09	0.159 J	6.72	87.1	430
BAP-63	10/27/15	0.774	36	68	<0.1	6.94	116	518
	12/15/15	1.37	63	64.5	0.17 J	6.77	121	584
	02/29/16	1.02	66.2	60.6	<0.1	6.46	113	608
	04/13/16	0.762	105	38.8	0.176 J	6.91	74	632
	06/13/16	1.38 J	121	56.2	<0.1	6.78	112	674
	09/01/16	1.74	127	68.2	0.188 J	6.95	134	710
	10/06/16	0.95	130	40.1	0.16 J	6.93	91.7	640
	12/15/16	1.26	150	22.1	<0.1	6.95	67.9	617

Notes:

1. Abbreviations: mg/L - milligrams per liter; TDS - total dissolved solids; s.u. - standard units.
2. J - concentration is below method quantitation limit; result is an estimate.

**TABLE 4  
APPENDIX IV BACKGROUND GROUNDWATER ANALYTICAL DATA  
BIG BROWN STEAM ELECTRIC STATION  
BOTTOM ASH PONDS**

Sample Location	Date Sampled	Sb (mg/L)	As (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Fl (mg/L)	Pb (mg/L)	Li (mg/L)	Hg (mg/L)	Mo (mg/L)	Se (mg/L)	Th (mg/L)	Ra 226 (pCi/L)	Ra 228 (pCi/L)	Ra 226/228 Combined^ (pCi/L)
BAP-57	10/28/15	<0.0008	0.0125	0.16	<0.0003	<0.0003	<0.002	0.00688	0.121 J	<0.0003	0.00574 J	<0.00008	0.00962	<0.002	<0.0005	0.789	<1.59	2.38
	12/16/15	<0.0008	0.00995	0.257	<0.0003	<0.0003	0.00634	<0.003	0.323 J	<0.0003	0.206	<0.00008	0.0113	<0.002	<0.0005	1.120	<1.8	2.92
	03/01/16	<0.0008	0.00963	0.0984	<0.0003	<0.0003	<0.002	<0.003	0.221 J	<0.0003	0.0842	<0.00008	0.0102	<0.002	<0.0005	0.866	<1.56	2.43
	04/13/16	<0.0008	0.00832	0.0881	<0.0003	<0.0003	<0.002	<0.003	0.191 J	<0.0003	0.062	<0.00008	0.00594	<0.002	<0.0005	<0.555	<1.04	1.60
	06/13/16	<0.0008	0.00966	0.282	<0.0003	<0.0003	0.00208 J	<0.003	<0.1	<0.0003	0.0861	<0.00008	0.00384 J	<0.002	<0.0005	0.636	<1.49	2.13
	09/01/16	<0.0008	0.00628	0.208	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0197	<0.00008	0.00209 J	<0.002	<0.0005	0.293	<0.554	0.85
	10/06/16	<0.0008	0.00454 J	0.208	<0.0003	<0.0003	<0.002	<0.003	0.175 J	<0.0003	0.0131	<0.00008	<0.002	<0.002	<0.0005	0.383	<0.171	0.55
	12/15/16	<0.0008	0.00578	0.179	<0.0003	<0.0003	<0.002	<0.003	0.103 J	<0.0003	0.0105	<0.00008	<0.002	<0.002	<0.0005	0.242	0.840	1.08
BAP-58	10/28/15	<0.0008	0.00476 J	0.0674	<0.0003	<0.0003	<0.002	0.00752	<0.1	<0.0003	0.0257	<0.00008	<0.002	<0.002	<0.0005	0.435	<1.69	2.13
	12/16/15	<0.0008	<0.002	0.0586	<0.0003	<0.0003	<0.002	<0.003	0.542	<0.0003	0.0144	<0.00008	<0.002	<0.002	<0.0005	0.713	<1.95	2.66
	02/29/16	<0.0008	<0.002	0.0525	<0.0003	<0.0003	<0.002	<0.003	0.131 J	0.000417 J	0.00937 J	<0.00008	<0.002	<0.002	<0.0005	0.898	1.91	2.81
	04/13/16	<0.0008	<0.002	0.0527	<0.0003	<0.0003	0.0272	0.0031 J	0.174 J	<0.0003	0.00733 J	<0.00008	<0.002	<0.002	<0.0005	<0.167	<0.954	1.12
	06/13/16	<0.0008	<0.002	0.0466	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.00683 J	<0.00008	<0.002	<0.002	<0.0005	<0.177	<1.05	1.23
	09/01/16	<0.0008	<0.002	0.0509	<0.0003	<0.0003	<0.002	0.00582	0.126 J	<0.0003	0.00691 J	<0.00008	<0.002	<0.002	<0.0005	0.242	<0.669	0.91
	10/06/16	<0.0008	<0.002	0.0426	<0.0003	<0.0003	<0.002	<0.003	0.211 J	<0.0003	0.00714 J	<0.00008	<0.002	<0.002	<0.0005	0.897	2.66	3.56
	12/15/16	<0.0008	<0.002	0.0479	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.00818 J	<0.00008	<0.002	<0.002	<0.0005	0.171	1.08	1.25
BAP-59	10/27/15	<0.0008	0.00328 J	0.138	<0.0003	<0.0003	<0.002	0.00595	0.152 J	<0.0003	0.00973 J	<0.00008	0.00241 J	<0.002	<0.0005	0.729	<2.01	2.74
	12/15/15	<0.0008	0.00696	0.121	<0.0003	<0.0003	<0.002	0.00703	0.467	<0.0003	0.00884 J	<0.00008	0.0028 J	<0.002	<0.0005	0.928	<1.81	2.74
	03/01/16	<0.0008	0.00655	0.102	<0.0003	<0.0003	<0.002	0.00537	0.242 J	<0.0003	0.00987 J	<0.00008	0.00345 J	<0.002	<0.0005	0.544	1.62	2.16
	04/13/16	<0.0008	0.00478 J	0.0917	<0.0003	<0.0003	<0.002	0.00503	0.328 J	<0.0003	0.00928 J	<0.00008	0.00342 J	<0.002	<0.0005	<0.245	<1.65	1.90
	06/13/16	<0.0008	<0.002	0.0983	<0.0003	<0.0003	<0.002	<0.003	0.175 J	<0.0003	0.00889 J	<0.00008	0.00376 J	0.00285 J	<0.0005	<0.212	1.47	1.68
	09/01/16	<0.0008	<0.002	0.0727	<0.0003	<0.0003	<0.002	<0.003	0.314 J	<0.0003	0.00879 J	<0.00008	0.00342 J	0.00236 J	<0.0005	0.237	<0.484	0.72
	10/06/16	<0.0008	<0.002	0.0617	<0.0003	<0.0003	<0.002	<0.003	0.308 J	<0.0003	0.008 J	<0.00008	0.00298 J	0.00357 J	<0.0005	<0.172	0.871	1.04
	12/15/16	<0.0008	<0.002	0.0558	<0.0003	<0.0003	<0.002	<0.003	0.291 J	<0.0003	0.00844 J	<0.00008	0.00331 J	0.00606	<0.0005	0.179	0.806	0.99
BAP-60	10/21/15	<0.0008	0.0112	0.221	<0.0003	<0.0003	<0.002	0.00433 J	0.129 J	<0.0003	0.00979 J	<0.00008	<0.002	<0.002	<0.0005	0.462	<1.25	1.71
	12/16/15	<0.0008	0.00642	0.174	<0.0003	<0.0003	<0.002	0.00391 J	0.23 J	<0.0003	0.00958 J	<0.00008	<0.002	<0.002	<0.0005	0.426	<1.51	1.94
	03/01/16	<0.0008	<0.002	0.0934	<0.0003	<0.0003	<0.002	<0.003	0.193 J	<0.0003	0.0113	<0.00008	<0.002	<0.002	<0.0005	0.685	<1.7	2.39
	04/13/16	<0.0008	<0.002	0.0892	<0.0003	<0.0003	<0.002	<0.003	0.211 J	<0.0003	0.00971 J	<0.00008	<0.002	<0.002	<0.0005	<0.28	1.68	1.96
	06/13/16	<0.0008	<0.002	0.0773	<0.0003	0.000304 J	<0.002	<0.003	0.123 J	<0.0003	0.0101	<0.00008	<0.002	0.00219 J	<0.0005	<0.414	<1.41	1.82
	09/01/16	<0.0008	<0.002	0.00748 J	<0.0003	<0.0003	<0.002	<0.003	0.226 J	<0.0003	0.00843 J	<0.00008	<0.002	<0.002	<0.0005	<0.138	<0.605	0.74
	10/06/16	<0.0008	<0.002	0.0691	<0.0003	<0.0003	<0.002	<0.003	0.268 J	<0.0003	0.00739 J	<0.00008	<0.002	0.00269 J	<0.0005	<0.137	<0.572	0.71
	12/14/16	<0.0008	<0.002	0.0734	<0.0003	<0.0003	<0.002	0.00386 J	0.148 J	<0.0003	0.00796 J	<0.00008	<0.002	0.00295 J	<0.0005	0.174	0.818	0.99
BAP-61	10/27/15	<0.0008	0.0085	0.0805	<0.0003	<0.0003	<0.002	0.00783	<0.1	<0.0003	0.00612 J	<0.00008	0.00236 J	<0.002	<0.0005	1.30	<1.58	2.88
	12/15/15	<0.0008	0.0111	0.0913	<0.0003	<0.0003	<0.002	0.00418 J	0.223 J	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.870	2.43	3.30
	03/01/16	<0.0008	0.0057	0.11	<0.0003	<0.0003	<0.002	0.00888	<0.1	<0.0003	0.0058 J	<0.00008	<0.002	<0.002	<0.0005	0.440	<1.54	1.98
	04/13/16	<0.0008	0.00564	0.113	<0.0003	<0.0003	<0.002	0.00735	0.131 J	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	<0.56	1.12	1.68
	06/13/16	<0.0008	0.0184	0.131	<0.0003	<0.0003	<0.002	0.00589	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.700	<1.49	2.19
	09/01/16	<0.0008	0.0103	0.131	<0.0003	<0.0003	<0.002	0.00618	0.212 J	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.473	<0.484	0.96
	10/06/16	<0.0008	0.00433 J	0.106	<0.0003	<0.0003	<0.002	0.00592	0.104 J	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.438	<0.376	0.81
	12/14/16	0.00219 J	0.00269 J	0.097	<0.0003	<0.0003	<0.002	0.00692	<0.1	<0.0003	0.0054 J	<0.00008	<0.002	<0.002	<0.0005	0.152	0.737	0.89
BAP-62	10/27/15	<0.0008	<0.002	0.132	<0.0003	<0.0003	<0.002	<0.003	0.168 J	<0.0003	0.043	<0.00008	0.00496 J	0.0313	<0.0005	0.314	<1.67	1.98
	12/15/15	<0.0008	<0.002	0.21	<0.0003	<0.0003	<0.002	0.00356 J	0.356 J	<0.0003	0.0417	<0.00008	0.00805	0.0345	<0.0005	0.695	<0.162	0.86
	03/01/16	<0.0008	<0.002	0.128	<0.0003	<0.0003	<0.002	<0.003	0.237 J	<0.0003	0.0413	<0.00008	0.00376 J	0.0258	<0.0005	1.28	<1.67	2.95
	04/13/16	<0.0008	<0.002	0.0993	<0.0003	<0.0003	<0.002	<0.003	0.359 J	<0.0003	0.0386	<0.00008	0.00389 J	0.028	<0.0005	<0.156	<1.2	1.36
	06/13/16	<0.0008	<0.002	0.0652	<0.0003	0.000386 J	<0.002	<0.003	0.256 J	<0.0003	0.0451	<0.00008	0.00481 J	0.0462	<0.0005	0.253	1.60	1.85
	09/01/16	<0.0008	<0.002	0.0658	<0.0003	<0.0003	<0.002	<0.003	0.359 J	<0.0003	0.0416	<0.00008	0.00285 J	0.0271	<0.0005	0.199	1.12	1.32
	10/06/16	<0.0008	<0.002	0.0533	<0.0003	<0.0003	<0.002	<0.003	0.348 J	<0.0003	0.0373	<0.00008	<0.002	0.019	<0.0005	<0.047	0.99	1.04
	12/15/16	<0.0008	<0.002	0.0706	<0.0003	<0.0003	<0.002	<0.003	0.159 J	<0.0003	0.0439	<0.00008	<0.002	0.018	<0.0005	0.191	0.431	0.62

**TABLE 4**  
**APPENDIX IV BACKGROUND GROUNDWATER ANALYTICAL DATA**  
**BIG BROWN STEAM ELECTRIC STATION**  
**BOTTOM ASH PONDS**

Sample Location	Date Sampled	Sb (mg/L)	As (mg/L)	Ba (mg/L)	Be (mg/L)	Cd (mg/L)	Cr (mg/L)	Co (mg/L)	Fl (mg/L)	Pb (mg/L)	Li (mg/L)	Hg (mg/L)	Mo (mg/L)	Se (mg/L)	Th (mg/L)	Ra 226 (pCi/L)	Ra 228 (pCi/L)	Ra 226/228 Combined^ (pCi/L)
BAP-63	10/27/15	<0.0008	0.00576	0.142	<0.0003	<0.0003	<0.002	0.00808	<0.1	0.000313 J	<0.005	<0.00008	0.0046 J	<0.002	<0.0005	0.682	<1.54	2.22
	12/15/15	<0.0008	0.0125	0.187	<0.0003	<0.0003	<0.002	0.00786	0.17 J	<0.0003	<0.005	<0.00008	0.00342 J	<0.002	<0.0005	0.705	2.18	2.89
	02/29/16	<0.0008	0.00892	0.0989	<0.0003	<0.0003	<0.002	<0.003	<0.1	0.000345 J	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.922	<1.49	2.41
	04/13/16	<0.0008	0.0128	0.186	<0.0003	<0.0003	<0.002	<0.003	0.176 J	<0.0003	<0.005	<0.00008	0.00334 J	<0.002	<0.0005	0.351	<1.12	1.47
	06/13/16	<0.0008	0.0176	0.23	<0.0003	<0.0003	<0.002	<0.003	<0.1	0.000649 J	<0.005	<0.00008	0.00972	<0.002	<0.0005	0.227	2.71	2.94
	09/01/16	<0.0008	0.0177 J	0.213	<0.0003	<0.0003	<0.002	0.0032 J	0.188 J	0.000406 J	<0.005	<0.00008	0.00738	<0.002	<0.0005	0.607	1.27	1.88
	10/06/16	<0.0008	0.0137	0.203	<0.0003	<0.0003	<0.002	<0.003	0.16 J	0.00045 J	<0.005	<0.00008	0.00821	<0.002	<0.0005	0.388	1.83	2.22
	12/15/16	<0.0008	0.00628	0.209	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	<0.005	<0.00008	0.00766	<0.002	<0.0005	0.338	0.959	1.30

Notes:

1. Abbreviations: mg/L - milligrams per liter; pCi/L - picocuries per liter.
2. ^ - Sum of Ra 226 and Ra 228 concentrations. Non-detect isotope results were assigned a value equal to the minimum detectable concentration.
3. J - concentration is below method quantitation limit; result is an estimate.

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**TABLE 5**  
**APPENDIX III DETECTION MONITORING GROUNDWATER ANALYTICAL DATA**  
**BIG BROWN STEAM ELECTRIC STATION**  
**BOTTOM ASH PONDS**

<b>Sample Location</b>	<b>Date Sampled</b>	<b>B (mg/L)</b>	<b>Ca (mg/L)</b>	<b>Cl (mg/L)</b>	<b>Fl (mg/L)</b>	<b>pH (s.u.)</b>	<b>SO<sub>4</sub> (mg/L)</b>	<b>TDS (mg/L)</b>
BAP-57	09/27/17	0.376	16.1	85.4	<0.100	6.68	55.8	352
BAP-58	09/27/17	1.06	18.4	35.1	<0.100	6.90	70.4	328
BAP-59	09/27/17	2.85	26.4	55.4	0.205 J	6.69	157	500
BAP-60	09/27/17	0.531	12.9	13.5	0.197 J	6.72	91.3	328
BAP-61	09/27/17	1.22	91.5	214	<0.100	6.65	116	688
BAP-62	09/27/17	0.82	63.6	20.4	0.163 J	6.86	109	363
BAP-63	09/27/17	1.91	150	55.1	0.260 J	6.82	132	591

Notes:

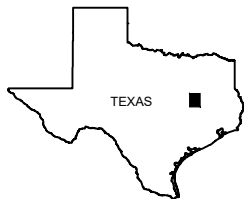
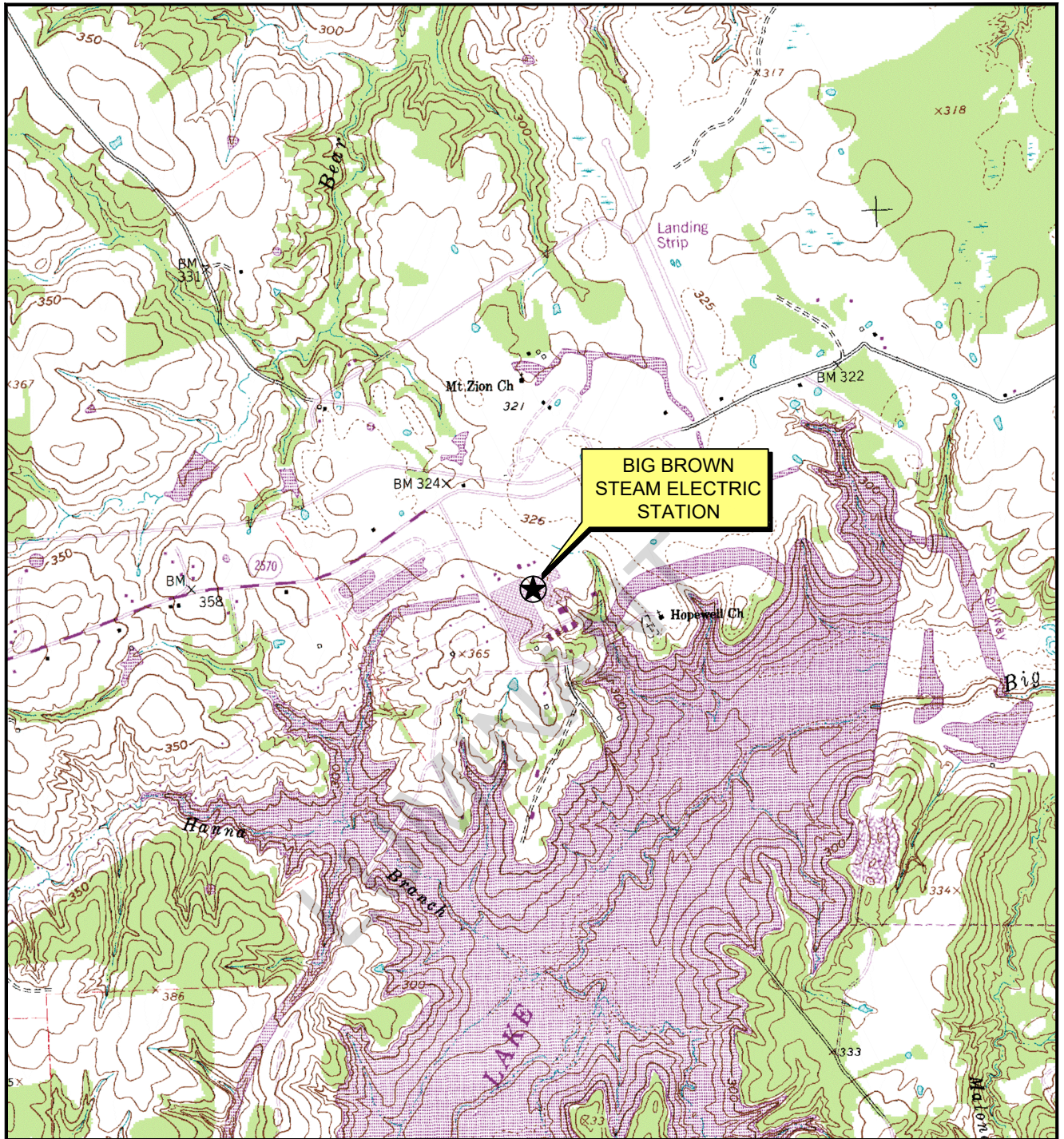
1. Abbreviations: mg/L - milligrams per liter; TDS - total dissolved solids; s.u. - standard units.
2. J - concentration is below method quantitation limit; result is an estimate.

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**Figures**

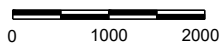




□ QUADRANGLE LOCATION



Scale in Feet



**BIG BROWN STEAM ELECTRIC STATION**  
 FAIRFIELD, TEXAS

Figure 1

**SITE LOCATION MAP**

PROJECT: 5123A

BY: AJD

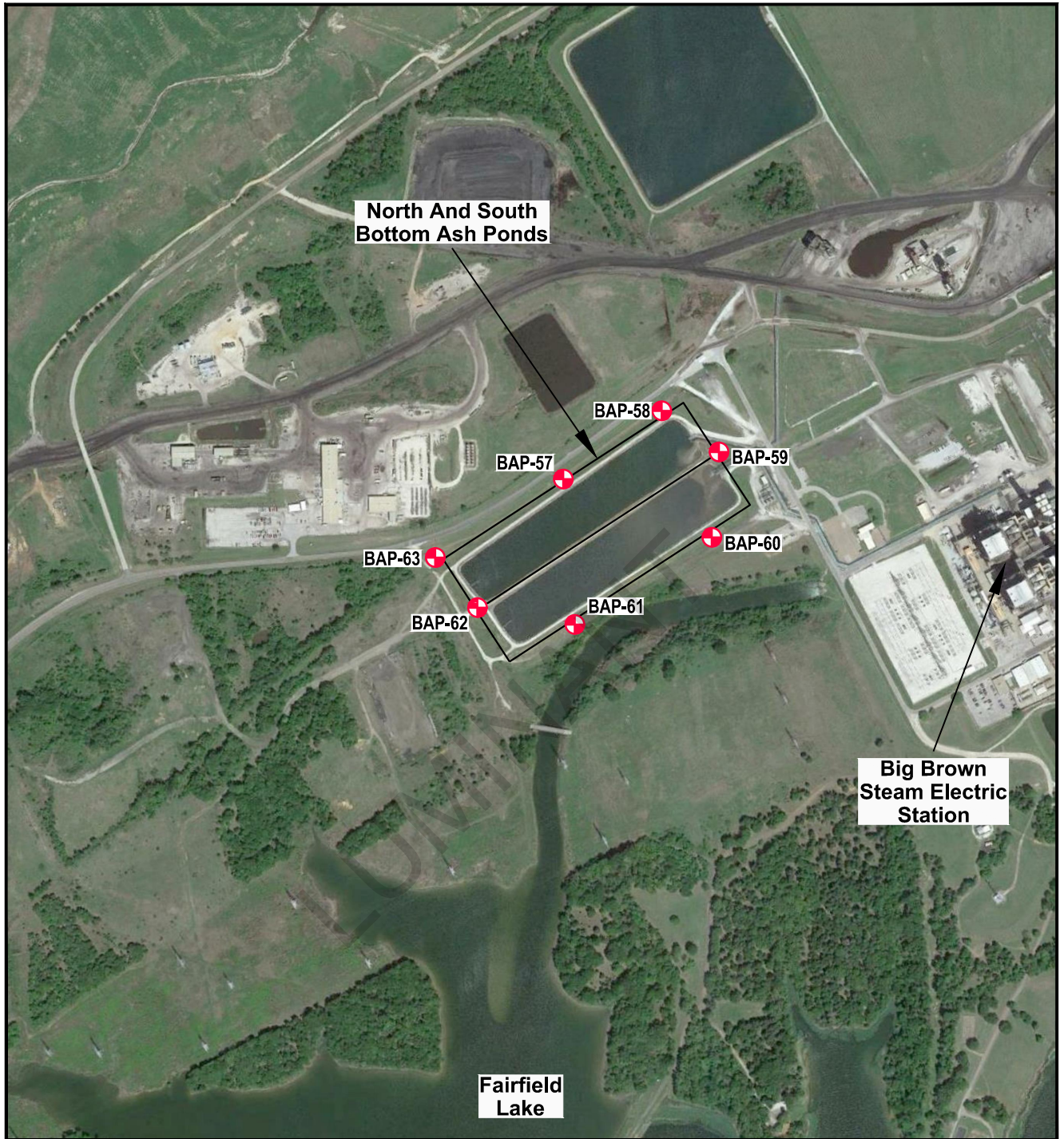
REVISIONS

DATE: JUNE, 2015

CHECKED: PJB

**PASTOR, BEHLING & WHEELER, LLC**  
 CONSULTING ENGINEERS AND SCIENTISTS

SOURCE:  
 Base map from www.tnris.gov □ Young, TX 7.5 min. USGS □ quadrangle dated 1□61,  
 re□sed 1□82.

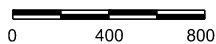


**EXPLANATION**

 CCR Monitoring Well Location



Scale in Feet



SOURCE:  
Imagery from Google Earth dated 3/30/2017.

**BIG BROWN STEAM ELECTRIC STATION**  
FAIRFIELD, TEXAS

Figure 2

**BOTTOM ASH PONDS  
DETAILED SITE PLAN**

PROJECT: 5164A

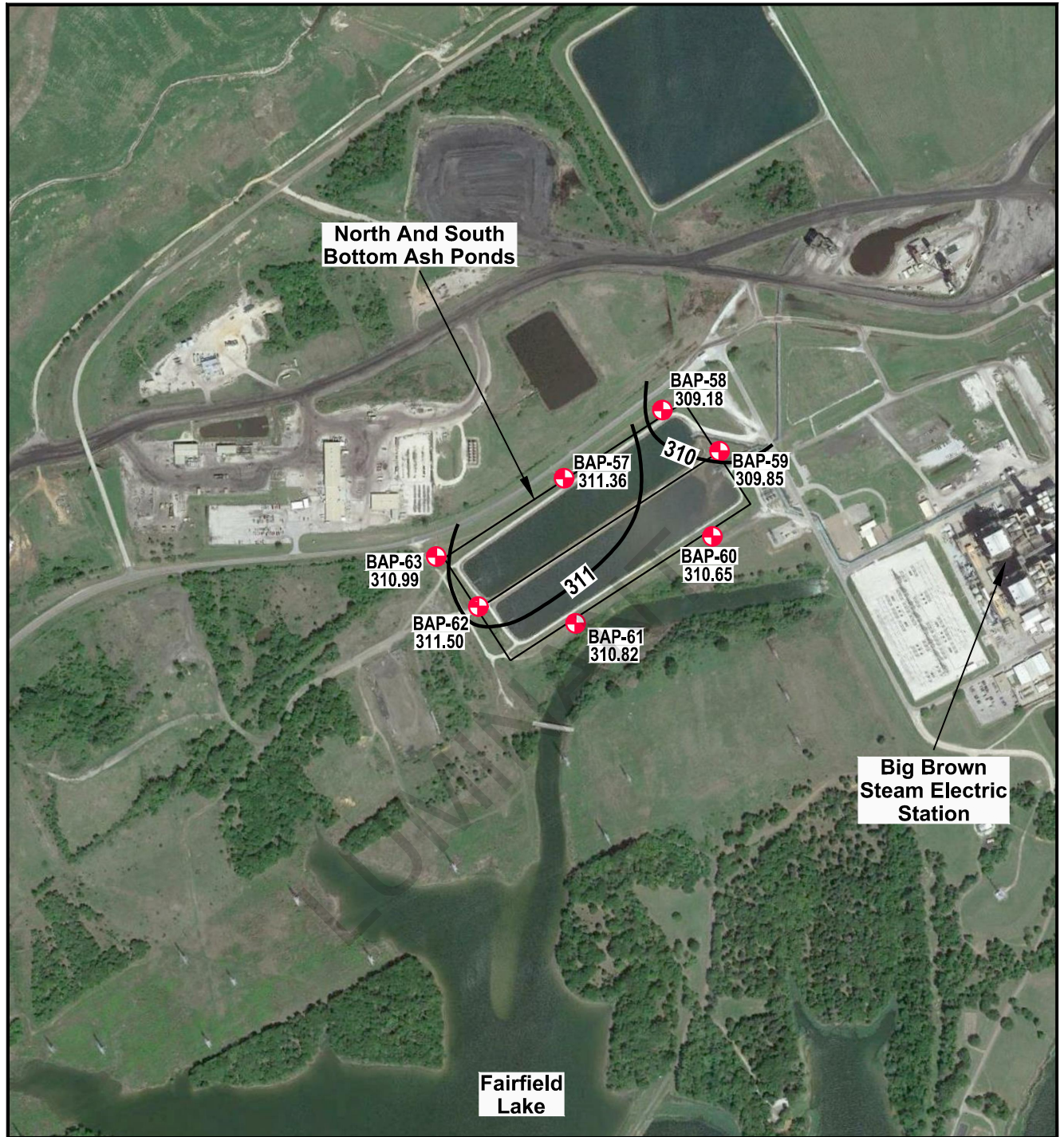
BY: AJD

REVISIONS




DATE: SEPT., 2017

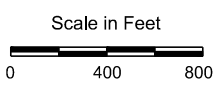
CHECKED: PJB

**PASTOR, BEHLING & WHEELER, LLC**  
CONSULTING ENGINEERS AND SCIENTISTS



**EXPLANATION**

-  CCR Monitoring Well Location
-  (294.01) Groundwater Potentiometric Surface (ft. MSL)
-  - 300 - Groundwater Potentiometric Surface Contour (C.I. = 1 ft.)



SOURCE:  
Imagery from Google Earth dated 3/20/2017.

**BIG BROWN STEAM ELECTRIC STATION**  
FAIRFIELD, TEXAS

Figure 3

**BOTTOM ASH PONDS GROUNDWATER  
POTENTIOMETRIC SURFACE MAP  
SEPTEMBER 27, 2017**

PROJECT: 5347A	BY: AJD	REVISIONS
DATE: JAN., 2018	CHECKED: PJB	

**PASTOR, BEHLING & WHEELER, LLC**  
CONSULTING ENGINEERS AND SCIENTISTS

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**Appendix A**

**Laboratory Analytical Reports – Background Data**



December 07, 2015

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant -Big Brown

Order No.: 1510304

Dear Will Vienne:

DHL Analytical, Inc. received 15 sample(s) on 10/30/2015 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read "John DuPont".

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-15-15



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LUMINANT



**John Dupont**

---

**From:** Sara Taube [Sara.Taube@pbwllc.com]  
**Sent:** Wednesday, July 22, 2015 12:05 PM  
**To:** John Dupont  
**Subject:** CCR Appendix III and IV  
**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi John,

Here are the Appendix III and Appendix IV constituents that we will need to have analyzed under the CCR Rule.

**Appendix III**

Boron  
Calcium  
Chloride  
Fluoride  
pH  
sulfate  
TDS

**Appendix IV**

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Fluoride  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Radium 226 and 228

We are looking to have approximately 74 wells sampled 8 times over the course of the next two years. Please let me know if there is any more information you might need.

Cheers,

Sara

10/26/2015



ORIGIN ID:GGGA (903) 794-0625  
PASTOR, BEHLING & WHEELER, LLC  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 786643843  
UNITED STATES US

SHIP DATE: 29OCT15  
ACTWT: 50.10 LB  
CAD: /POS1621  
DIMS: 24x13x14 IN  
BILL SENDER

Part # 156237-436 INT2 35/15

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PASTOR, BEHLING & WHEELER, LLC  
2201 DOUBLE CREEK DR STE 1004  
ROUND ROCK, TX 786643843  
UNITED STATES US

SHIP DATE: 29OCT15  
ACTWGT: 50.50 LB  
CAD: /POS1621  
DIMS: 14x13x12 IN  
BILL SENDER

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2300 DOUBLE CREEK DR

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TRK# 8083 7896 0616

A8 BSMA

78664  
TX-US AUS



ORIGIN ID:GGGA (903) 794-0625  
PASTOR, BEHLING & WHEELER, LLC  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 786643843  
UNITED STATES US

SHIP DATE: 29OCT15  
ACTWGT: 51.10 LB  
CAD: /PGS1621  
DIMS: 14x13x12 IN  
BILL SENDER

TO

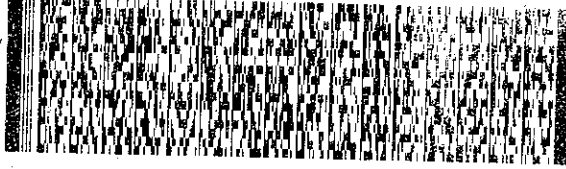
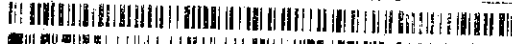
DHL ANALYTICAL  
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(612) 300-8222  
INV:  
PO:

REF:

DEPT:



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Express



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USPS

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**A8 BSMA**

78664  
TX-US AUS



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7-436 812 05/15

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 10/30/2015

Work Order Number 1510304

Received by MB

Checklist completed by: [Signature] 10/30/2015

Reviewed by: [Initials] 10/30/2015

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  3.1 °C
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 8086  
Adjusted? No Checked by MB
- Water - pH>9 (S) or pH>12 (CN) acceptable upon receipt? Yes  No  NA  LOT #  
Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Lab Order:** 1510304

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

- Method SW6020A - Metals Analysis
- Method SW7470A - Mercury Analysis
- Method E300 - Anions Analysis
- Method M4500-H+ B - pH of a Water Analysis
- Method M2540C - TDS Analysis

**LOG IN**

The samples were received and log-in performed on 10/30/15. A total of 15 samples were received. The samples arrived in good condition and were properly packaged.

**METALS ANALYSIS**

For Metals analysis performed on 11/9/15 Boron was detected below the reporting limit in the method blank (MB-72210). All samples may be biased high for this analyte. No further corrective actions were taken.

For Metals analysis performed on 11/9/15 the matrix spike and matrix spike duplicate recoveries were below control limits for a total of three analytes. These are flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

For Metals analysis performed on 11/9/15 the PDS recovery was below control limits for Barium and Boron. These are flagged accordingly. The serial dilution was within control limits for these analytes. No further corrective actions were taken.

**MERCURY ANALYSIS**

For Mercury analysis the matrix spike and matrix spike duplicate was re-prepped and re-analyzed on 11/10/15. This was due to a prep error. This exceeded the 24 hour prep window.

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Lab Order:** 1510304

**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1510304-01	BAP-60		10/27/15 01:15 PM	10/30/2015
1510304-02	BAP-61		10/27/15 02:10 PM	10/30/2015
1510304-03	BAP-62		10/27/15 03:10 PM	10/30/2015
1510304-04	BAP-59		10/27/15 04:05 PM	10/30/2015
1510304-05	BAP-63		10/27/15 05:05 PM	10/30/2015
1510304-06	BAP-57		10/28/15 08:20 AM	10/30/2015
1510304-07	BAP-58		10/28/15 09:15 AM	10/30/2015
1510304-08	AMW-21		10/28/15 10:15 AM	10/30/2015
1510304-09	AMW-13		10/28/15 11:05 AM	10/30/2015
1510304-10	AMW-14		10/28/15 11:55 AM	10/30/2015
1510304-11	AMW-23		10/28/15 12:55 PM	10/30/2015
1510304-12	AMW-22		10/28/15 01:50 PM	10/30/2015
1510304-13	AMW-20		10/28/15 02:55 PM	10/30/2015
1510304-14	FMW-4R		10/28/15 04:00 PM	10/30/2015
1510304-15	AMW-10		10/28/15 05:00 PM	10/30/2015

LUMINANT

**Lab Order:** 1510304  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1510304-01A	BAP-60	10/27/15 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-60	10/27/15 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-60	10/27/15 01:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-01D	BAP-60	10/27/15 01:15 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-60	10/27/15 01:15 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-60	10/27/15 01:15 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	BAP-60	10/27/15 01:15 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-02A	BAP-61	10/27/15 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-61	10/27/15 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-61	10/27/15 02:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-02D	BAP-61	10/27/15 02:10 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-61	10/27/15 02:10 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-61	10/27/15 02:10 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	BAP-61	10/27/15 02:10 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-03A	BAP-62	10/27/15 03:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-62	10/27/15 03:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-62	10/27/15 03:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-03D	BAP-62	10/27/15 03:10 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-62	10/27/15 03:10 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-62	10/27/15 03:10 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	BAP-62	10/27/15 03:10 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-04A	BAP-59	10/27/15 04:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-59	10/27/15 04:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-59	10/27/15 04:05 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-04D	BAP-59	10/27/15 04:05 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-59	10/27/15 04:05 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-59	10/27/15 04:05 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	BAP-59	10/27/15 04:05 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124

**Lab Order:** 1510304  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1510304-05A	BAP-63	10/27/15 05:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-63	10/27/15 05:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-63	10/27/15 05:05 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-05D	BAP-63	10/27/15 05:05 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-63	10/27/15 05:05 PM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-63	10/27/15 05:05 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	BAP-63	10/27/15 05:05 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-06A	BAP-57	10/28/15 08:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-57	10/28/15 08:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-06D	BAP-57	10/28/15 08:20 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-57	10/28/15 08:20 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-57	10/28/15 08:20 AM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	BAP-57	10/28/15 08:20 AM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-07A	BAP-58	10/28/15 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	BAP-58	10/28/15 09:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-07D	BAP-58	10/28/15 09:15 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	BAP-58	10/28/15 09:15 AM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	BAP-58	10/28/15 09:15 AM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-08A	AMW-21	10/28/15 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-21	10/28/15 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-21	10/28/15 10:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-08D	AMW-21	10/28/15 10:15 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	AMW-21	10/28/15 10:15 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	AMW-21	10/28/15 10:15 AM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	AMW-21	10/28/15 10:15 AM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-09A	AMW-13	10/28/15 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-13	10/28/15 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-13	10/28/15 11:05 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177



**Lab Order:** 1510304  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1510304-09D	AMW-13	10/28/15 11:05 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	AMW-13	10/28/15 11:05 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	AMW-13	10/28/15 11:05 AM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	AMW-13	10/28/15 11:05 AM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-10A	AMW-14	10/28/15 11:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-14	10/28/15 11:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-14	10/28/15 11:55 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-10D	AMW-14	10/28/15 11:55 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	AMW-14	10/28/15 11:55 AM	Aqueous	E300	Anion Preparation	11/03/15 09:02 AM	72133
	AMW-14	10/28/15 11:55 AM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	AMW-14	10/28/15 11:55 AM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-11A	AMW-23	10/28/15 12:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-23	10/28/15 12:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-23	10/28/15 12:55 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-11D	AMW-23	10/28/15 12:55 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	AMW-23	10/28/15 12:55 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	AMW-23	10/28/15 12:55 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	AMW-23	10/28/15 12:55 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-12A	AMW-22	10/28/15 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-22	10/28/15 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-22	10/28/15 01:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-12D	AMW-22	10/28/15 01:50 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	AMW-22	10/28/15 01:50 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	AMW-22	10/28/15 01:50 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	AMW-22	10/28/15 01:50 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-13A	AMW-20	10/28/15 02:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-20	10/28/15 02:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-20	10/28/15 02:55 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177

**Lab Order:** 1510304  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1510304-13D	AMW-20	10/28/15 02:55 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	AMW-20	10/28/15 02:55 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	AMW-20	10/28/15 02:55 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	AMW-20	10/28/15 02:55 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-14A	FMW-4R	10/28/15 04:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	FMW-4R	10/28/15 04:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	FMW-4R	10/28/15 04:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-14D	FMW-4R	10/28/15 04:00 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	FMW-4R	10/28/15 04:00 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	FMW-4R	10/28/15 04:00 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	FMW-4R	10/28/15 04:00 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124
1510304-15A	AMW-10	10/28/15 05:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-10	10/28/15 05:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:53 AM	72210
	AMW-10	10/28/15 05:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72177
1510304-15D	AMW-10	10/28/15 05:00 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	AMW-10	10/28/15 05:00 PM	Aqueous	E300	Anion Preparation	11/04/15 08:57 AM	72159
	AMW-10	10/28/15 05:00 PM	Aqueous	M4500-H+ B	pH Preparation	10/30/15 12:04 PM	72102
	AMW-10	10/28/15 05:00 PM	Aqueous	M2540C	TDS Preparation	11/02/15 12:33 PM	72124

Lab Order: 1510304  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant -Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1510304-01A	BAP-60	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 11:22 AM	CETAC2_HG_151109 B
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 01:52 PM	ICP-MS3_151109A
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:14 PM	ICP-MS4_151110B
1510304-01D	BAP-60	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 10:09 AM	IC2_151103A
	BAP-60	Aqueous	E300	Anions by IC method - Water	72133	10	11/03/15 01:10 PM	IC2_151103A
	BAP-60	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:42 PM	TITRATOR_151030A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-02A	BAP-61	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 11:33 AM	CETAC2_HG_151109 B
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 02:04 PM	ICP-MS3_151109A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:18 PM	ICP-MS4_151110B
1510304-02D	BAP-61	Aqueous	E300	Anions by IC method - Water	72133	10	11/03/15 01:24 PM	IC2_151103A
	BAP-61	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 10:24 AM	IC2_151103A
	BAP-61	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:43 PM	TITRATOR_151030A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-03A	BAP-62	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 11:36 AM	CETAC2_HG_151109 B
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 02:10 PM	ICP-MS3_151109A
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:20 PM	ICP-MS4_151110B
1510304-03D	BAP-62	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 10:39 AM	IC2_151103A
	BAP-62	Aqueous	E300	Anions by IC method - Water	72133	10	11/03/15 01:39 PM	IC2_151103A
	BAP-62	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:46 PM	TITRATOR_151030A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-04A	BAP-59	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 11:38 AM	CETAC2_HG_151109 B
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 02:17 PM	ICP-MS3_151109A
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:22 PM	ICP-MS4_151110B
1510304-04D	BAP-59	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 10:53 AM	IC2_151103A
	BAP-59	Aqueous	E300	Anions by IC method - Water	72133	10	11/03/15 01:54 PM	IC2_151103A

**Lab Order:** 1510304  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1510304-04D	BAP-59	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:47 PM	TITRATOR_151030A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-05A	BAP-63	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 11:40 AM	CETAC2_HG_151109 B
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 02:23 PM	ICP-MS3_151109A
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:24 PM	ICP-MS4_151110B
1510304-05D	BAP-63	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 11:08 AM	IC2_151103A
	BAP-63	Aqueous	E300	Anions by IC method - Water	72133	10	11/03/15 02:08 PM	IC2_151103A
	BAP-63	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:50 PM	TITRATOR_151030A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-06A	BAP-57	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 11:47 AM	CETAC2_HG_151109 B
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 02:35 PM	ICP-MS3_151109A
1510304-06D	BAP-57	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 11:22 AM	IC2_151103A
	BAP-57	Aqueous	E300	Anions by IC method - Water	72133	10	11/03/15 02:23 PM	IC2_151103A
	BAP-57	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:52 PM	TITRATOR_151030A
	BAP-57	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-07A	BAP-58	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 11:56 AM	CETAC2_HG_151109 B
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 02:41 PM	ICP-MS3_151109A
1510304-07D	BAP-58	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 11:40 AM	IC2_151103A
	BAP-58	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:54 PM	TITRATOR_151030A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-08A	AMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 11:59 AM	CETAC2_HG_151109 B
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 02:53 PM	ICP-MS3_151109A
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:26 PM	ICP-MS4_151110B
1510304-08D	AMW-21	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 11:54 AM	IC2_151103A
	AMW-21	Aqueous	E300	Anions by IC method - Water	72133	100	11/03/15 03:15 PM	IC2_151103A
	AMW-21	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:56 PM	TITRATOR_151030A

**Lab Order:** 1510304  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1510304-08D	AMW-21	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-09A	AMW-13	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 12:01 PM	CETAC2_HG_151109 B
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 02:59 PM	ICP-MS3_151109A
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:28 PM	ICP-MS4_151110B
1510304-09D	AMW-13	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 12:09 PM	IC2_151103A
	AMW-13	Aqueous	E300	Anions by IC method - Water	72133	10	11/03/15 03:29 PM	IC2_151103A
	AMW-13	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 02:59 PM	TITRATOR_151030A
	AMW-13	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-10A	AMW-14	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 12:03 PM	CETAC2_HG_151109 B
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:30 PM	ICP-MS4_151110B
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 03:05 PM	ICP-MS3_151109A
1510304-10D	AMW-14	Aqueous	E300	Anions by IC method - Water	72133	1	11/03/15 12:23 PM	IC2_151103A
	AMW-14	Aqueous	E300	Anions by IC method - Water	72133	100	11/03/15 03:44 PM	IC2_151103A
	AMW-14	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 03:01 PM	TITRATOR_151030A
	AMW-14	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-11A	AMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 12:06 PM	CETAC2_HG_151109 B
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 03:59 PM	ICP-MS3_151109A
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:32 PM	ICP-MS4_151110B
1510304-11D	AMW-23	Aqueous	E300	Anions by IC method - Water	72159	1	11/04/15 10:02 AM	IC2_151104A
	AMW-23	Aqueous	E300	Anions by IC method - Water	72159	10	11/04/15 01:49 PM	IC2_151104A
	AMW-23	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 03:03 PM	TITRATOR_151030A
	AMW-23	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-12A	AMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 12:08 PM	CETAC2_HG_151109 B
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 04:05 PM	ICP-MS3_151109A
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:34 PM	ICP-MS4_151110B
1510304-12D	AMW-22	Aqueous	E300	Anions by IC method - Water	72159	1	11/04/15 10:16 AM	IC2_151104A

**Lab Order:** 1510304  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1510304-12D	AMW-22	Aqueous	E300	Anions by IC method - Water	72159	100	11/04/15 02:04 PM	IC2_151104A
	AMW-22	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 03:05 PM	TITRATOR_151030A
	AMW-22	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-13A	AMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 12:10 PM	CETAC2_HG_151109 B
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 04:11 PM	ICP-MS3_151109A
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:48 PM	ICP-MS4_151110B
1510304-13D	AMW-20	Aqueous	E300	Anions by IC method - Water	72159	1	11/04/15 10:31 AM	IC2_151104A
	AMW-20	Aqueous	E300	Anions by IC method - Water	72159	100	11/04/15 02:19 PM	IC2_151104A
	AMW-20	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 03:07 PM	TITRATOR_151030A
	AMW-20	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-14A	FMW-4R	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 12:12 PM	CETAC2_HG_151109 B
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 04:17 PM	ICP-MS3_151109A
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	10	11/10/15 12:50 PM	ICP-MS4_151110B
1510304-14D	FMW-4R	Aqueous	E300	Anions by IC method - Water	72159	1	11/04/15 10:46 AM	IC2_151104A
	FMW-4R	Aqueous	E300	Anions by IC method - Water	72159	100	11/04/15 02:33 PM	IC2_151104A
	FMW-4R	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 03:09 PM	TITRATOR_151030A
	FMW-4R	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C
1510304-15A	AMW-10	Aqueous	SW7470A	Mercury Total: Aqueous	72177	1	11/09/15 12:15 PM	CETAC2_HG_151109 B
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	1	11/09/15 04:23 PM	ICP-MS3_151109A
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72210	50	11/10/15 12:52 PM	ICP-MS4_151110B
1510304-15D	AMW-10	Aqueous	E300	Anions by IC method - Water	72159	1	11/04/15 11:00 AM	IC2_151104A
	AMW-10	Aqueous	E300	Anions by IC method - Water	72159	100	11/04/15 02:58 PM	IC2_151104A
	AMW-10	Aqueous	M4500-H+ B	pH	72102	1	10/30/15 03:11 PM	TITRATOR_151030A
	AMW-10	Aqueous	M2540C	Total Dissolved Solids	72124	1	11/03/15 08:00 AM	WC_151102C

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** BAP-60  
**Lab ID:** 1510304-01  
**Collection Date:** 10/27/15 01:15 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 11:22 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 01:52 PM
Arsenic	0.0112	0.00200	0.00500		mg/L	1	11/09/15 01:52 PM
Barium	0.221	0.00300	0.0100		mg/L	1	11/09/15 01:52 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 01:52 PM
Boron	0.651	0.0100	0.0300		mg/L	1	11/09/15 01:52 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 01:52 PM
Calcium	26.3	1.00	3.00		mg/L	10	11/10/15 12:14 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 01:52 PM
Cobalt	0.00433	0.00300	0.00500	J	mg/L	1	11/09/15 01:52 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 01:52 PM
Lithium	0.00979	0.00500	0.0100	J	mg/L	1	11/09/15 01:52 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 01:52 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 01:52 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 01:52 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	84.1	3.00	10.0		mg/L	10	11/03/15 01:10 PM
Fluoride	0.129	0.100	0.400	J	mg/L	1	11/03/15 10:09 AM
Sulfate	108	1.00	3.00		mg/L	1	11/03/15 10:09 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.80	0	0		pH Units@16.1°C	1	10/30/15 02:42 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	556	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** BAP-61  
**Lab ID:** 1510304-02  
**Collection Date:** 10/27/15 02:10 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 11:33 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 02:04 PM
Arsenic	0.00850	0.00200	0.00500		mg/L	1	11/09/15 02:04 PM
Barium	0.0805	0.00300	0.0100		mg/L	1	11/09/15 02:04 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:04 PM
Boron	0.658	0.0100	0.0300		mg/L	1	11/09/15 02:04 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:04 PM
Calcium	60.9	1.00	3.00		mg/L	10	11/10/15 12:18 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:04 PM
Cobalt	0.00783	0.00300	0.00500		mg/L	1	11/09/15 02:04 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:04 PM
Lithium	0.00612	0.00500	0.0100	J	mg/L	1	11/09/15 02:04 PM
Molybdenum	0.00236	0.00200	0.00500	J	mg/L	1	11/09/15 02:04 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:04 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 02:04 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	224	3.00	10.0		mg/L	10	11/03/15 01:24 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/03/15 10:24 AM
Sulfate	122	1.00	3.00		mg/L	1	11/03/15 10:24 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.95	0	0		pH Units@15.8°C	1	10/30/15 02:43 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	814	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** BAP-62  
**Lab ID:** 1510304-03  
**Collection Date:** 10/27/15 03:10 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 11:36 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 02:10 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:10 PM
Barium	0.132	0.00300	0.0100		mg/L	1	11/09/15 02:10 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:10 PM
Boron	2.78	0.100	0.300		mg/L	10	11/10/15 12:20 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:10 PM
Calcium	134	1.00	3.00		mg/L	10	11/10/15 12:20 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:10 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/09/15 02:10 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:10 PM
Lithium	0.0430	0.00500	0.0100		mg/L	1	11/09/15 02:10 PM
Molybdenum	0.00496	0.00200	0.00500	J	mg/L	1	11/09/15 02:10 PM
Selenium	0.0313	0.00200	0.00500		mg/L	1	11/09/15 02:10 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 02:10 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	49.1	0.300	1.00		mg/L	1	11/03/15 10:39 AM
Fluoride	0.168	0.100	0.400	J	mg/L	1	11/03/15 10:39 AM
Sulfate	.217	10.0	30.0		mg/L	10	11/03/15 01:39 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	7.17	0	0		pH Units@15.9°C	1	10/30/15 02:46 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	746	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** BAP-59  
**Lab ID:** 1510304-04  
**Collection Date:** 10/27/15 04:05 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 11:38 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 02:17 PM
Arsenic	0.00328	0.00200	0.00500	J	mg/L	1	11/09/15 02:17 PM
Barium	0.138	0.00300	0.0100		mg/L	1	11/09/15 02:17 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:17 PM
Boron	1.86	0.0100	0.0300		mg/L	1	11/09/15 02:17 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:17 PM
Calcium	64.2	1.00	3.00		mg/L	10	11/10/15 12:22 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:17 PM
Cobalt	0.00595	0.00300	0.00500		mg/L	1	11/09/15 02:17 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:17 PM
Lithium	0.00973	0.00500	0.0100	J	mg/L	1	11/09/15 02:17 PM
Molybdenum	0.00241	0.00200	0.00500	J	mg/L	1	11/09/15 02:17 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:17 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 02:17 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	132	3.00	10.0		mg/L	10	11/03/15 01:54 PM
Fluoride	0.152	0.100	0.400	J	mg/L	1	11/03/15 10:53 AM
Sulfate	202	10.0	30.0		mg/L	10	11/03/15 01:54 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	7.11	0	0		pH Units@16.6°C	1	10/30/15 02:47 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	799	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** BAP-63  
**Lab ID:** 1510304-05  
**Collection Date:** 10/27/15 05:05 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 11:40 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 02:23 PM
Arsenic	0.00576	0.00200	0.00500		mg/L	1	11/09/15 02:23 PM
Barium	0.142	0.00300	0.0100		mg/L	1	11/09/15 02:23 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:23 PM
Boron	0.774	0.0100	0.0300		mg/L	1	11/09/15 02:23 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:23 PM
Calcium	36.0	1.00	3.00		mg/L	10	11/10/15 12:24 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:23 PM
Cobalt	0.00808	0.00300	0.00500		mg/L	1	11/09/15 02:23 PM
Lead	0.000313	0.000300	0.00100	J	mg/L	1	11/09/15 02:23 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	11/09/15 02:23 PM
Molybdenum	0.00460	0.00200	0.00500	J	mg/L	1	11/09/15 02:23 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:23 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 02:23 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	68.0	3.00	10.0		mg/L	10	11/03/15 02:08 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/03/15 11:08 AM
Sulfate	116	1.00	3.00		mg/L	1	11/03/15 11:08 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.88	0	0		pH Units@16.6°C	1	10/30/15 02:50 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	518	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** BAP-57  
**Lab ID:** 1510304-06  
**Collection Date:** 10/28/15 08:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 11:47 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 02:35 PM
Arsenic	0.0125	0.00200	0.00500		mg/L	1	11/09/15 02:35 PM
Barium	0.160	0.00300	0.0100		mg/L	1	11/09/15 02:35 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:35 PM
Boron	0.208	0.0100	0.0300		mg/L	1	11/09/15 02:35 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:35 PM
Calcium	20.9	0.100	0.300		mg/L	1	11/09/15 02:35 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:35 PM
Cobalt	0.00688	0.00300	0.00500		mg/L	1	11/09/15 02:35 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:35 PM
Lithium	0.00574	0.00500	0.0100	J	mg/L	1	11/09/15 02:35 PM
Molybdenum	0.00962	0.00200	0.00500		mg/L	1	11/09/15 02:35 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:35 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 02:35 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	35.7	0.300	1.00		mg/L	1	11/03/15 11:22 AM
Fluoride	0.121	0.100	0.400	J	mg/L	1	11/03/15 11:22 AM
Sulfate	268	10.0	30.0		mg/L	10	11/03/15 02:23 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.90	0	0		pH Units@17.2°C	1	10/30/15 02:52 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	894	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** BAP-58  
**Lab ID:** 1510304-07  
**Collection Date:** 10/28/15 09:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 11:56 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 02:41 PM
Arsenic	0.00476	0.00200	0.00500	J	mg/L	1	11/09/15 02:41 PM
Barium	0.0674	0.00300	0.0100		mg/L	1	11/09/15 02:41 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:41 PM
Boron	1.04	0.0100	0.0300		mg/L	1	11/09/15 02:41 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:41 PM
Calcium	18.4	0.100	0.300		mg/L	1	11/09/15 02:41 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:41 PM
Cobalt	0.00752	0.00300	0.00500		mg/L	1	11/09/15 02:41 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:41 PM
Lithium	0.0257	0.00500	0.0100		mg/L	1	11/09/15 02:41 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:41 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:41 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 02:41 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	37.8	0.300	1.00		mg/L	1	11/03/15 11:40 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/03/15 11:40 AM
Sulfate	88.7	1.00	3.00		mg/L	1	11/03/15 11:40 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.97	0	0		pH Units@16.9°C	1	10/30/15 02:54 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	402	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** AMW-21  
**Lab ID:** 1510304-08  
**Collection Date:** 10/28/15 10:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 11:59 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 02:53 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:53 PM
Barium	1.25	0.00300	0.0100		mg/L	1	11/09/15 02:53 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:53 PM
Boron	0.0327	0.0100	0.0300		mg/L	1	11/09/15 02:53 PM
Cadmium	0.000488	0.000300	0.00100	J	mg/L	1	11/09/15 02:53 PM
Calcium	130	1.00	3.00		mg/L	10	11/10/15 12:26 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:53 PM
Cobalt	0.00597	0.00300	0.00500		mg/L	1	11/09/15 02:53 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:53 PM
Lithium	0.0165	0.00500	0.0100		mg/L	1	11/09/15 02:53 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:53 PM
Selenium	0.120	0.00200	0.00500		mg/L	1	11/09/15 02:53 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 02:53 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	801	30.0	100		mg/L	100	11/03/15 03:15 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/03/15 11:54 AM
Sulfate	12.2	1.00	3.00		mg/L	1	11/03/15 11:54 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.27	0	0		pH Units@17.6°C	1	10/30/15 02:56 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	2050	50.0	50.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** AMW-13  
**Lab ID:** 1510304-09  
**Collection Date:** 10/28/15 11:05 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 12:01 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 02:59 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:59 PM
Barium	0.0876	0.00300	0.0100		mg/L	1	11/09/15 02:59 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:59 PM
Boron	0.0304	0.0100	0.0300		mg/L	1	11/09/15 02:59 PM
Cadmium	0.000706	0.000300	0.00100	J	mg/L	1	11/09/15 02:59 PM
Calcium	43.2	1.00	3.00		mg/L	10	11/10/15 12:28 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:59 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/09/15 02:59 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 02:59 PM
Lithium	0.0112	0.00500	0.0100		mg/L	1	11/09/15 02:59 PM
Molybdenum	0.00526	0.00200	0.00500		mg/L	1	11/09/15 02:59 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 02:59 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 02:59 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	242	3.00	10.0		mg/L	10	11/03/15 03:29 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/03/15 12:09 PM
Sulfate	72.6	1.00	3.00		mg/L	1	11/03/15 12:09 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.23	0	0		pH Units@17.6°C	1	10/30/15 02:59 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	639	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** AMW-14  
**Lab ID:** 1510304-10  
**Collection Date:** 10/28/15 11:55 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>ABO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 12:03 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>KL</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 03:05 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 03:05 PM
Barium	0.164	0.00300	0.0100		mg/L	1	11/09/15 03:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 03:05 PM
Boron	0.0272	0.0100	0.0300	J	mg/L	1	11/09/15 03:05 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 03:05 PM
Calcium	187	1.00	3.00		mg/L	10	11/10/15 12:30 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 03:05 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/09/15 03:05 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 03:05 PM
Lithium	0.0302	0.00500	0.0100		mg/L	1	11/09/15 03:05 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 03:05 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 03:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 03:05 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	838	30.0	100		mg/L	100	11/03/15 03:44 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/03/15 12:23 PM
Sulfate	41.4	1.00	3.00		mg/L	1	11/03/15 12:23 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>LM</b>		
pH	6.25	0	0		pH Units@18°C	1	10/30/15 03:01 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>BJT</b>		
Total Dissolved Solids (Residue, Filterable)	2360	50.0	50.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** AMW-23  
**Lab ID:** 1510304-11  
**Collection Date:** 10/28/15 12:55 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 12:06 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 03:59 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 03:59 PM
Barium	0.232	0.00300	0.0100		mg/L	1	11/09/15 03:59 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 03:59 PM
Boron	1.44	0.0100	0.0300		mg/L	1	11/09/15 03:59 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 03:59 PM
Calcium	74.9	1.00	3.00		mg/L	10	11/10/15 12:32 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 03:59 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/09/15 03:59 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 03:59 PM
Lithium	0.00904	0.00500	0.0100	J	mg/L	1	11/09/15 03:59 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 03:59 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 03:59 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 03:59 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	297	3.00	10.0		mg/L	10	11/04/15 01:49 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/04/15 10:02 AM
Sulfate	80.2	1.00	3.00		mg/L	1	11/04/15 10:02 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.59	0	0		pH Units@17.6°C	1	10/30/15 03:03 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	825	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** AMW-22  
**Lab ID:** 1510304-12  
**Collection Date:** 10/28/15 01:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 12:08 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 04:05 PM
Arsenic	0.00272	0.00200	0.00500	J	mg/L	1	11/09/15 04:05 PM
Barium	0.581	0.00300	0.0100		mg/L	1	11/09/15 04:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:05 PM
Boron	0.0454	0.0100	0.0300		mg/L	1	11/09/15 04:05 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:05 PM
Calcium	83.9	1.00	3.00		mg/L	10	11/10/15 12:34 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:05 PM
Cobalt	0.0239	0.00300	0.00500		mg/L	1	11/09/15 04:05 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:05 PM
Lithium	0.0123	0.00500	0.0100		mg/L	1	11/09/15 04:05 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:05 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 04:05 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	400	30.0	100		mg/L	100	11/04/15 02:04 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/04/15 10:16 AM
Sulfate	18.5	1.00	3.00		mg/L	1	11/04/15 10:16 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.41	0	0		pH Units@18.3°C	1	10/30/15 03:05 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	1090	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** AMW-20  
**Lab ID:** 1510304-13  
**Collection Date:** 10/28/15 02:55 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 12:10 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 04:11 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:11 PM
Barium	0.581	0.00300	0.0100		mg/L	1	11/09/15 04:11 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:11 PM
Boron	0.0267	0.0100	0.0300	J	mg/L	1	11/09/15 04:11 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:11 PM
Calcium	78.0	1.00	3.00		mg/L	10	11/10/15 12:48 PM
Chromium	0.00476	0.00200	0.00500	J	mg/L	1	11/09/15 04:11 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/09/15 04:11 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:11 PM
Lithium	0.0191	0.00500	0.0100		mg/L	1	11/09/15 04:11 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:11 PM
Selenium	0.00217	0.00200	0.00500	J	mg/L	1	11/09/15 04:11 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 04:11 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	406	30.0	100		mg/L	100	11/04/15 02:19 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/04/15 10:31 AM
Sulfate	13.5	1.00	3.00		mg/L	1	11/04/15 10:31 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.31	0	0		pH Units@18.1°C	1	10/30/15 03:07 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	1150	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** FMW-4R  
**Lab ID:** 1510304-14  
**Collection Date:** 10/28/15 04:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	0.000103	0.0000800	0.000200	J	mg/L	1	11/09/15 12:12 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 04:17 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:17 PM
Barium	0.401	0.00300	0.0100		mg/L	1	11/09/15 04:17 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:17 PM
Boron	0.0307	0.0100	0.0300		mg/L	1	11/09/15 04:17 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:17 PM
Calcium	53.3	1.00	3.00		mg/L	10	11/10/15 12:50 PM
Chromium	0.00238	0.00200	0.00500	J	mg/L	1	11/09/15 04:17 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/09/15 04:17 PM
Lead	0.000349	0.000300	0.00100	J	mg/L	1	11/09/15 04:17 PM
Lithium	0.0143	0.00500	0.0100		mg/L	1	11/09/15 04:17 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:17 PM
Selenium	0.00252	0.00200	0.00500	J	mg/L	1	11/09/15 04:17 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 04:17 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	332	30.0	100		mg/L	100	11/04/15 02:33 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/04/15 10:46 AM
Sulfate	14.3	1.00	3.00		mg/L	1	11/04/15 10:46 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.35	0	0		pH Units@18.2°C	1	10/30/15 03:09 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	935	10.0	10.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 07-Dec-15

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant -Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1510304

**Client Sample ID:** AMW-10  
**Lab ID:** 1510304-15  
**Collection Date:** 10/28/15 05:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 12:15 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>KL</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/09/15 04:23 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:23 PM
Barium	2.23	0.150	0.500		mg/L	50	11/10/15 12:52 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:23 PM
Boron	0.0360	0.0100	0.0300		mg/L	1	11/09/15 04:23 PM
Cadmium	0.00121	0.000300	0.00100		mg/L	1	11/09/15 04:23 PM
Calcium	321	5.00	15.0		mg/L	50	11/10/15 12:52 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:23 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/09/15 04:23 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 04:23 PM
Lithium	0.0317	0.00500	0.0100		mg/L	1	11/09/15 04:23 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 04:23 PM
Selenium	0.0148	0.00200	0.00500		mg/L	1	11/09/15 04:23 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/09/15 04:23 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	1470	30.0	100		mg/L	100	11/04/15 02:58 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/04/15 11:00 AM
Sulfate	10.3	1.00	3.00		mg/L	1	11/04/15 11:00 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.30	0	0		pH Units@18.6°C	1	10/30/15 03:11 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	4020	50.0	50.0		mg/L	1	11/03/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT: Pastor, Behling & Wheeler

**ANALYTICAL QC SUMMARY REPORT**

Work Order: 1510304

Project: Luminant -Big Brown

RunID: CETAC2\_HG\_151109B

The QC data in batch 72177 applies to the following samples: 1510304-01A, 1510304-02A, 1510304-03A, 1510304-04A, 1510304-05A, 1510304-06A, 1510304-07A, 1510304-08A, 1510304-09A, 1510304-10A, 1510304-11A, 1510304-12A, 1510304-13A, 1510304-14A, 1510304-15A

Sample ID	<b>MB-72177</b>	Batch ID:	<b>72177</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>
SampType:	<b>MBLK</b>	Run ID:	<b>CETAC2_HG_151109B</b>	Analysis Date:	<b>11/9/2015 11:15:44 AM</b>	Prep Date:	<b>11/5/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.0000800	0.000200								

Sample ID	<b>LCS-72177</b>	Batch ID:	<b>72177</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>
SampType:	<b>LCS</b>	Run ID:	<b>CETAC2_HG_151109B</b>	Analysis Date:	<b>11/9/2015 11:18:00 AM</b>	Prep Date:	<b>11/5/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00197	0.000200	0.00200	0	98.5	85	115			

Sample ID	<b>LCSD-72177</b>	Batch ID:	<b>72177</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>
SampType:	<b>LCSD</b>	Run ID:	<b>CETAC2_HG_151109B</b>	Analysis Date:	<b>11/9/2015 11:20:16 AM</b>	Prep Date:	<b>11/5/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00195	0.000200	0.00200	0	97.5	85	115	1.02	15	

Sample ID	<b>1510304-01A SD</b>	Batch ID:	<b>72177</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>
SampType:	<b>SD</b>	Run ID:	<b>CETAC2_HG_151109B</b>	Analysis Date:	<b>11/9/2015 11:24:48 AM</b>	Prep Date:	<b>11/5/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.000400	0.00100	0	0				0	10	

Sample ID	<b>1510304-01A PDS</b>	Batch ID:	<b>72177</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>
SampType:	<b>PDS</b>	Run ID:	<b>CETAC2_HG_151109B</b>	Analysis Date:	<b>11/9/2015 11:27:04 AM</b>	Prep Date:	<b>11/5/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00245	0.000200	0.00250	0	98.0	85	115			

Sample ID	<b>1510304-01A MS</b>	Batch ID:	<b>72177</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>
SampType:	<b>MS</b>	Run ID:	<b>CETAC2_HG_151109B</b>	Analysis Date:	<b>11/10/2015 4:25:13 PM</b>	Prep Date:	<b>11/5/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00205	0.000200	0.00200	0	103	80	120			

Sample ID	<b>1510304-01A MSD</b>	Batch ID:	<b>72177</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>
SampType:	<b>MSD</b>	Run ID:	<b>CETAC2_HG_151109B</b>	Analysis Date:	<b>11/10/2015 4:27:29 PM</b>	Prep Date:	<b>11/5/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00219	0.000200	0.00200	0	110	80	120	6.60	15	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_151109B

Sample ID <b>ICV-151109</b>	Batch ID: <b>R82564</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_151109B</b>	Analysis Date: <b>11/9/2015 10:48:31 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00393	0.000200	0.00400	0	98.2	90	110
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Sample ID <b>CCV1-151109</b>	Batch ID: <b>R82564</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_151109B</b>	Analysis Date: <b>11/9/2015 11:52:20 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00204	0.000200	0.00200	0	102	90	110
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Sample ID <b>CCV2-151109</b>	Batch ID: <b>R82564</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_151109B</b>	Analysis Date: <b>11/9/2015 12:17:26 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00204	0.000200	0.00200	0	102	90	110
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Sample ID <b>ICV-151110</b>	Batch ID: <b>R82564</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_151109B</b>	Analysis Date: <b>11/10/2015 3:36:25 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00396	0.000200	0.00400	0	99.0	90	110
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Sample ID <b>CCV1-151110</b>	Batch ID: <b>R82564</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_151109B</b>	Analysis Date: <b>11/10/2015 4:20:38 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00206	0.000200	0.00200	0	103	90	110
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Sample ID <b>CCV2-151110</b>	Batch ID: <b>R82564</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_151109B</b>	Analysis Date: <b>11/10/2015 4:36:35 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00204	0.000200	0.00200	0	102	90	110
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<b>Qualifiers:</b> B Analyte detected in the associated Method Blank J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit RL Reporting Limit J Analyte detected between SDL and RL	DF Dilution Factor MDL Method Detection Limit R RPD outside accepted control limits S Spike Recovery outside control limits N Parameter not NELAC certified
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_151109A**

The QC data in batch 72210 applies to the following samples: 1510304-01A, 1510304-02A, 1510304-03A, 1510304-04A, 1510304-05A, 1510304-06A, 1510304-07A, 1510304-08A, 1510304-09A, 1510304-10A, 1510304-11A, 1510304-12A, 1510304-13A, 1510304-14A, 1510304-15A

Sample ID <b>MB-72210</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 12:52:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Boron	0.0151	0.0300								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID <b>LCS-72210</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 12:58:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.188	0.00250	0.200	0	94.0	80	120			
Arsenic	0.180	0.00500	0.200	0	89.8	80	120			
Barium	0.182	0.0100	0.200	0	90.9	80	120			
Beryllium	0.194	0.00100	0.200	0	97.1	80	120			
Boron	0.200	0.0300	0.200	0	99.8	80	120			
Cadmium	0.179	0.00100	0.200	0	89.4	80	120			
Calcium	4.67	0.300	5.00	0	93.4	80	120			
Chromium	0.184	0.00500	0.200	0	91.8	80	120			
Cobalt	0.191	0.00500	0.200	0	95.3	80	120			
Lead	0.187	0.00100	0.200	0	93.6	80	120			
Lithium	0.185	0.0100	0.200	0	92.4	80	120			
Molybdenum	0.170	0.00500	0.200	0	85.1	80	120			
Selenium	0.179	0.00500	0.200	0	89.4	80	120			
Thallium	0.191	0.00150	0.200	0	95.6	80	120			

Sample ID <b>LCSD-72210</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 1:04:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.184	0.00250	0.200	0	91.8	80	120	2.37	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_151109A**

Sample ID: <b>LCSD-72210</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 1:04:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.175	0.00500	0.200	0	87.6	80	120	2.54	15	
Barium	0.181	0.0100	0.200	0	90.6	80	120	0.386	15	
Beryllium	0.197	0.00100	0.200	0	98.6	80	120	1.48	15	
Boron	0.207	0.0300	0.200	0	104	80	120	3.69	15	
Cadmium	0.177	0.00100	0.200	0	88.6	80	120	0.899	15	
Calcium	4.74	0.300	5.00	0	94.8	80	120	1.57	15	
Chromium	0.181	0.00500	0.200	0	90.6	80	120	1.21	15	
Cobalt	0.190	0.00500	0.200	0	95.0	80	120	0.263	15	
Lead	0.189	0.00100	0.200	0	94.4	80	120	0.904	15	
Lithium	0.190	0.0100	0.200	0	95.2	80	120	2.99	15	
Molybdenum	0.171	0.00500	0.200	0	85.5	80	120	0.469	15	
Selenium	0.177	0.00500	0.200	0	88.3	80	120	1.18	15	
Thallium	0.195	0.00150	0.200	0	97.7	80	120	2.17	15	

Sample ID: <b>1510304-01A SD</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 1:58:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	0.0110	0.0250	0	0.0112				1.58	10	
Barium	0.216	0.0500	0	0.221				2.45	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Boron	0.640	0.150	0	0.651				1.66	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0.00433				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	<0.0250	0.0500	0	0.00979				0	10	
Molybdenum	<0.0100	0.0250	0	0				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID: <b>1510304-01A PDS</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 3:17:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.182	0.00250	0.200	0	91.2	80	120			
Arsenic	0.194	0.00500	0.200	0.0112	91.3	80	120			
Barium	0.379	0.0100	0.200	0.221	79.3	80	120			S
Beryllium	0.190	0.00100	0.200	0	95.2	80	120			
Boron	0.734	0.0300	0.200	0.651	41.2	80	120			S

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_151109A**

Sample ID <b>1510304-01A PDS</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 3:17:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.179	0.00100	0.200	0	89.3	80	120			
Chromium	0.184	0.00500	0.200	0	91.8	80	120			
Cobalt	0.191	0.00500	0.200	0.00433	93.2	80	120			
Lead	0.186	0.00100	0.200	0	92.8	80	120			
Lithium	0.179	0.0100	0.200	0.00979	84.7	80	120			
Molybdenum	0.174	0.00500	0.200	0	87.0	80	120			
Selenium	0.181	0.00500	0.200	0	90.4	80	120			
Thallium	0.192	0.00150	0.200	0	96.0	80	120			

Sample ID <b>1510304-01A MS</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 3:23:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.190	0.00250	0.200	0	94.8	80	120			
Arsenic	0.199	0.00500	0.200	0.0112	93.8	80	120			
Barium	0.401	0.0100	0.200	0.221	90.0	80	120			
Beryllium	0.192	0.00100	0.200	0	96.2	80	120			
Boron	0.770	0.0300	0.200	0.651	59.6	80	120			S
Cadmium	0.181	0.00100	0.200	0	90.6	80	120			
Calcium	30.2	0.300	5.00	26.7	71.6	80	120			S
Chromium	0.181	0.00500	0.200	0	90.4	80	120			
Cobalt	0.188	0.00500	0.200	0.00433	92.1	80	120			
Lead	0.184	0.00100	0.200	0	92.2	80	120			
Lithium	0.184	0.0100	0.200	0.00979	86.9	80	120			
Molybdenum	0.180	0.00500	0.200	0	90.0	80	120			
Selenium	0.180	0.00500	0.200	0	90.2	80	120			
Thallium	0.193	0.00150	0.200	0	96.4	80	120			

Sample ID <b>1510304-01A MSD</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 3:29:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.182	0.00250	0.200	0	91.2	80	120	3.87	15	
Arsenic	0.192	0.00500	0.200	0.0112	90.4	80	120	3.53	15	
Barium	0.397	0.0100	0.200	0.221	88.0	80	120	0.978	15	
Beryllium	0.186	0.00100	0.200	0	93.1	80	120	3.33	15	
Boron	0.776	0.0300	0.200	0.651	62.6	80	120	0.776	15	S
Cadmium	0.176	0.00100	0.200	0	87.8	80	120	3.25	15	
Calcium	30.0	0.300	5.00	26.7	66.8	80	120	0.797	15	S
Chromium	0.176	0.00500	0.200	0	88.2	80	120	2.46	15	
Cobalt	0.186	0.00500	0.200	0.00433	90.6	80	120	1.55	15	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
 J Analyte detected between MDL and RL                                      MDL Method Detection Limit  
 ND Not Detected at the Method Detection Limit                              R RPD outside accepted control limits  
 RL Reporting Limit    S Spike Recovery outside control limits  
 J Analyte detected between SDL and RL                                      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_151109A**

Sample ID: <b>1510304-01A MSD</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 3:29:00 PM</b>	Prep Date: <b>11/6/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.180	0.00100	0.200	0	89.8	80	120	2.58	15	
Lithium	0.185	0.0100	0.200	0.00979	87.7	80	120	0.814	15	
Molybdenum	0.174	0.00500	0.200	0	87.1	80	120	3.27	15	
Selenium	0.175	0.00500	0.200	0	87.3	80	120	3.27	15	
Thallium	0.188	0.00150	0.200	0	94.0	80	120	2.52	15	

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_151109A**

Sample ID <b>ICV1-151109</b>	Batch ID: <b>R82588</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 12:27:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.100	0.00250	0.100	0	100	90	110			
Arsenic	0.0973	0.00500	0.100	0	97.3	90	110			
Barium	0.0998	0.0100	0.100	0	99.8	90	110			
Beryllium	0.105	0.00100	0.100	0	105	90	110			
Boron	0.0945	0.0300	0.100	0	94.5	90	110			
Cadmium	0.0970	0.00100	0.100	0	97.0	90	110			
Calcium	2.34	0.300	2.50	0	93.5	90	110			
Chromium	0.106	0.00500	0.100	0	106	90	110			
Cobalt	0.108	0.00500	0.100	0	108	90	110			
Lead	0.103	0.00100	0.100	0	103	90	110			
Lithium	0.0997	0.0100	0.100	0	99.7	90	110			
Molybdenum	0.0926	0.00500	0.100	0	92.6	90	110			
Selenium	0.0940	0.00500	0.100	0	94.0	90	110			
Thallium	0.101	0.00150	0.100	0	101	90	110			

Sample ID <b>ILCVL-151109</b>	Batch ID: <b>R82588</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 12:39:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00189	0.00250	0.00200	0	94.4	70	130			
Arsenic	0.00477	0.00500	0.00500	0	95.3	70	130			
Barium	0.00497	0.0100	0.00500	0	99.5	70	130			
Beryllium	0.00110	0.00100	0.00100	0	110	70	130			
Boron	0.0197	0.0300	0.0200	0	98.4	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			
Chromium	0.00505	0.00500	0.00500	0	101	70	130			
Cobalt	0.00525	0.00500	0.00500	0	105	70	130			
Lead	0.00108	0.00100	0.00100	0	108	70	130			
Lithium	0.0101	0.0100	0.0100	0	101	70	130			
Molybdenum	0.00482	0.00500	0.00500	0	96.3	70	130			
Selenium	0.00513	0.00500	0.00500	0	103	70	130			
Thallium	0.00106	0.00150	0.00100	0	106	70	130			

Sample ID <b>CCV1-151109</b>	Batch ID: <b>R82588</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 3:35:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.201	0.00250	0.200	0	100	90	110			
Arsenic	0.192	0.00500	0.200	0	95.8	90	110			
Barium	0.194	0.0100	0.200	0	97.2	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_151109A**

Sample ID <b>CCV1-151109</b>	Batch ID: <b>R82588</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 3:35:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.205	0.00100	0.200	0	102	90	110			
Boron	0.194	0.0300	0.200	0	97.0	90	110			
Cadmium	0.191	0.00100	0.200	0	95.4	90	110			
Calcium	5.15	0.300	5.00	0	103	90	110			
Chromium	0.194	0.00500	0.200	0	97.0	90	110			
Cobalt	0.202	0.00500	0.200	0	101	90	110			
Lead	0.201	0.00100	0.200	0	101	90	110			
Lithium	0.194	0.0100	0.200	0	96.9	90	110			
Molybdenum	0.187	0.00500	0.200	0	93.6	90	110			
Selenium	0.192	0.00500	0.200	0	96.2	90	110			
Thallium	0.207	0.00150	0.200	0	103	90	110			

Sample ID <b>LCVL1-151109</b>	Batch ID: <b>R82588</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 3:53:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00186	0.00250	0.00200	0	93.1	70	130			
Arsenic	0.00461	0.00500	0.00500	0	92.3	70	130			
Barium	0.00485	0.0100	0.00500	0	97.1	70	130			
Beryllium	0.00102	0.00100	0.00100	0	102	70	130			
Boron	0.0190	0.0300	0.0200	0	95.1	70	130			
Cadmium	0.000956	0.00100	0.00100	0	95.6	70	130			
Calcium	0.113	0.300	0.100	0	113	70	130			
Chromium	0.00470	0.00500	0.00500	0	94.0	70	130			
Cobalt	0.00495	0.00500	0.00500	0	99.0	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.00951	0.0100	0.0100	0	95.1	70	130			
Molybdenum	0.00445	0.00500	0.00500	0	89.0	70	130			
Selenium	0.00483	0.00500	0.00500	0	96.6	70	130			
Thallium	0.00100	0.00150	0.00100	0	100	70	130			

Sample ID <b>CCV2-151109</b>	Batch ID: <b>R82588</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 5:54:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	90	110			
Arsenic	0.200	0.00500	0.200	0	99.8	90	110			
Barium	0.201	0.0100	0.200	0	100	90	110			
Beryllium	0.215	0.00100	0.200	0	108	90	110			
Boron	0.198	0.0300	0.200	0	99.2	90	110			
Cadmium	0.192	0.00100	0.200	0	96.1	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_151109A**

Sample ID: <b>CCV2-151109</b>	Batch ID: <b>R82588</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 5:54:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.200	0.00500	0.200	0	99.8	90	110			
Cobalt	0.210	0.00500	0.200	0	105	90	110			
Lead	0.204	0.00100	0.200	0	102	90	110			
Lithium	0.208	0.0100	0.200	0	104	90	110			
Molybdenum	0.192	0.00500	0.200	0	96.2	90	110			
Selenium	0.200	0.00500	0.200	0	100	90	110			
Thallium	0.212	0.00150	0.200	0	106	90	110			

Sample ID: <b>LCVL2-151109</b>	Batch ID: <b>R82588</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_151109A</b>	Analysis Date: <b>11/9/2015 6:12:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00192	0.00250	0.00200	0	96.0	70	130			
Arsenic	0.00484	0.00500	0.00500	0	96.7	70	130			
Barium	0.00493	0.0100	0.00500	0	98.7	70	130			
Beryllium	0.00103	0.00100	0.00100	0	103	70	130			
Boron	0.0200	0.0300	0.0200	0	100	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Chromium	0.00482	0.00500	0.00500	0	96.4	70	130			
Cobalt	0.00508	0.00500	0.00500	0	102	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.00992	0.0100	0.0100	0	99.2	70	130			
Molybdenum	0.00456	0.00500	0.00500	0	91.2	70	130			
Selenium	0.00499	0.00500	0.00500	0	99.7	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

<b>Qualifiers:</b>	<p><b>B</b> Analyte detected in the associated Method Blank</p> <p><b>J</b> Analyte detected between MDL and RL</p> <p><b>ND</b> Not Detected at the Method Detection Limit</p> <p><b>RL</b> Reporting Limit</p> <p><b>J</b> Analyte detected between SDL and RL</p>	<p><b>DF</b> Dilution Factor</p> <p><b>MDL</b> Method Detection Limit</p> <p><b>R</b> RPD outside accepted control limits</p> <p><b>S</b> Spike Recovery outside control limits</p> <p><b>N</b> Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_151110B**

The QC data in batch 72210 applies to the following samples: 1510304-01A, 1510304-02A, 1510304-03A, 1510304-04A, 1510304-05A, 1510304-06A, 1510304-07A, 1510304-08A, 1510304-09A, 1510304-10A, 1510304-11A, 1510304-12A, 1510304-13A, 1510304-14A, 1510304-15A

Sample ID <b>1510304-01A SD</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 12:16:00 P</b>	Prep Date: <b>11/6/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	26.2	15.0	0	26.3				0.103	10	

Sample ID <b>1510304-01A PDS</b>	Batch ID: <b>72210</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 12:36:00 P</b>	Prep Date: <b>11/6/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	78.6	3.00	50.0	26.3	105	80	120			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_151110B**

Sample ID <b>ICV-151110</b>	Batch ID: <b>R82595</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 10:51:00 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.103	0.0100	0.100	0	103	90	110			
Boron	0.0902	0.0300	0.100	0	90.2	90	110			
Calcium	2.25	0.300	2.50	0	90.0	90	110			

Sample ID <b>LCVL-151110</b>	Batch ID: <b>R82595</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 10:59:00 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00519	0.0100	0.00500	0	104	70	130			
Boron	0.0200	0.0300	0.0200	0	100	70	130			
Calcium	0.0951	0.300	0.100	0	95.1	70	130			

Sample ID <b>CCV2-151110</b>	Batch ID: <b>R82595</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 12:04:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.195	0.0300	0.200	0	97.3	90	110			
Calcium	5.04	0.300	5.00	0	101	90	110			

Sample ID <b>LCVL2-151110</b>	Batch ID: <b>R82595</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 12:09:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0241	0.0300	0.0200	0	120	70	130			
Calcium	0.0999	0.300	0.100	0	99.9	70	130			

Sample ID <b>CCV3-151110</b>	Batch ID: <b>R82595</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 12:38:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.195	0.0100	0.200	0	97.3	90	110			
Boron	0.198	0.0300	0.200	0	98.8	90	110			
Calcium	4.78	0.300	5.00	0	95.6	90	110			

Sample ID <b>LCVL3-151110</b>	Batch ID: <b>R82595</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 12:42:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00515	0.0100	0.00500	0	103	70	130			
Boron	0.0227	0.0300	0.0200	0	113	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_151110B**

Sample ID: <b>CCV4-151110</b>	Batch ID: <b>R82595</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 12:58:00 P</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.194	0.0100	0.200	0	97.1	90	110			
Calcium	4.84	0.300	5.00	0	96.8	90	110			

Sample ID: <b>LCVL4-151110</b>	Batch ID: <b>R82595</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_151110B</b>	Analysis Date: <b>11/10/2015 1:05:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00525	0.0100	0.00500	0	105	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_151103A**

The QC data in batch 72133 applies to the following samples: 1510304-01D, 1510304-02D, 1510304-03D, 1510304-04D, 1510304-05D, 1510304-06D, 1510304-07D, 1510304-08D, 1510304-09D, 1510304-10D

Sample ID <b>MB-72133</b>	Batch ID: <b>72133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC2_151103A</b>	Analysis Date: <b>11/3/2015 9:23:15 AM</b>	Prep Date: <b>11/3/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-72133</b>	Batch ID: <b>72133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC2_151103A</b>	Analysis Date: <b>11/3/2015 9:37:49 AM</b>	Prep Date: <b>11/3/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.1	1.00	10.00	0	101	90	110			
Fluoride	3.69	0.400	4.000	0	92.3	90	110			
Sulfate	30.4	3.00	30.00	0	101	90	110			

Sample ID <b>LCS-D-72133</b>	Batch ID: <b>72133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS-D</b>	Run ID: <b>IC2_151103A</b>	Analysis Date: <b>11/3/2015 9:53:42 AM</b>	Prep Date: <b>11/3/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.3	1.00	10.00	0	103	90	110	1.58	20	
Fluoride	3.84	0.400	4.000	0	95.9	90	110	3.91	20	
Sulfate	30.4	3.00	30.00	0	101	90	110	0.005	20	

Sample ID <b>1510304-10DMS</b>	Batch ID: <b>72133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC2_151103A</b>	Analysis Date: <b>11/3/2015 4:06:30 PM</b>	Prep Date: <b>11/3/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2920	100	2000	837.7	104	90	110			
Fluoride	2060	40.0	2000	0	103	90	110			
Sulfate	2190	300	2000	0	110	90	110			

Sample ID <b>1510304-10DMSD</b>	Batch ID: <b>72133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC2_151103A</b>	Analysis Date: <b>11/3/2015 4:21:05 PM</b>	Prep Date: <b>11/3/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2910	100	2000	837.7	104	90	110	0.138	20	
Fluoride	2090	40.0	2000	0	104	90	110	1.27	20	
Sulfate	2180	300	2000	0	109	90	110	0.437	20	

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_151103A**

Sample ID <b>ICV-151103</b>	Batch ID: <b>R82508</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>IC2_151103A</b>	Analysis Date: <b>11/3/2015 8:51:23 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.6	1.00	25.00	0	98.6	90	110			
Fluoride	10.0	0.400	10.00	0	100	90	110			
Sulfate	76.5	3.00	75.00	0	102	90	110			

Sample ID <b>CCV1-151103</b>	Batch ID: <b>R82508</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_151103A</b>	Analysis Date: <b>11/3/2015 12:38:21 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110			
Fluoride	4.03	0.400	4.000	0	101	90	110			
Sulfate	30.6	3.00	30.00	0	102	90	110			

Sample ID <b>CCV2-151103</b>	Batch ID: <b>R82508</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_151103A</b>	Analysis Date: <b>11/3/2015 4:35:39 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Fluoride	4.05	0.400	4.000	0	101	90	110			
Sulfate	30.6	3.00	30.00	0	102	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_151104A**

The QC data in batch 72159 applies to the following samples: 1510304-11D, 1510304-12D, 1510304-13D, 1510304-14D, 1510304-15D

Sample ID <b>MB-72159</b>	Batch ID: <b>72159</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 9:17:04 AM</b>	Prep Date: <b>11/4/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-72159</b>	Batch ID: <b>72159</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 9:31:39 AM</b>	Prep Date: <b>11/4/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110			
Fluoride	3.71	0.400	4.000	0	92.7	90	110			
Sulfate	30.5	3.00	30.00	0	102	90	110			

Sample ID <b>LCSD-72159</b>	Batch ID: <b>72159</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 9:46:13 AM</b>	Prep Date: <b>11/4/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110	1.42	20	
Fluoride	3.85	0.400	4.000	0	96.2	90	110	3.75	20	
Sulfate	30.7	3.00	30.00	0	102	90	110	0.663	20	

Sample ID <b>1511044-02DMS</b>	Batch ID: <b>72159</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 12:21:02 PM</b>	Prep Date: <b>11/4/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	28.7	1.00	20.00	8.411	101	90	110			
Fluoride	20.4	0.400	20.00	0	102	90	110			
Sulfate	30.7	3.00	20.00	8.832	109	90	110			

Sample ID <b>1511044-02DMSD</b>	Batch ID: <b>72159</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 12:35:37 PM</b>	Prep Date: <b>11/4/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	28.9	1.00	20.00	8.411	102	90	110	0.672	20	
Fluoride	20.7	0.400	20.00	0	104	90	110	1.43	20	
Sulfate	30.8	3.00	20.00	8.832	110	90	110	0.203	20	

Sample ID <b>1510304-12DMS</b>	Batch ID: <b>72159</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 3:27:44 PM</b>	Prep Date: <b>11/4/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_151104A**

Sample ID: <b>1510304-12DMS</b>	Batch ID: <b>72159</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 3:27:44 PM</b>	Prep Date: <b>11/4/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2510	100	2000	400.0	105	90	110			
Fluoride	2030	40.0	2000	0	102	90	110			
Sulfate	2150	300	2000	0	107	90	110			

Sample ID: <b>1510304-12DMSD</b>	Batch ID: <b>72159</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 3:42:19 PM</b>	Prep Date: <b>11/4/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2500	100	2000	400.0	105	90	110	0.234	20	
Fluoride	2030	40.0	2000	0	102	90	110	0.068	20	
Sulfate	2150	300	2000	0	107	90	110	0.053	20	

LUMINANT

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_151104A**

Sample ID <b>ICV-151104</b>	Batch ID: <b>R82512</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 8:37:58 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.7	1.00	25.00	0	98.7	90	110			
Fluoride	9.75	0.400	10.00	0	97.5	90	110			
Sulfate	76.4	3.00	75.00	0	102	90	110			

Sample ID <b>CCV1-151104</b>	Batch ID: <b>R82512</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 12:50:11 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110			
Fluoride	4.00	0.400	4.000	0	100	90	110			
Sulfate	30.3	3.00	30.00	0	101	90	110			

Sample ID <b>CCV2-151104</b>	Batch ID: <b>R82512</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_151104A</b>	Analysis Date: <b>11/4/2015 3:56:53 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Fluoride	4.08	0.400	4.000	0	102	90	110			
Sulfate	30.6	3.00	30.00	0	102	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_151030A**

The QC data in batch 72102 applies to the following samples: 1510304-01D, 1510304-02D, 1510304-03D, 1510304-04D, 1510304-05D, 1510304-06D, 1510304-07D, 1510304-08D, 1510304-09D, 1510304-10D, 1510304-11D, 1510304-12D, 1510304-13D, 1510304-14D, 1510304-15D

Sample ID <b>1510301-01D DUP</b>	Batch ID: <b>72102</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@20.9°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_151030A</b>	Analysis Date: <b>10/30/2015 2:39:00 PM</b>	Prep Date: <b>10/30/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.46	0	0	7.410				0.672	5	

Sample ID <b>1510304-15D DUP</b>	Batch ID: <b>72102</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@18.9°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_151030A</b>	Analysis Date: <b>10/30/2015 3:13:00 PM</b>	Prep Date: <b>10/30/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.33	0	0	6.300				0.475	5	

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_151030A**

Sample ID <b>ICV-151030</b>	Batch ID: <b>R82444</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.7°C</b>
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_151030A</b>	Analysis Date: <b>10/30/2015 2:33:00 PM</b>	Prep Date: <b>10/30/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.96	0	10.00	0	99.6	99	101			

Sample ID <b>CCV1-151030</b>	Batch ID: <b>R82444</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.2°C</b>
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_151030A</b>	Analysis Date: <b>10/30/2015 2:57:00 PM</b>	Prep Date: <b>10/30/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.97	0	7.000	0	99.6	97.1	102.9			

Sample ID <b>CCV2-151030</b>	Batch ID: <b>R82444</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.5°C</b>
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_151030A</b>	Analysis Date: <b>10/30/2015 3:15:00 PM</b>	Prep Date: <b>10/30/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.97	0	7.000	0	99.6	97.1	102.9			

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	DF Dilution Factor
	J Analyte detected between MDL and RL	MDL Method Detection Limit
	ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
	RL Reporting Limit	S Spike Recovery outside control limits
	J Analyte detected between SDL and RL	N Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1510304  
**Project:** Luminant -Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_151102C**

The QC data in batch 72124 applies to the following samples: 1510304-01D, 1510304-02D, 1510304-03D, 1510304-04D, 1510304-05D, 1510304-06D, 1510304-07D, 1510304-08D, 1510304-09D, 1510304-10D, 1510304-11D, 1510304-12D, 1510304-13D, 1510304-14D, 1510304-15D

Sample ID <b>MB-72124</b>	Batch ID: <b>72124</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_151102C</b>	Analysis Date: <b>11/3/2015 8:00:00 AM</b>	Prep Date: <b>11/2/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-72124</b>	Batch ID: <b>72124</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_151102C</b>	Analysis Date: <b>11/3/2015 8:00:00 AM</b>	Prep Date: <b>11/2/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	750	10.0	745.6	0	101	90	113			

Sample ID <b>1510304-08D-DUP</b>	Batch ID: <b>72124</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_151102C</b>	Analysis Date: <b>11/3/2015 8:00:00 AM</b>	Prep Date: <b>11/2/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	1990	50.0	0	2050				3.22	5	

Sample ID <b>1510304-10D-DUP</b>	Batch ID: <b>72124</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_151102C</b>	Analysis Date: <b>11/3/2015 8:00:00 AM</b>	Prep Date: <b>11/2/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	2350	50.0	0	2360				0.425	5	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



December 03, 2015

Mr. John DuPont  
DHL Analytical  
2300 Double Creek Drive  
Round Rock, Texas 78664

Re: Routine Analysis  
Work Order: 384909  
SDG: 1510304

Dear Mr. DuPont:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 05, 2015. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4707.

Sincerely,

Anna Day  
Project Manager

Purchase Order: 13986  
Enclosures



## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

### Certificate of Analysis Report for

DHLA002 DHL Analytical

Client SDG: 1510304 GEL Work Order: 384909

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Anna Day.

Reviewed by \_\_\_\_\_

*Anna C Day*

There are no "Data Exception Reports" associated with this analytical report.

LUMINANT

DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

384909

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222 FAX: (512) 388-8229  
 Work Order: 1510304

**Subcontractor:**

GEL Laboratories  
 PO Box 30712  
 Charleston, SC 29417

TEL: (843) 556-8171  
 FAX:  
 Acct #:

05-Nov-15

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E903.1	E904.0				
BAP-60	Aqueous	-01B	10/27/15 01:15 PM	500HDPEHNO3		1				
BAP-60	Aqueous	-01C	10/27/15 01:15 PM	500HDPEHNO3	1					
BAP-61	Aqueous	-02B	10/27/15 02:10 PM	500HDPEHNO3		1				
BAP-61	Aqueous	-02C	10/27/15 02:10 PM	500HDPEHNO3	1					
BAP-62	Aqueous	-03B	10/27/15 03:10 PM	500HDPEHNO3		1				
BAP-62	Aqueous	-03C	10/27/15 03:10 PM	500HDPEHNO3	1					
BAP-59	Aqueous	-04B	10/27/15 04:05 PM	500HDPEHNO3		1				
BAP-59	Aqueous	-04C	10/27/15 04:05 PM	500HDPEHNO3	1					
BAP-63	Aqueous	-05B	10/27/15 05:05 PM	500HDPEHNO3		1				
BAP-63	Aqueous	-05C	10/27/15 05:05 PM	500HDPEHNO3	1					
BAP-57	Aqueous	-06B	10/28/15 08:20 AM	500HDPEHNO3		1				
BAP-57	Aqueous	-06C	10/28/15 08:20 AM	500HDPEHNO3	1					
BAP-58	Aqueous	-07B	10/28/15 09:15 AM	500HDPEHNO3		1				
BAP-58	Aqueous	-07C	10/28/15 09:15 AM	500HDPEHNO3	1					
AMW-21	Aqueous	-08B	10/28/15 10:15 AM	500HDPEHNO3		1				
AMW-21	Aqueous	-08C	10/28/15 10:15 AM	500HDPEHNO3	1					
AMW-13	Aqueous	-09B	10/28/15 11:05 AM	500HDPEHNO3		1				
AMW-13	Aqueous	-09C	10/28/15 11:05 AM	500HDPEHNO3	1					

**General Comments:**

Please analyze these samples with a Standard Turnaround Time.  
 Call John DuPont if you have questions.  
 Quality Control Package Needed: Standard / \_\_\_\_\_  
 EMAIL report to both cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: <u>[Signature]</u>	Date/Time: <u>11/2/15 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>11/2/15 1730</u>
Relinquished by: _____	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>11/5/15 0920</u>

**DHL Analytical, Inc.**

2300 Double Creek Drive  
Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1510304

**CHAIN-OF-CUSTODY RECORD**

**Subcontractor:**

GEL Laboratories  
PO Box 30712  
Charleston, SC 29417

TEL: (843) 556-8171  
FAX:  
Acct #:

05-Nov-15

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests				
					E903.1	E904.0			
AMW-14	Aqueous	-10B	10/28/15 11:55 AM	500HDPEHNO3		1			
AMW-14	Aqueous	-10C	10/28/15 11:55 AM	500HDPEHNO3	1				
AMW-23	Aqueous	-11B	10/28/15 12:55 PM	500HDPEHNO3		1			
AMW-23	Aqueous	-11C	10/28/15 12:55 PM	500HDPEHNO3	1				
AMW-22	Aqueous	-12B	10/28/15 01:50 PM	500HDPEHNO3		1			
AMW-22	Aqueous	-12C	10/28/15 01:50 PM	500HDPEHNO3	1				
AMW-20	Aqueous	-13B	10/28/15 02:55 PM	500HDPEHNO3		1			
AMW-20	Aqueous	-13C	10/28/15 02:55 PM	500HDPEHNO3	1				
FMW-4R	Aqueous	-14B	10/28/15 04:00 PM	500HDPEHNO3		1			
FMW-4R	Aqueous	-14C	10/28/15 04:00 PM	500HDPEHNO3	1				
AMW-10	Aqueous	-15B	10/28/15 05:00 PM	500HDPEHNO3		1			
AMW-10	Aqueous	-15C	10/28/15 05:00 PM	500HDPEHNO3	1				

**General Comments:**

Please analyze these samples with a Standard Turnaround Time.  
Call John DuPont if you have questions.  
Quality Control Package Needed: Standard / \_\_\_\_\_  
EMAIL report to both cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: <u>[Signature]</u>	Date/Time: <u>11/02/15 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>11/02/15 1730</u>
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____

**SAMPLE RECEIPT & REVIEW FORM**

Client: <b>DHLA</b>	SDG/AR/COC/Work Order: <b>384909</b>
Received By: <b>Brielle Luthman</b>	Date Received: <b>11/5/15 0920</b>
Suspected Hazard Information	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <b>4</b>
Classified Radioactive II or III by RSO?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Package, COC, and/or Samples marked as beryllium or asbestos containing?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: Ice bags Blue ice Dry ice <u>None</u> Other (describe) *all temperatures are recorded in Celsius <b>20°</b>
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): <b>150340071</b>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 Do Low Level Perchlorate samples have headspace as required?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
7 VOA vials contain acid preservation?	<input checked="" type="checkbox"/>			(If unknown, select No)
8 VOA vials free of headspace (defined as < 6mm bubble)?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
9 Are Encore containers present?	<input checked="" type="checkbox"/>			(If yes, immediately deliver to Volatiles laboratory)
10 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
11 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected: <b>Client emailed 3rd chain.</b>
12 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
13 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
14 Are sample containers identifiable as GEL provided?	<input checked="" type="checkbox"/>			
15 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
16 Carrier and tracking number.				Circle Applicable: FedEx Air <u>FedEx Ground</u> UPS Field Services Courier Other <b>7748 7750 1368</b> <b>7748 7751 0226</b>

Comments (Use Continuation Form if needed):

**List of current GEL Certifications as of 03 December 2015**

<b>State</b>	<b>Certification</b>
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California	2940 Interim
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA150001
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122016-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania NELAP	68-00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-15-10
Utah NELAP	SC000122015-19
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-60	Project: DHLA00112
Sample ID: 384909001	Client ID: DHLA002
Matrix: Water	
Collect Date: 27-OCT-15 13:15	
Receive Date: 05-NOV-15	
Collector: Client	

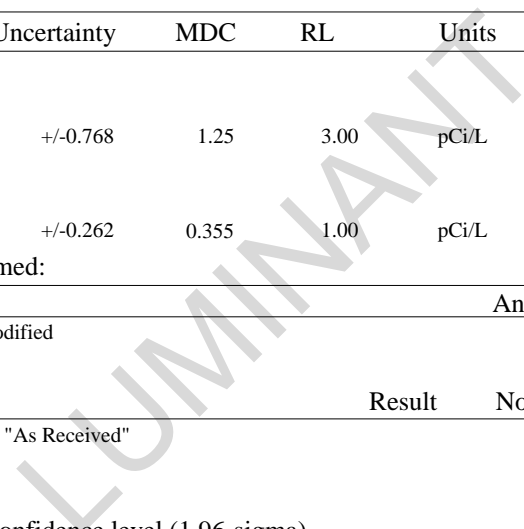
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.810	+/-0.768	1.25	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.462	+/-0.262	0.355	1.00	pCi/L		CXP3	12/02/15	0715	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			94.3	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-61	Project: DHLA00112
Sample ID: 384909002	Client ID: DHLA002
Matrix: Water	
Collect Date: 27-OCT-15 14:10	
Receive Date: 05-NOV-15	
Collector: Client	

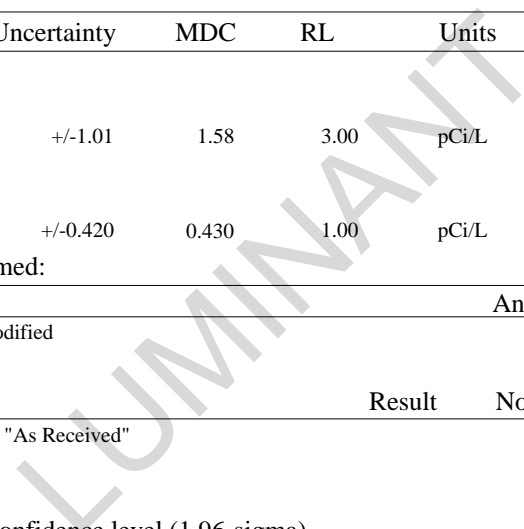
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.39	+/-1.01	1.58	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.30	+/-0.420	0.430	1.00	pCi/L		CXP3	12/02/15	0715	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			87.9	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-62	Project: DHLA00112
Sample ID: 384909003	Client ID: DHLA002
Matrix: Water	
Collect Date: 27-OCT-15 15:10	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.11	+/-1.02	1.67	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.314	+/-0.172	0.188	1.00	pCi/L		CXP3	12/02/15	0715	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			93.6	(15%-125%)

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-59	Project: DHLA00112
Sample ID: 384909004	Client ID: DHLA002
Matrix: Water	
Collect Date: 27-OCT-15 16:05	
Receive Date: 05-NOV-15	
Collector: Client	

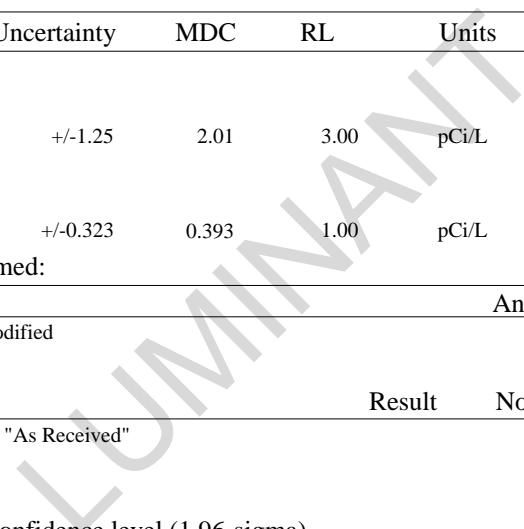
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.60	+/-1.25	2.01	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.729	+/-0.323	0.393	1.00	pCi/L		CXP3	12/02/15	0715	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			92.8	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-63	Project: DHLA00112
Sample ID: 384909005	Client ID: DHLA002
Matrix: Water	
Collect Date: 27-OCT-15 17:05	
Receive Date: 05-NOV-15	
Collector: Client	

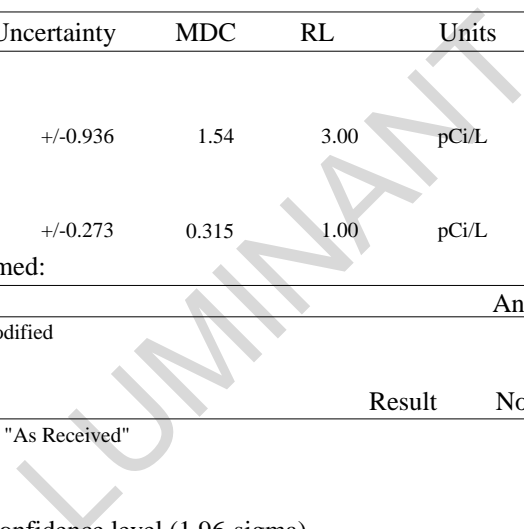
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.972	+/-0.936	1.54	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.682	+/-0.273	0.315	1.00	pCi/L		CXP3	12/02/15	0715	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			90.3	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-57	Project: DHLA00112
Sample ID: 384909006	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 08:20	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.816	+/-0.947	1.59	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.789	+/-0.304	0.345	1.00	pCi/L		CXP3	12/02/15	0750	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			86.9	(15%-125%)

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-58	Project: DHLA00112
Sample ID: 384909007	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 09:15	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.02	+/-1.02	1.69	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.435	+/-0.226	0.268	1.00	pCi/L		CXP3	12/02/15	0750	1521627	2

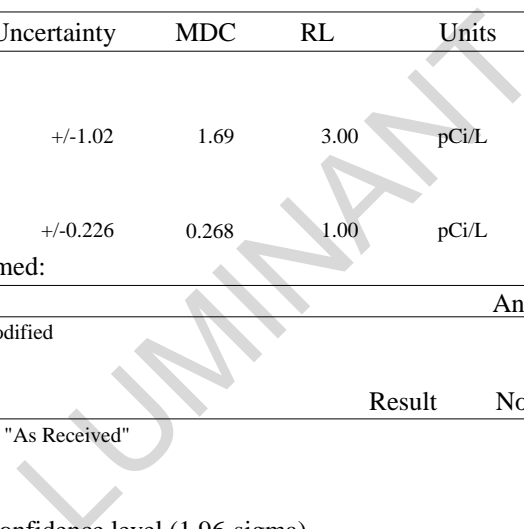
The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			89.5	(15%-125%)

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-21	Project: DHLA00112
Sample ID: 384909008	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 10:15	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		3.27	+/-1.27	1.52	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		3.17	+/-0.588	0.407	1.00	pCi/L		CXP3	12/02/15	0750	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			90	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-13	Project: DHLA00112
Sample ID: 384909009	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 11:05	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		2.48	+/-1.12	1.49	3.00	pCi/L		AXM6	12/01/15	1413	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.607	+/-0.275	0.338	1.00	pCi/L		CXP3	12/02/15	0750	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			87.6	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-14	Project: DHLA00112
Sample ID: 384909010	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 11:55	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.263	+/-0.851	1.54	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.797	+/-0.302	0.339	1.00	pCi/L		CXP3	12/02/15	0750	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			92.9	(15%-125%)

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-23	Project: DHLA00112
Sample ID: 384909011	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 12:55	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		2.36	+/-0.991	1.31	3.00	pCi/L		AXM6	12/01/15	1237	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226	U	0.244	+/-0.226	0.358	1.00	pCi/L		CXP3	12/02/15	0835	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			88.6	(15%-125%)

### Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-22	Project: DHLA00112
Sample ID: 384909012	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 13:50	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liquid "As Received"											
Radium-228		2.45	+/-0.964	1.21	3.00	pCi/L		AXM6	12/01/15	1237 1525004	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		0.909	+/-0.357	0.408	1.00	pCi/L		CXP3	12/02/15	0835 1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			91	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-20	Project: DHLA00112
Sample ID: 384909013	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 14:55	
Receive Date: 05-NOV-15	
Collector: Client	

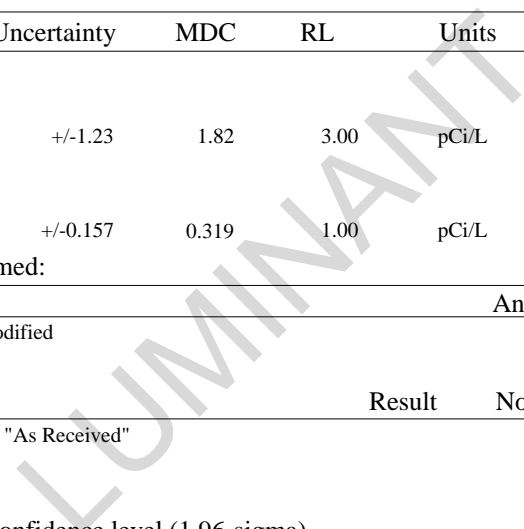
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		2.57	+/-1.23	1.82	3.00	pCi/L		AXM6	12/01/15	1237	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226	U	0.0222	+/-0.157	0.319	1.00	pCi/L		CXP3	12/02/15	0835	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			98.5	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: FMW-4R	Project: DHLA00112
Sample ID: 384909014	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 16:00	
Receive Date: 05-NOV-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liquid "As Received"											
Radium-228	U	0.670	+/-1.06	1.83	3.00	pCi/L		AXM6	12/01/15	1237 1525004	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		1.02	+/-0.351	0.373	1.00	pCi/L		CXP3	12/02/15	0835 1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			92.6	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: December 3, 2015

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-10	Project: DHLA00112
Sample ID: 384909015	Client ID: DHLA002
Matrix: Water	
Collect Date: 28-OCT-15 17:00	
Receive Date: 05-NOV-15	
Collector: Client	

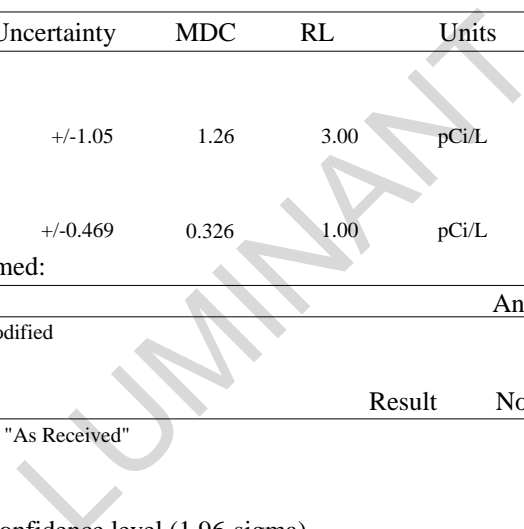
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		3.44	+/-1.05	1.26	3.00	pCi/L		AXM6	12/03/15	1025	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		2.52	+/-0.469	0.326	1.00	pCi/L		CXP3	12/02/15	0835	1521627	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			105	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: December 3, 2015

Page 1 of 2

**DHL Analytical**  
**2300 Double Creek Drive**  
**Round Rock, Texas**

**Contact: Mr. John DuPont**

**Workorder: 384909**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	1525004										
QC1203437787	384909008	DUP									
Radium-228			3.27	2.74	pCi/L	17.7		(0% - 100%)	AXM6	12/01/15	12:37
			Uncertainty +/-1.27	+/-1.24							
QC1203437788	LCS										
Radium-228			29.2	28.8	pCi/L		98.6	(75%-125%)		12/01/15	12:37
			Uncertainty	+/-2.49							
QC1203437786	MB										
Radium-228			U	-1.35	pCi/L					12/01/15	12:37
			Uncertainty	+/-0.883							
<b>Rad Ra-226</b>											
Batch	1521627										
QC1203429141	385256001	DUP									
Radium-226			U	0.424	U	0.414	pCi/L	N/A	N/A	CXP3	12/02/15 09:15
			Uncertainty +/-0.294	+/-0.287							
QC1203429143	LCS										
Radium-226			24.4	21.8	pCi/L		89.2	(75%-125%)		12/02/15	10:00
			Uncertainty	+/-1.30							
QC1203429140	MB										
Radium-226			U	-0.0215	pCi/L					12/02/15	09:15
			Uncertainty	+/-0.163							
QC1203429142	385256001	MS									
Radium-226			122	U	0.424	135	pCi/L	110	(75%-125%)		12/02/15 09:15
			Uncertainty +/-0.294	+/-7.54							

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N/A RPD or %Recovery limits do not apply.



# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 384909

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
N1											
ND											
NJ											
Q											
R											
U											
UI											
UJ											
UL											
X											
Y											
^											
h											

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

\* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.



January 21, 2016

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant - Big Brown

Order No.: 1512237

Dear Will Vienne:

DHL Analytical, Inc. received 10 sample(s) on 12/17/2015 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read 'John DuPont', written over a large, light grey watermark that says 'LUMINANT' diagonally across the page.

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-15-15



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<b>Analytical Report 1512237</b> .....	<b>15</b>
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LUMINANT



2300 Double Creek Dr. ■ Round Rock, TX 78664  
 Phone (512) 388-8222 ■ FAX (512) 388-8229  
 Web: [www.dhlanalytical.com](http://www.dhlanalytical.com)  
 E-Mail: [login@dhlanalytical.com](mailto:login@dhlanalytical.com)



No 69469  
**CHAIN-OF-CUSTODY**

CLIENT: PBW  
 ADDRESS: 2201 DOUBLE CREEK DR ROUND ROCK, TX 78664  
 PHONE: 512-671-3434 FAX/E-MAIL: 512-671-3446  
 DATA REPORTED TO: WILL VIENNE  
 ADDITIONAL REPORT COPIES TO: \_\_\_\_\_

DATE: 12-16-15 PAGE 1 OF 1  
 PO #: 5164-A DHL WORK ORDER #: 1512237  
 PROJECT LOCATION OR NAME: LUMINANT-BIG BROWN  
 CLIENT PROJECT #: 5164-A COLLECTOR: J. BRAYTON

Authorize 5% surcharge for TRRP Report? <input type="checkbox"/> Yes <input type="checkbox"/> No	S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT	P=PAINT SL=SLUDGE O=OTHER SO=SOLID	PRESERVATION		ANALYSES BTEX <input type="checkbox"/> MTBE <input type="checkbox"/> IMETHOD 8021 <input type="checkbox"/> TPH 1005 <input type="checkbox"/> TPH 1006 <input type="checkbox"/> HOLD 1006 <input type="checkbox"/> GRO IMETHOD 8015 <input type="checkbox"/> DRO IMETHOD 8105 <input type="checkbox"/> VOC 8260 <input type="checkbox"/> VOC 624 <input type="checkbox"/> VOC 8260/5035 <input type="checkbox"/> SVOC 8270 <input type="checkbox"/> PAH 8270 <input type="checkbox"/> HOLD PAH <input type="checkbox"/> SVOC 623 <input type="checkbox"/> 8270 PEST <input type="checkbox"/> 625 PEST <input type="checkbox"/> 8082 PCB <input type="checkbox"/> 808 PCB <input type="checkbox"/> 8270 O-P PEST <input type="checkbox"/> T PHOS <input type="checkbox"/> AMMONIA <input type="checkbox"/> 821 HERB <input type="checkbox"/> METALS 6020 <input type="checkbox"/> METALS 2008 <input type="checkbox"/> DISS. METALS <input type="checkbox"/> PH <input type="checkbox"/> HEX CHROM <input type="checkbox"/> ALKALINITY <input type="checkbox"/> COD <input type="checkbox"/> TCLP-SVOC <input type="checkbox"/> ANIONS <input type="checkbox"/> TCLP-METALS <input type="checkbox"/> VOC <input type="checkbox"/> PEST <input type="checkbox"/> HERB <input type="checkbox"/> RCL FLASHPOINT <input type="checkbox"/> RCRA 8 <input type="checkbox"/> TX-11 <input type="checkbox"/> Pb <input type="checkbox"/> TDS <input type="checkbox"/> TSS <input type="checkbox"/> % MOISTURE <input type="checkbox"/> CYANIDE <input type="checkbox"/> <b>SEE ATTACHED</b>							
Field Sample I.D.	DHL Lab #	Date	Time	Matrix		Container Type	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	ICE

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub>	NaOH	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
BAP-62	01	12-15-15	1610	W	P	4								X
BAP-63	02		1700	W	P	4								X
BAP-59	03		1750	W	P	4								X
BAP-61	04		1840	W	P	4								X
BAP-60	05	12-16-15	0745	W	P	4								X
AMW-13	06		0855	W	P	4								X
AMW-21	07		1000	W	P	4								X
FMW-4R	08		1105	W	P	4								X
BAP-57	09		1250	W	P	4								X
BAP-58	10		1345	W	P	4								X

RELINQUISHED BY: (Signature) <u>J. Brayton</u>	DATE/TIME <u>12-16-15 1830</u>	RECEIVED BY: (Signature) <u>J. Brayton</u>	<b>TURN AROUND TIME</b> RUSH <input type="checkbox"/> CALL FIRST 1 DAY <input type="checkbox"/> CALL FIRST 2 DAY <input type="checkbox"/> NORMAL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>	<b>LABORATORY USE ONLY:</b> RECEIVING TEMP: <u>25.3.7</u> THERM #: <u>78</u> CUSTODY SEALS: <input type="checkbox"/> BROKEN <input type="checkbox"/> INTACT <input checked="" type="checkbox"/> NOT USED CARRIER: <input type="checkbox"/> LONE STAR <input checked="" type="checkbox"/> FEDEX <input type="checkbox"/> UPS <input type="checkbox"/> OTHER <input type="checkbox"/> COURIER DELIVERY <input type="checkbox"/> HAND DELIVERED
RELINQUISHED BY: (Signature) <u>J. Brayton</u>	DATE/TIME <u>12/16/15 1000</u>	RECEIVED BY: (Signature) <u>J. Brayton</u>		
RELINQUISHED BY: (Signature) _____	DATE/TIME _____	RECEIVED BY: (Signature) _____		

**John Dupont**

---

**From:** Sara Taube [Sara.Taube@pbwllc.com]  
**Sent:** Wednesday, July 22, 2015 12:05 PM  
**To:** John Dupont  
**Subject:** CCR Appendix III and IV  
**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi John,

Here are the Appendix III and Appendix IV constituents that we will need to have analyzed under the CCR Rule.

**Appendix III**

Boron  
Calcium  
Chloride  
Fluoride  
pH  
sulfate  
TDS

**Appendix IV**

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Fluoride  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Radium 226 and 228

We are looking to have approximately 74 wells sampled 8 times over the course of the next two years. Please let me know if there is any more information you might need.

Cheers,

Sara

10/26/2015

**FedEx** Express *Package* *US Airbill*

FedEx Tracking Number **8088 4997 8394**

Form ID No. **0200**

**1 From**  
Date **12-16-15**

Sender's Name **J. BRANTON** Phone **512 671 3434**

Company **PBW**

Address **2301 DOUBLE CREEK DR**

City **Round Rock** State **TX** ZIP **78664**

**2 Your Internal Billing Reference** **S164-C**

**3 To**  
Recipient's Name \_\_\_\_\_ Phone **512 388-8222**

Company **DAL ANALYTICAL**

Address **2300 DOUBLE CREEK DR**

We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room \_\_\_\_\_

Address \_\_\_\_\_  
Use this line for the HOLD location address or for continuation of your shipping address.

City **Round Rock** State **TX** ZIP **78664**

**Hold Weekday**  
FedEx location address REQUIRED. NOT available for FedEx First Overnight.  
 **Hold Saturday**  
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

**4 Express Package Service** \*To most locations. **Packages up to 150 lbs.**  
For packages over 150 lbs., use the FedEx Express Freight US Airbill.

Next Business Day	2 or 3 Business Days
<input type="checkbox"/> <b>FedEx First Overnight</b> Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless Saturday Delivery is selected.	<input type="checkbox"/> <b>FedEx 2Day A.M.</b> Second business morning.* Saturday Delivery NOT available.
<input checked="" type="checkbox"/> <b>FedEx Priority Overnight</b> Next business morning.* Friday shipments will be delivered on Monday unless Saturday Delivery is selected.	<input type="checkbox"/> <b>FedEx 2Day</b> Second business afternoon.* Thursday shipments will be delivered on Monday unless Saturday Delivery is selected.
<input type="checkbox"/> <b>FedEx Standard Overnight</b> Next business afternoon.* Saturday Delivery NOT available.	<input type="checkbox"/> <b>FedEx Express Saver</b> Third business day.* Saturday Delivery NOT available.

**5 Packaging** \*Declared value limit \$500.  
 FedEx Envelope\*  FedEx Pak\*  FedEx Box  FedEx Tube  Other

**6 Special Handling and Delivery Signature Options** Fees may apply. See the FedEx Service Guide.

**Saturday Delivery**  
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.  
 **No Signature Required**  
Package may be left without obtaining a signature for delivery.  **Direct Signature**  
Someone at recipient's address may sign for delivery.  **Indirect Signature**  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only.

**Does this shipment contain dangerous goods?**  
One box must be checked.  
 No  Yes As per attached Shipper's Declaration.  Yes Shipper's Declaration not required.  
Restrictions apply for dangerous goods—see the current FedEx Service Guide.  
 **Dry Ice**  
Dry Ice, 5, UN 1845 \_\_\_\_\_ x \_\_\_\_\_ kg  
 **Cargo Aircraft Only**

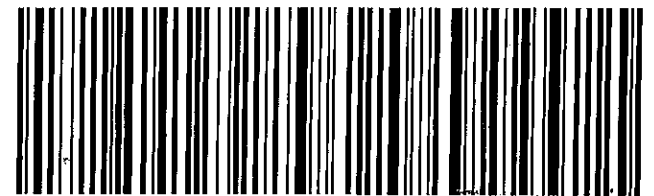


2 of 5  
MPS# **0260 8765 8621 5195**  
Mstr# **8088 4997 8394 0200**

**44 BSMA**

**THU - 17 DEC 10:30A**  
**PRIORITY OVERNIGHT**

**78664**  
TX-US  
**AUS**



FID 5017156 16DEC15 ACTA 539C1/1308/3100

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 12/17/2015

Work Order Number 1512237

Received by JB

Checklist completed by:

*[Signature]*

12/17/2015

Signature

Date

Reviewed by

*[Initials]*

Initials

12/17/2015

Date

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  2.5 °C 3.7
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 8086
- Adjusted? NP Checked by *[Signature]*
- Water - pH>9 (S) or pH>12 (CN) acceptable upon receipt? Yes  No  NA  LOT #
- Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1512237

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

- Method SW6020A - Metals Analysis
- Method SW7470A - Mercury Analysis
- Method E300 - Anions Analysis
- Method M4500-H+ B - pH of a Water Analysis
- Method M2540C - TDS Analysis

Sub-contract - Radium-228 and Radium-226 analyses by methods E904.0/SW8469320 Modified and E903.1 Modified. Analyzed at GEL Laboratory.

LOG IN

The samples were received and log-in performed on 12/17/15. A total of 10 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 1/5/16 Boron was detected below the reporting limit in the method blank (MB-72945). All samples may be biased high for this analyte. No further corrective actions were taken.

For Metals analysis performed on 1/5/16 the matrix spike and matrix spike duplicate recoveries were out of control limits for Boron and/or Calcium. These are flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.



---

---

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1512237

**Work Order Sample Summary**

---

<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
1512237-01	BAP-62		12/15/15 04:10 PM	12/17/2015
1512237-02	BAP-63		12/15/15 05:00 PM	12/17/2015
1512237-03	BAP-59		12/15/15 05:50 PM	12/17/2015
1512237-04	BAP-61		12/15/15 06:40 PM	12/17/2015
1512237-05	BAP-60		12/16/15 07:45 AM	12/17/2015
1512237-06	AMW-13		12/16/15 08:55 AM	12/17/2015
1512237-07	AMW-21		12/16/15 10:00 AM	12/17/2015
1512237-08	FMW-4R		12/16/15 11:05 AM	12/17/2015
1512237-09	BAP-57		12/16/15 12:50 PM	12/17/2015
1512237-10	BAP-58		12/16/15 01:45 PM	12/17/2015

LUMINANT

**Lab Order:** 1512237  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1512237-01A	BAP-62	12/15/15 04:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-62	12/15/15 04:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-62	12/15/15 04:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-62	12/15/15 04:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-01D	BAP-62	12/15/15 04:10 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-62	12/15/15 04:10 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-62	12/15/15 04:10 PM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	BAP-62	12/15/15 04:10 PM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884
1512237-02A	BAP-63	12/15/15 05:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-63	12/15/15 05:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-63	12/15/15 05:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-63	12/15/15 05:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-02D	BAP-63	12/15/15 05:00 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-63	12/15/15 05:00 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-63	12/15/15 05:00 PM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	BAP-63	12/15/15 05:00 PM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884
1512237-03A	BAP-59	12/15/15 05:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-59	12/15/15 05:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-59	12/15/15 05:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-59	12/15/15 05:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-03D	BAP-59	12/15/15 05:50 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-59	12/15/15 05:50 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-59	12/15/15 05:50 PM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	BAP-59	12/15/15 05:50 PM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884
1512237-04A	BAP-61	12/15/15 06:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-61	12/15/15 06:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-61	12/15/15 06:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-61	12/15/15 06:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834

Lab Order: 1512237  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1512237-04D	BAP-61	12/15/15 06:40 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-61	12/15/15 06:40 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-61	12/15/15 06:40 PM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	BAP-61	12/15/15 06:40 PM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884
1512237-05A	BAP-60	12/16/15 07:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-60	12/16/15 07:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-60	12/16/15 07:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-60	12/16/15 07:45 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-05D	BAP-60	12/16/15 07:45 AM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-60	12/16/15 07:45 AM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-60	12/16/15 07:45 AM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	BAP-60	12/16/15 07:45 AM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884
1512237-06A	AMW-13	12/16/15 08:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	AMW-13	12/16/15 08:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	AMW-13	12/16/15 08:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	AMW-13	12/16/15 08:55 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-06D	AMW-13	12/16/15 08:55 AM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	AMW-13	12/16/15 08:55 AM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	AMW-13	12/16/15 08:55 AM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	AMW-13	12/16/15 08:55 AM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884
1512237-07A	AMW-21	12/16/15 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	AMW-21	12/16/15 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	AMW-21	12/16/15 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	AMW-21	12/16/15 10:00 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-07D	AMW-21	12/16/15 10:00 AM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	AMW-21	12/16/15 10:00 AM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	AMW-21	12/16/15 10:00 AM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	AMW-21	12/16/15 10:00 AM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884

**Lab Order:** 1512237  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1512237-08A	FMW-4R	12/16/15 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	FMW-4R	12/16/15 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	FMW-4R	12/16/15 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	FMW-4R	12/16/15 11:05 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-08D	FMW-4R	12/16/15 11:05 AM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	FMW-4R	12/16/15 11:05 AM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	FMW-4R	12/16/15 11:05 AM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	FMW-4R	12/16/15 11:05 AM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884
1512237-09A	BAP-57	12/16/15 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-57	12/16/15 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-57	12/16/15 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-57	12/16/15 12:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-09D	BAP-57	12/16/15 12:50 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-57	12/16/15 12:50 PM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	BAP-57	12/16/15 12:50 PM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884
1512237-10A	BAP-58	12/16/15 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-58	12/16/15 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-58	12/16/15 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/28/15 09:04 AM	72945
	BAP-58	12/16/15 01:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/19/15 10:27 AM	72834
1512237-10D	BAP-58	12/16/15 01:45 PM	Aqueous	E300	Anion Preparation	12/23/15 09:10 AM	72913
	BAP-58	12/16/15 01:45 PM	Aqueous	M4500-H+ B	pH Preparation	12/18/15 08:50 AM	72803
	BAP-58	12/16/15 01:45 PM	Aqueous	M2540C	TDS Preparation	12/21/15 01:00 PM	72884

Lab Order: 1512237  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1512237-01A	BAP-62	Aqueous	SW7470A	Mercury Total: Aqueous	72834	11	12/22/15 11:51 AM	CETAC2_HG_151222 A
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	10	01/04/16 02:41 PM	ICP-MS4_160104E
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:36 PM	ICP-MS4_160105A
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:14 PM	ICP-MS4_160106B
1512237-01D	BAP-62	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 11:00 AM	IC3_151223A
	BAP-62	Aqueous	E300	Anions by IC method - Water	72913	10	12/23/15 04:34 PM	IC3_151223A
	BAP-62	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 02:57 PM	TITRATOR_151218A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-02A	BAP-63	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:02 PM	CETAC2_HG_151222 A
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:18 PM	ICP-MS4_160106B
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	10	01/04/16 02:45 PM	ICP-MS4_160104E
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:40 PM	ICP-MS4_160105A
1512237-02D	BAP-63	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 11:23 AM	IC3_151223A
	BAP-63	Aqueous	E300	Anions by IC method - Water	72913	10	12/23/15 04:57 PM	IC3_151223A
	BAP-63	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:02 PM	TITRATOR_151218A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-03A	BAP-59	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:04 PM	CETAC2_HG_151222 A
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:20 PM	ICP-MS4_160106B
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:42 PM	ICP-MS4_160105A
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	10	01/04/16 02:47 PM	ICP-MS4_160104E
1512237-03D	BAP-59	Aqueous	E300	Anions by IC method - Water	72913	10	12/23/15 05:18 PM	IC3_151223A
	BAP-59	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 11:44 AM	IC3_151223A
	BAP-59	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:04 PM	TITRATOR_151218A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-04A	BAP-61	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:07 PM	CETAC2_HG_151222 A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	10	01/04/16 02:49 PM	ICP-MS4_160104E

Lab Order: 1512237  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1512237-04A	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:44 PM	ICP-MS4_160105A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:22 PM	ICP-MS4_160106B
1512237-04D	BAP-61	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 12:05 PM	IC3_151223A
	BAP-61	Aqueous	E300	Anions by IC method - Water	72913	10	12/23/15 05:39 PM	IC3_151223A
	BAP-61	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:06 PM	TITRATOR_151218A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-05A	BAP-60	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:09 PM	CETAC2_HG_151222 A
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/04/16 03:36 PM	ICP-MS4_160104E
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:46 PM	ICP-MS4_160105A
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:24 PM	ICP-MS4_160106B
1512237-05D	BAP-60	Aqueous	E300	Anions by IC method - Water	72913	10	12/23/15 05:59 PM	IC3_151223A
	BAP-60	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 12:25 PM	IC3_151223A
	BAP-60	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:08 PM	TITRATOR_151218A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-06A	AMW-13	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:11 PM	CETAC2_HG_151222 A
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	5	01/04/16 02:51 PM	ICP-MS4_160104E
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:48 PM	ICP-MS4_160105A
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:26 PM	ICP-MS4_160106B
1512237-06D	AMW-13	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 12:46 PM	IC3_151223A
	AMW-13	Aqueous	E300	Anions by IC method - Water	72913	10	12/23/15 07:01 PM	IC3_151223A
	AMW-13	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:10 PM	TITRATOR_151218A
	AMW-13	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-07A	AMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:13 PM	CETAC2_HG_151222 A
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:50 PM	ICP-MS4_160105A
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:28 PM	ICP-MS4_160106B
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	10	01/04/16 02:53 PM	ICP-MS4_160104E

Lab Order: 1512237  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1512237-07D	AMW-21	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 01:07 PM	IC3_151223A
	AMW-21	Aqueous	E300	Anions by IC method - Water	72913	100	12/23/15 07:22 PM	IC3_151223A
	AMW-21	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:12 PM	TITRATOR_151218A
	AMW-21	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-08A	FMW-4R	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:16 PM	CETAC2_HG_151222 A
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	10	01/04/16 02:55 PM	ICP-MS4_160104E
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:30 PM	ICP-MS4_160106B
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:52 PM	ICP-MS4_160105A
1512237-08D	FMW-4R	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 01:27 PM	IC3_151223A
	FMW-4R	Aqueous	E300	Anions by IC method - Water	72913	10	12/23/15 07:42 PM	IC3_151223A
	FMW-4R	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:13 PM	TITRATOR_151218A
	FMW-4R	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-09A	BAP-57	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:18 PM	CETAC2_HG_151222 A
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:32 PM	ICP-MS4_160106B
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	5	01/04/16 02:57 PM	ICP-MS4_160104E
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:54 PM	ICP-MS4_160105A
1512237-09D	BAP-57	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 01:48 PM	IC3_151223A
	BAP-57	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:15 PM	TITRATOR_151218A
	BAP-57	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A
1512237-10A	BAP-58	Aqueous	SW7470A	Mercury Total: Aqueous	72834	1	12/22/15 12:20 PM	CETAC2_HG_151222 A
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/04/16 03:38 PM	ICP-MS4_160104E
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/05/16 02:56 PM	ICP-MS4_160105A
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72945	1	01/06/16 08:34 PM	ICP-MS4_160106B
1512237-10D	BAP-58	Aqueous	E300	Anions by IC method - Water	72913	1	12/23/15 02:08 PM	IC3_151223A
	BAP-58	Aqueous	M4500-H+ B	pH	72803	1	12/18/15 03:20 PM	TITRATOR_151218A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	72884	1	12/22/15 08:00 AM	WC_151221A

**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** BAP-62  
**Lab ID:** 1512237-01  
**Collection Date:** 12/15/15 04:10 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.000880	0.000880	0.00220		mg/L	11	12/22/15 11:51 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:36 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:36 PM
Barium	0.210	0.00300	0.0100		mg/L	1	01/05/16 02:36 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:36 PM
Boron	3.69	0.100	0.300		mg/L	10	01/04/16 02:41 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:36 PM
Calcium	155	1.00	3.00		mg/L	10	01/04/16 02:41 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:36 PM
Cobalt	0.00356	0.00300	0.00500	J	mg/L	1	01/05/16 02:36 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:36 PM
Lithium	0.0417	0.00500	0.0100		mg/L	1	01/05/16 02:36 PM
Molybdenum	0.00805	0.00200	0.00500		mg/L	1	01/05/16 02:36 PM
Selenium	0.0345	0.00200	0.00500		mg/L	1	01/05/16 02:36 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:14 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	105	3.00	10.0		mg/L	10	12/23/15 04:34 PM
Fluoride	0.356	0.100	0.400	J	mg/L	1	12/23/15 11:00 AM
Sulfate	360	10.0	30.0		mg/L	10	12/23/15 04:34 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	7.23	0	0		pH Units@15.5°C	1	12/18/15 02:57 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	1040	10.0	10.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** BAP-63  
**Lab ID:** 1512237-02  
**Collection Date:** 12/15/15 05:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:02 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:40 PM
Arsenic	0.0125	0.00200	0.00500		mg/L	1	01/05/16 02:40 PM
Barium	0.187	0.00300	0.0100		mg/L	1	01/05/16 02:40 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:40 PM
Boron	1.37	0.100	0.300		mg/L	10	01/04/16 02:45 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:40 PM
Calcium	63.0	1.00	3.00		mg/L	10	01/04/16 02:45 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:40 PM
Cobalt	0.00786	0.00300	0.00500		mg/L	1	01/05/16 02:40 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:40 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	01/05/16 02:40 PM
Molybdenum	0.00342	0.00200	0.00500	J	mg/L	1	01/05/16 02:40 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:40 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:18 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	64.5	3.00	10.0		mg/L	10	12/23/15 04:57 PM
Fluoride	0.170	0.100	0.400	J	mg/L	1	12/23/15 11:23 AM
Sulfate	121	1.00	3.00		mg/L	1	12/23/15 11:23 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.85	0	0		pH Units@16°C	1	12/18/15 03:02 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	584	10.0	10.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** BAP-59  
**Lab ID:** 1512237-03  
**Collection Date:** 12/15/15 05:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:04 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:42 PM
Arsenic	0.00696	0.00200	0.00500		mg/L	1	01/05/16 02:42 PM
Barium	0.121	0.00300	0.0100		mg/L	1	01/05/16 02:42 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:42 PM
Boron	2.54	0.100	0.300		mg/L	10	01/04/16 02:47 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:42 PM
Calcium	69.7	1.00	3.00		mg/L	10	01/04/16 02:47 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:42 PM
Cobalt	0.00703	0.00300	0.00500		mg/L	1	01/05/16 02:42 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:42 PM
Lithium	0.00884	0.00500	0.0100	J	mg/L	1	01/05/16 02:42 PM
Molybdenum	0.00280	0.00200	0.00500	J	mg/L	1	01/05/16 02:42 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:42 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:20 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	138	3.00	10.0		mg/L	10	12/23/15 05:18 PM
Fluoride	0.467	0.100	0.400		mg/L	1	12/23/15 11:44 AM
Sulfate	241	10.0	30.0		mg/L	10	12/23/15 05:18 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.95	0	0		pH Units@16.2°C	1	12/18/15 03:04 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	848	10.0	10.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** BAP-61  
**Lab ID:** 1512237-04  
**Collection Date:** 12/15/15 06:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:07 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:44 PM
Arsenic	0.0111	0.00200	0.00500		mg/L	1	01/05/16 02:44 PM
Barium	0.0913	0.00300	0.0100		mg/L	1	01/05/16 02:44 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:44 PM
Boron	0.752	0.0100	0.0300		mg/L	1	01/05/16 02:44 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:44 PM
Calcium	57.0	1.00	3.00		mg/L	10	01/04/16 02:49 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:44 PM
Cobalt	0.00418	0.00300	0.00500	J	mg/L	1	01/05/16 02:44 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:44 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	01/05/16 02:44 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:44 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:44 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:22 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	205	3.00	10.0		mg/L	10	12/23/15 05:39 PM
Fluoride	0.223	0.100	0.400	J	mg/L	1	12/23/15 12:05 PM
Sulfate	84.2	1.00	3.00		mg/L	1	12/23/15 12:05 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.80	0	0		pH Units@16.4°C	1	12/18/15 03:06 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	790	10.0	10.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** BAP-60  
**Lab ID:** 1512237-05  
**Collection Date:** 12/16/15 07:45 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:09 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:46 PM
Arsenic	0.00642	0.00200	0.00500		mg/L	1	01/05/16 02:46 PM
Barium	0.174	0.00300	0.0100		mg/L	1	01/05/16 02:46 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:46 PM
Boron	0.645	0.0100	0.0300		mg/L	1	01/04/16 03:36 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:46 PM
Calcium	21.7	0.100	0.300		mg/L	1	01/05/16 02:46 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:46 PM
Cobalt	0.00391	0.00300	0.00500	J	mg/L	1	01/05/16 02:46 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:46 PM
Lithium	0.00958	0.00500	0.0100	J	mg/L	1	01/05/16 02:46 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:46 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:46 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:24 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	73.7	3.00	10.0		mg/L	10	12/23/15 05:59 PM
Fluoride	0.230	0.100	0.400	J	mg/L	1	12/23/15 12:25 PM
Sulfate	109	1.00	3.00		mg/L	1	12/23/15 12:25 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.59	0	0		pH Units@15.7°C	1	12/18/15 03:08 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	511	10.0	10.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** AMW-13  
**Lab ID:** 1512237-06  
**Collection Date:** 12/16/15 08:55 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:11 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:48 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:48 PM
Barium	0.0952	0.00300	0.0100		mg/L	1	01/05/16 02:48 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:48 PM
Boron	0.0760	0.0100	0.0300		mg/L	1	01/05/16 02:48 PM
Cadmium	0.000672	0.000300	0.00100	J	mg/L	1	01/05/16 02:48 PM
Calcium	41.8	0.500	1.50		mg/L	5	01/04/16 02:51 PM
Chromium	0.0172	0.00200	0.00500		mg/L	1	01/05/16 02:48 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	01/05/16 02:48 PM
Lead	0.000825	0.000300	0.00100	J	mg/L	1	01/05/16 02:48 PM
Lithium	0.0123	0.00500	0.0100		mg/L	1	01/05/16 02:48 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:48 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:48 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:26 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	203	3.00	10.0		mg/L	10	12/23/15 07:01 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/23/15 12:46 PM
Sulfate	84.2	1.00	3.00		mg/L	1	12/23/15 12:46 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.21	0	0		pH Units@16°C	1	12/18/15 03:10 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	569	10.0	10.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** AMW-21  
**Lab ID:** 1512237-07  
**Collection Date:** 12/16/15 10:00 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>ABO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:13 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>RO</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:50 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:50 PM
Barium	1.24	0.00300	0.0100		mg/L	1	01/05/16 02:50 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:50 PM
Boron	0.0724	0.0100	0.0300		mg/L	1	01/05/16 02:50 PM
Cadmium	0.000535	0.000300	0.00100	J	mg/L	1	01/05/16 02:50 PM
Calcium	128	1.00	3.00		mg/L	10	01/04/16 02:53 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:50 PM
Cobalt	0.00747	0.00300	0.00500		mg/L	1	01/05/16 02:50 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:50 PM
Lithium	0.0175	0.00500	0.0100		mg/L	1	01/05/16 02:50 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:50 PM
Selenium	0.130	0.00200	0.00500		mg/L	1	01/05/16 02:50 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:28 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	688	30.0	100		mg/L	100	12/23/15 07:22 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/23/15 01:07 PM
Sulfate	14.1	1.00	3.00		mg/L	1	12/23/15 01:07 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>LM</b>		
pH	6.08	0	0		pH Units@16.3°C	1	12/18/15 03:12 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>BJT</b>		
Total Dissolved Solids (Residue, Filterable)	1870	50.0	50.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** FMW-4R  
**Lab ID:** 1512237-08  
**Collection Date:** 12/16/15 11:05 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:16 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:52 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:52 PM
Barium	0.0236	0.00300	0.0100		mg/L	1	01/05/16 02:52 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:52 PM
Boron	3.88	0.100	0.300		mg/L	10	01/04/16 02:55 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:52 PM
Calcium	52.0	1.00	3.00		mg/L	10	01/04/16 02:55 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:52 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	01/05/16 02:52 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:52 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	01/05/16 02:52 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:52 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:52 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:30 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	92.2	3.00	10.0		mg/L	10	12/23/15 07:42 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/23/15 01:27 PM
Sulfate	225	10.0	30.0		mg/L	10	12/23/15 07:42 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.61	0	0		pH Units@15.9°C	1	12/18/15 03:13 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	607	10.0	10.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** BAP-57  
**Lab ID:** 1512237-09  
**Collection Date:** 12/16/15 12:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:18 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:54 PM
Arsenic	0.00995	0.00200	0.00500		mg/L	1	01/05/16 02:54 PM
Barium	0.257	0.00300	0.0100		mg/L	1	01/05/16 02:54 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:54 PM
Boron	0.253	0.0100	0.0300		mg/L	1	01/05/16 02:54 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:54 PM
Calcium	61.0	0.500	1.50		mg/L	5	01/04/16 02:57 PM
Chromium	0.00634	0.00200	0.00500		mg/L	1	01/05/16 02:54 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	01/05/16 02:54 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:54 PM
Lithium	0.206	0.00500	0.0100		mg/L	1	01/05/16 02:54 PM
Molybdenum	0.0113	0.00200	0.00500		mg/L	1	01/05/16 02:54 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:54 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:32 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	28.6	0.300	1.00		mg/L	1	12/23/15 01:48 PM
Fluoride	0.323	0.100	0.400	J	mg/L	1	12/23/15 01:48 PM
Sulfate	95.7	1.00	3.00		mg/L	1	12/23/15 01:48 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	11.7	0	0		pH Units@16.6°C	1	12/18/15 03:15 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	1070	50.0	50.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 21-Jan-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1512237

**Client Sample ID:** BAP-58  
**Lab ID:** 1512237-10  
**Collection Date:** 12/16/15 01:45 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>ABO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/15 12:20 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/05/16 02:56 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:56 PM
Barium	0.0586	0.00300	0.0100		mg/L	1	01/05/16 02:56 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:56 PM
Boron	0.439	0.0100	0.0300		mg/L	1	01/04/16 03:38 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:56 PM
Calcium	16.4	0.100	0.300		mg/L	1	01/05/16 02:56 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:56 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	01/05/16 02:56 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/05/16 02:56 PM
Lithium	0.0144	0.00500	0.0100		mg/L	1	01/05/16 02:56 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:56 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/05/16 02:56 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/06/16 08:34 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	32.5	0.300	1.00		mg/L	1	12/23/15 02:08 PM
Fluoride	0.542	0.100	0.400		mg/L	1	12/23/15 02:08 PM
Sulfate	89.9	1.00	3.00		mg/L	1	12/23/15 02:08 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>LM</b>			
pH	6.84	0	0		pH Units@16.4°C	1	12/18/15 03:20 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>BJT</b>			
Total Dissolved Solids (Residue, Filterable)	381	10.0	10.0		mg/L	1	12/22/15 08:00 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT: Pastor, Behling & Wheeler

**ANALYTICAL QC SUMMARY REPORT**

Work Order: 1512237

Project: Luminant - Big Brown

RunID: CETAC2\_HG\_151222A

The QC data in batch 72834 applies to the following samples: 1512237-01A, 1512237-02A, 1512237-03A, 1512237-04A, 1512237-05A, 1512237-06A, 1512237-07A, 1512237-08A, 1512237-09A, 1512237-10A

Sample ID	<b>MB-72834</b>	Batch ID:	<b>72834</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MBLK</b>	Run ID:	<b>CETAC2_HG_151222A</b>	Analysis Date:	<b>12/22/2015 11:44:20 A</b>	Prep Date:	<b>12/19/2015</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	<b>LCS-72834</b>	Batch ID:	<b>72834</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCS</b>	Run ID:	<b>CETAC2_HG_151222A</b>	Analysis Date:	<b>12/22/2015 11:46:37 A</b>	Prep Date:	<b>12/19/2015</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00196 0.000200 0.00200 0 98.0 85 115

Sample ID	<b>LCSD-72834</b>	Batch ID:	<b>72834</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCSD</b>	Run ID:	<b>CETAC2_HG_151222A</b>	Analysis Date:	<b>12/22/2015 11:48:53 A</b>	Prep Date:	<b>12/19/2015</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00189 0.000200 0.00200 0 94.5 85 115 3.64 15

Sample ID	<b>1512237-01A SD</b>	Batch ID:	<b>72834</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>SD</b>	Run ID:	<b>CETAC2_HG_151222A</b>	Analysis Date:	<b>12/22/2015 11:53:27 A</b>	Prep Date:	<b>12/19/2015</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.000400 0.00100 0 0 0 0 10

Sample ID	<b>1512237-01A PDS</b>	Batch ID:	<b>72834</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>PDS</b>	Run ID:	<b>CETAC2_HG_151222A</b>	Analysis Date:	<b>12/22/2015 11:55:43 A</b>	Prep Date:	<b>12/19/2015</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00248 0.000200 0.00250 0 99.2 85 115

Sample ID	<b>1512237-01A MS</b>	Batch ID:	<b>72834</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MS</b>	Run ID:	<b>CETAC2_HG_151222A</b>	Analysis Date:	<b>12/22/2015 11:58:00 A</b>	Prep Date:	<b>12/19/2015</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00197 0.000200 0.00200 0 98.5 80 120

Sample ID	<b>1512237-01A MSD</b>	Batch ID:	<b>72834</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MSD</b>	Run ID:	<b>CETAC2_HG_151222A</b>	Analysis Date:	<b>12/22/2015 12:00:17 P</b>	Prep Date:	<b>12/19/2015</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00195 0.000200 0.00200 0 97.5 80 120 1.02 15

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_151222A

Sample ID <b>ICV-151222</b>	Batch ID: <b>R83299</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_151222A</b>	Analysis Date: <b>12/22/2015 10:31:35 A</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00397	0.000200	0.00400	0	99.2	90	110			
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Sample ID <b>CCV2-151222</b>	Batch ID: <b>R83299</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_151222A</b>	Analysis Date: <b>12/22/2015 11:39:45 A</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00183	0.000200	0.00200	0	91.5	90	110			
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Sample ID <b>CCV3-151222</b>	Batch ID: <b>R83299</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_151222A</b>	Analysis Date: <b>12/22/2015 12:23:10 P</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00192	0.000200	0.00200	0	96.0	90	110			
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LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160104E**

The QC data in batch 72945 applies to the following samples: 1512237-01A, 1512237-02A, 1512237-03A, 1512237-04A, 1512237-05A, 1512237-06A, 1512237-07A, 1512237-08A, 1512237-09A, 1512237-10A

Sample ID <b>1512237-01A SD</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 2:43:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	3.83	1.50	0	3.69				3.87	10	
Calcium	153	15.0	0	155				1.20	10	

Sample ID <b>1512237-01A PDS</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 3:04:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	5.44	0.300	2.00	3.69	87.8	80	120			
Calcium	199	3.00	50.0	155	88.1	80	120			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160104E**

Sample ID <b>ICV-160104</b>	Batch ID: <b>R83480</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 10:01:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.102	0.0300	0.100	0	102	90	110			
Calcium	2.37	0.300	2.50	0	94.7	90	110			

Sample ID <b>LCVL-160104</b>	Batch ID: <b>R83480</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 10:05:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0248	0.0300	0.0200	0	124	70	130			
Calcium	0.0945	0.300	0.100	0	94.5	70	130			

Sample ID <b>CCV7-160104</b>	Batch ID: <b>R83480</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 2:27:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.221	0.0300	0.200	0	110	90	110			
Calcium	4.91	0.300	5.00	0	98.3	90	110			

Sample ID <b>LCVL7-160104</b>	Batch ID: <b>R83480</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 2:37:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0238	0.0300	0.0200	0	119	70	130			
Calcium	0.0949	0.300	0.100	0	94.9	70	130			

Sample ID <b>CCV8-160104</b>	Batch ID: <b>R83480</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 3:06:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.221	0.0300	0.200	0	110	90	110			
Calcium	4.94	0.300	5.00	0	98.8	90	110			

Sample ID <b>LCVL8-160104</b>	Batch ID: <b>R83480</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 3:17:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0246	0.0300	0.0200	0	123	70	130			
Calcium	0.0945	0.300	0.100	0	94.5	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160104E**

Sample ID <b>CCV9-160104</b>	Batch ID: <b>R83480</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 3:44:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.209	0.0300	0.200	0	105	90	110			

Sample ID <b>LCVL9-160104</b>	Batch ID: <b>R83480</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160104E</b>	Analysis Date: <b>1/4/2016 3:55:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0191	0.0300	0.0200	0	95.4	70	130			

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160105A**

The QC data in batch 72945 applies to the following samples: 1512237-01A, 1512237-02A, 1512237-03A, 1512237-04A, 1512237-05A, 1512237-06A, 1512237-07A, 1512237-08A, 1512237-09A, 1512237-10A

Sample ID <b>MB-72945</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:28:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Boron	0.0119	0.0300								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								

Sample ID <b>LCS-72945</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:30:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.186	0.00250	0.200	0	93.1	80	120			
Arsenic	0.196	0.00500	0.200	0	98.1	80	120			
Barium	0.193	0.0100	0.200	0	96.5	80	120			
Beryllium	0.193	0.00100	0.200	0	96.5	80	120			
Boron	0.198	0.0300	0.200	0	99.0	80	120			
Cadmium	0.191	0.00100	0.200	0	95.5	80	120			
Calcium	4.64	0.300	5.00	0	92.8	80	120			
Chromium	0.195	0.00500	0.200	0	97.6	80	120			
Cobalt	0.200	0.00500	0.200	0	100	80	120			
Lead	0.189	0.00100	0.200	0	94.7	80	120			
Lithium	0.194	0.0100	0.200	0	97.0	80	120			
Molybdenum	0.186	0.00500	0.200	0	93.0	80	120			
Selenium	0.197	0.00500	0.200	0	98.6	80	120			

Sample ID <b>LCSD-72945</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:32:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.190	0.00250	0.200	0	95.1	80	120	2.14	15	
Arsenic	0.198	0.00500	0.200	0	99.0	80	120	0.868	15	
Barium	0.198	0.0100	0.200	0	98.9	80	120	2.47	15	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160105A**

Sample ID: <b>LCSD-72945</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:32:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.199	0.00100	0.200	0	99.3	80	120	2.85	15	
Boron	0.212	0.0300	0.200	0	106	80	120	6.77	15	
Cadmium	0.197	0.00100	0.200	0	98.3	80	120	2.87	15	
Calcium	4.64	0.300	5.00	0	92.7	80	120	0.117	15	
Chromium	0.198	0.00500	0.200	0	98.9	80	120	1.32	15	
Cobalt	0.204	0.00500	0.200	0	102	80	120	1.77	15	
Lead	0.195	0.00100	0.200	0	97.7	80	120	3.10	15	
Lithium	0.199	0.0100	0.200	0	99.5	80	120	2.47	15	
Molybdenum	0.191	0.00500	0.200	0	95.6	80	120	2.78	15	
Selenium	0.200	0.00500	0.200	0	100	80	120	1.35	15	

Sample ID: <b>1512237-01A SD</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:38:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	<0.0100	0.0250	0	0				0	10	
Barium	0.201	0.0500	0	0.210				3.99	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0.00356				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	0.0416	0.0500	0	0.0417				0.296	10	
Molybdenum	<0.0100	0.0250	0	0.00805				0	10	
Selenium	0.0344	0.0250	0	0.0345				0.462	10	

Sample ID: <b>1512237-01A PDS</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:58:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.172	0.00250	0.200	0	86.0	80	120			
Arsenic	0.204	0.00500	0.200	0	102	80	120			
Barium	0.390	0.0100	0.200	0.210	90.3	80	120			
Beryllium	0.194	0.00100	0.200	0	97.0	80	120			
Cadmium	0.190	0.00100	0.200	0	94.9	80	120			
Chromium	0.197	0.00500	0.200	0	98.4	80	120			
Cobalt	0.203	0.00500	0.200	0.00356	99.8	80	120			
Lead	0.197	0.00100	0.200	0	98.6	80	120			
Lithium	0.227	0.0100	0.200	0.0417	92.5	80	120			
Molybdenum	0.195	0.00500	0.200	0.00805	93.5	80	120			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160105A**

Sample ID <b>1512237-01A PDS</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:58:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.233	0.00500	0.200	0.0345	99.4	80	120			

Sample ID <b>1512237-01A MS</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 3:00:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.191	0.00250	0.200	0	95.7	80	120			
Arsenic	0.202	0.00500	0.200	0	101	80	120			
Barium	0.394	0.0100	0.200	0.210	92.3	80	120			
Beryllium	0.191	0.00100	0.200	0	95.3	80	120			
Boron	3.71	0.0300	0.200	3.61	52.6	80	120			S
Cadmium	0.188	0.00100	0.200	0	94.2	80	120			
Calcium	150	0.300	5.00	151	-28.0	80	120			S
Chromium	0.191	0.00500	0.200	0	95.7	80	120			
Cobalt	0.195	0.00500	0.200	0.00356	96.0	80	120			
Lead	0.190	0.00100	0.200	0	95.2	80	120			
Lithium	0.226	0.0100	0.200	0.0417	92.0	80	120			
Molybdenum	0.196	0.00500	0.200	0.00805	94.2	80	120			
Selenium	0.234	0.00500	0.200	0.0345	99.6	80	120			

Sample ID <b>1512237-01A MSD</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 3:02:00 PM</b>	Prep Date: <b>12/28/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.190	0.00250	0.200	0	94.9	80	120	0.828	15	
Arsenic	0.201	0.00500	0.200	0	101	80	120	0.273	15	
Barium	0.395	0.0100	0.200	0.210	92.6	80	120	0.189	15	
Beryllium	0.193	0.00100	0.200	0	96.5	80	120	1.28	15	
Boron	3.83	0.0300	0.200	3.61	112	80	120	3.15	15	
Cadmium	0.187	0.00100	0.200	0	93.5	80	120	0.715	15	
Calcium	149	0.300	5.00	151	-52.2	80	120	0.806	15	S
Chromium	0.190	0.00500	0.200	0	94.9	80	120	0.844	15	
Cobalt	0.194	0.00500	0.200	0.00356	95.5	80	120	0.512	15	
Lead	0.190	0.00100	0.200	0	94.9	80	120	0.327	15	
Lithium	0.220	0.0100	0.200	0.0417	89.2	80	120	2.43	15	
Molybdenum	0.194	0.00500	0.200	0.00805	93.0	80	120	1.19	15	
Selenium	0.234	0.00500	0.200	0.0345	99.6	80	120	0.021	15	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160105A**

Sample ID <b>ICV-160105</b>	Batch ID: <b>R83481</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 11:22:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0949	0.00250	0.100	0	94.9	90	110			
Arsenic	0.103	0.00500	0.100	0	103	90	110			
Barium	0.100	0.0100	0.100	0	100	90	110			
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Boron	0.104	0.0300	0.100	0	104	90	110			
Cadmium	0.101	0.00100	0.100	0	101	90	110			
Calcium	2.30	0.300	2.50	0	92.1	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.108	0.00500	0.100	0	108	90	110			
Lead	0.102	0.00100	0.100	0	102	90	110			
Lithium	0.0984	0.0100	0.100	0	98.4	90	110			
Molybdenum	0.0966	0.00500	0.100	0	96.6	90	110			
Selenium	0.102	0.00500	0.100	0	102	90	110			

Sample ID <b>LCVL-160105</b>	Batch ID: <b>R83481</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 11:26:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00199	0.00250	0.00200	0	99.4	70	130			
Arsenic	0.00495	0.00500	0.00500	0	99.0	70	130			
Barium	0.00489	0.0100	0.00500	0	97.7	70	130			
Beryllium	0.000790	0.00100	0.00100	0	79.0	70	130			
Boron	0.0197	0.0300	0.0200	0	98.3	70	130			
Cadmium	0.000992	0.00100	0.00100	0	99.2	70	130			
Calcium	0.0944	0.300	0.100	0	94.4	70	130			
Chromium	0.00499	0.00500	0.00500	0	99.8	70	130			
Cobalt	0.00520	0.00500	0.00500	0	104	70	130			
Lead	0.000899	0.00100	0.00100	0	89.9	70	130			
Lithium	0.00999	0.0100	0.0100	0	99.9	70	130			
Molybdenum	0.00492	0.00500	0.00500	0	98.5	70	130			
Selenium	0.00551	0.00500	0.00500	0	110	70	130			

Sample ID <b>CCV3-160105</b>	Batch ID: <b>R83481</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:02:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.195	0.00250	0.200	0	97.4	90	110			
Arsenic	0.206	0.00500	0.200	0	103	90	110			
Barium	0.201	0.0100	0.200	0	101	90	110			
Beryllium	0.200	0.00100	0.200	0	100	90	110			
Boron	0.214	0.0300	0.200	0	107	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160105A**

Sample ID <b>CCV3-160105</b>	Batch ID: <b>R83481</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:02:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.200	0.00100	0.200	0	100	90	110			
Calcium	4.81	0.300	5.00	0	96.2	90	110			
Chromium	0.202	0.00500	0.200	0	101	90	110			
Cobalt	0.209	0.00500	0.200	0	105	90	110			
Lead	0.201	0.00100	0.200	0	101	90	110			
Lithium	0.197	0.0100	0.200	0	98.4	90	110			
Molybdenum	0.195	0.00500	0.200	0	97.7	90	110			
Selenium	0.211	0.00500	0.200	0	105	90	110			

Sample ID <b>LCVL3-160105</b>	Batch ID: <b>R83481</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 2:21:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00185	0.00250	0.00200	0	92.4	70	130			
Arsenic	0.00496	0.00500	0.00500	0	99.2	70	130			
Barium	0.00479	0.0100	0.00500	0	95.8	70	130			
Beryllium	0.00102	0.00100	0.00100	0	102	70	130			
Boron	0.0249	0.0300	0.0200	0	124	70	130			
Cadmium	0.000938	0.00100	0.00100	0	93.8	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Chromium	0.00491	0.00500	0.00500	0	98.2	70	130			
Cobalt	0.00510	0.00500	0.00500	0	102	70	130			
Lead	0.000801	0.00100	0.00100	0	80.1	70	130			
Lithium	0.00960	0.0100	0.0100	0	96.0	70	130			
Molybdenum	0.00455	0.00500	0.00500	0	90.9	70	130			
Selenium	0.00512	0.00500	0.00500	0	102	70	130			

Sample ID <b>CCV4-160105</b>	Batch ID: <b>R83481</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 3:44:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.196	0.00250	0.200	0	98.2	90	110			
Arsenic	0.209	0.00500	0.200	0	105	90	110			
Barium	0.203	0.0100	0.200	0	102	90	110			
Beryllium	0.206	0.00100	0.200	0	103	90	110			
Boron	0.219	0.0300	0.200	0	110	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Calcium	4.76	0.300	5.00	0	95.2	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			
Cobalt	0.211	0.00500	0.200	0	106	90	110			
Lead	0.197	0.00100	0.200	0	98.6	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160105A**

Sample ID: <b>CCV4-160105</b>	Batch ID: <b>R83481</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 3:44:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.204	0.0100	0.200	0	102	90	110			
Molybdenum	0.197	0.00500	0.200	0	98.3	90	110			
Selenium	0.212	0.00500	0.200	0	106	90	110			

Sample ID: <b>LCVL4-160105</b>	Batch ID: <b>R83481</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160105A</b>	Analysis Date: <b>1/5/2016 4:15:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00185	0.00250	0.00200	0	92.4	70	130			
Arsenic	0.00509	0.00500	0.00500	0	102	70	130			
Barium	0.00484	0.0100	0.00500	0	96.8	70	130			
Beryllium	0.00116	0.00100	0.00100	0	116	70	130			
Boron	0.0212	0.0300	0.0200	0	106	70	130			
Cadmium	0.000977	0.00100	0.00100	0	97.7	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			
Chromium	0.00502	0.00500	0.00500	0	100	70	130			
Cobalt	0.00522	0.00500	0.00500	0	104	70	130			
Lead	0.000793	0.00100	0.00100	0	79.3	70	130			
Lithium	0.0104	0.0100	0.0100	0	104	70	130			
Molybdenum	0.00456	0.00500	0.00500	0	91.3	70	130			
Selenium	0.00515	0.00500	0.00500	0	103	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160106B**

The QC data in batch 72945 applies to the following samples: 1512237-01A, 1512237-02A, 1512237-03A, 1512237-04A, 1512237-05A, 1512237-06A, 1512237-07A, 1512237-08A, 1512237-09A, 1512237-10A

Sample ID <b>MB-72945</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:06:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium <0.000500 0.00150

Sample ID <b>LCS-72945</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:08:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium 0.188 0.00150 0.200 0 94.2 80 120

Sample ID <b>LCSD-72945</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:10:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium 0.193 0.00150 0.200 0 96.3 80 120 2.16 15

Sample ID <b>1512237-01A SD</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:16:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium <0.00250 0.00750 0 0 0 0 10

Sample ID <b>1512237-01A PDS</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:36:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium 0.204 0.00150 0.200 0 102 80 120

Sample ID <b>1512237-01A MS</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:38:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium 0.194 0.00150 0.200 0 96.8 80 120

Sample ID <b>1512237-01A MSD</b>	Batch ID: <b>72945</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:40:00 PM</b>	Prep Date: <b>12/28/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium 0.192 0.00150 0.200 0 95.9 80 120 0.887 15

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160106B**

Sample ID <b>ICV2-160106</b>	Batch ID: <b>R83506</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 7:56:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium	0.0956	0.00150	0.100	0	95.6	90	110			
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Sample ID <b>ILCVL2-160106</b>	Batch ID: <b>R83506</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:00:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium	0.000858	0.00150	0.00100	0	85.8	70	130			
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Sample ID <b>CCV1-160106</b>	Batch ID: <b>R83506</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:42:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium	0.199	0.00150	0.200	0	99.6	90	110			
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Sample ID <b>LCVL1-160106</b>	Batch ID: <b>R83506</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160106B</b>	Analysis Date: <b>1/6/2016 8:46:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Thallium	0.000931	0.00150	0.00100	0	93.1	70	130			
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**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC3\_151223A**

The QC data in batch 72913 applies to the following samples: 1512237-01D, 1512237-02D, 1512237-03D, 1512237-04D, 1512237-05D, 1512237-06D, 1512237-07D, 1512237-08D, 1512237-09D, 1512237-10D

Sample ID <b>MB-72913</b>	Batch ID: <b>72913</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>IC3_151223A</b>	Analysis Date: <b>12/23/2015 9:49:23 AM</b>	Prep Date: <b>12/23/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-72913</b>	Batch ID: <b>72913</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>IC3_151223A</b>	Analysis Date: <b>12/23/2015 10:12:53 A</b>	Prep Date: <b>12/23/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.58	1.00	10.00	0	95.8	90	110			
Fluoride	4.19	0.400	4.000	0	105	90	110			
Sulfate	31.6	3.00	30.00	0	105	90	110			

Sample ID <b>LCS-72913</b>	Batch ID: <b>72913</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>IC3_151223A</b>	Analysis Date: <b>12/23/2015 10:33:33 A</b>	Prep Date: <b>12/23/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.56	1.00	10.00	0	95.6	90	110	0.112	20	
Fluoride	4.08	0.400	4.000	0	102	90	110	2.53	20	
Sulfate	31.0	3.00	30.00	0	103	90	110	2.12	20	

Sample ID <b>1512237-05DMS</b>	Batch ID: <b>72913</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>IC3_151223A</b>	Analysis Date: <b>12/23/2015 6:20:20 PM</b>	Prep Date: <b>12/23/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	268	10.0	200.0	73.67	97.4	90	110			
Fluoride	193	4.00	200.0	0	96.7	90	110			
Sulfate	321	30.0	200.0	112.7	104	90	110			

Sample ID <b>1512237-05DMSD</b>	Batch ID: <b>72913</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>IC3_151223A</b>	Analysis Date: <b>12/23/2015 6:41:00 PM</b>	Prep Date: <b>12/23/2015</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	269	10.0	200.0	73.67	97.8	90	110	0.262	20	
Fluoride	195	4.00	200.0	0	97.4	90	110	0.753	20	
Sulfate	328	30.0	200.0	112.7	108	90	110	1.98	20	

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC3\_151223A**

Sample ID <b>ICV-151223</b>	Batch ID: <b>R83340</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC3_151223A</b>	Analysis Date: <b>12/23/2015 8:54:10 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.3	1.00	25.00	0	97.1	90	110			
Fluoride	10.2	0.400	10.00	0	102	90	110			
Sulfate	76.1	3.00	75.00	0	101	90	110			

Sample ID <b>CCV1-151223</b>	Batch ID: <b>R83340</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC3_151223A</b>	Analysis Date: <b>12/23/2015 2:55:24 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.63	1.00	10.00	0	96.3	90	110			
Fluoride	4.00	0.400	4.000	0	99.9	90	110			
Sulfate	30.9	3.00	30.00	0	103	90	110			

Sample ID <b>CCV2-151223</b>	Batch ID: <b>R83340</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC3_151223A</b>	Analysis Date: <b>12/23/2015 8:24:09 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.61	1.00	10.00	0	96.1	90	110			
Fluoride	4.02	0.400	4.000	0	101	90	110			
Sulfate	30.7	3.00	30.00	0	102	90	110			

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_151218A**

The QC data in batch 72803 applies to the following samples: 1512237-01D, 1512237-02D, 1512237-03D, 1512237-04D, 1512237-05D, 1512237-06D, 1512237-07D, 1512237-08D, 1512237-09D, 1512237-10D

Sample ID	<b>1512237-01D DUP</b>	Batch ID:	<b>72803</b>	TestNo:	<b>M4500-H+ B</b>	Units:	<b>pH Units@15.5°C</b>
SampType:	<b>DUP</b>	Run ID:	<b>TITRATOR_151218A</b>	Analysis Date:	<b>12/18/2015 3:00:00 PM</b>	Prep Date:	<b>12/18/2015</b>
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		7.25	0	0	7.230		0.276 5

Sample ID	<b>1512238-10D DUP</b>	Batch ID:	<b>72803</b>	TestNo:	<b>M4500-H+ B</b>	Units:	<b>pH Units@18.8°C</b>
SampType:	<b>DUP</b>	Run ID:	<b>TITRATOR_151218A</b>	Analysis Date:	<b>12/18/2015 3:47:00 PM</b>	Prep Date:	<b>12/18/2015</b>
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		6.54	0	0	6.520		0.306 5

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_151218A**

Sample ID <b>ICV-151218</b>	Batch ID: <b>R83249</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.2°C</b>							
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_151218A</b>	Analysis Date: <b>12/18/2015 2:48:00 PM</b>	Prep Date: <b>12/18/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	9.96	0	10.00	0	99.6	99	101			
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Sample ID <b>CCV1-151218</b>	Batch ID: <b>R83249</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@20.2°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_151218A</b>	Analysis Date: <b>12/18/2015 3:17:00 PM</b>	Prep Date: <b>12/18/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	7.01	0	7.000	0	100	97.1	102.9			
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Sample ID <b>CCV2-151218</b>	Batch ID: <b>R83249</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@19.2°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_151218A</b>	Analysis Date: <b>12/18/2015 3:42:00 PM</b>	Prep Date: <b>12/18/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	6.97	0	7.000	0	99.6	97.1	102.9			
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Sample ID <b>CCV3-151218</b>	Batch ID: <b>R83249</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@19.9°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_151218A</b>	Analysis Date: <b>12/18/2015 3:48:00 PM</b>	Prep Date: <b>12/18/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	6.97	0	7.000	0	99.6	97.1	102.9			
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Sample ID <b>CCV-151218-PH12</b>	Batch ID: <b>R83249</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.4°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_151218A</b>	Analysis Date: <b>12/18/2015 4:48:00 PM</b>	Prep Date: <b>12/18/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	12.0	0	12.00	0	100	97.1	102.9			
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<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1512237  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_151221A**

The QC data in batch 72884 applies to the following samples: 1512237-01D, 1512237-02D, 1512237-03D, 1512237-04D, 1512237-05D, 1512237-06D, 1512237-07D, 1512237-08D, 1512237-09D, 1512237-10D

Sample ID <b>MB-72884</b>	Batch ID: <b>72884</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_151221A</b>	Analysis Date: <b>12/22/2015 8:00:00 AM</b>	Prep Date: <b>12/21/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-72884</b>	Batch ID: <b>72884</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_151221A</b>	Analysis Date: <b>12/22/2015 8:00:00 AM</b>	Prep Date: <b>12/21/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	749	10.0	745.6	0	100	90	113			

Sample ID <b>1512251-01B-DUP</b>	Batch ID: <b>72884</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_151221A</b>	Analysis Date: <b>12/22/2015 8:00:00 AM</b>	Prep Date: <b>12/21/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	340	10.0	0	338.0				0.590	5	

Sample ID <b>1512237-07D-DUP</b>	Batch ID: <b>72884</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_151221A</b>	Analysis Date: <b>12/22/2015 8:00:00 AM</b>	Prep Date: <b>12/21/2015</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	1900	50.0	0	1875				1.32	5	

- |                    |   |   |
|--------------------|---|---|
| <b>Qualifiers:</b> | B Analyte detected in the associated Method Blank | DF Dilution Factor                      |
|                    | J Analyte detected between MDL and RL             | MDL Method Detection Limit              |
|                    | ND Not Detected at the Method Detection Limit     | R RPD outside accepted control limits   |
|                    | RL Reporting Limit                                | S Spike Recovery outside control limits |
|                    | J Analyte detected between SDL and RL             | N Parameter not NELAC certified         |



January 15, 2016

Mr. John DuPont  
DHL Analytical  
2300 Double Creek Drive  
Round Rock, Texas 78664

Re: Routine Analysis  
Work Order: 387923  
SDG: 1512237

Dear Mr. DuPont:

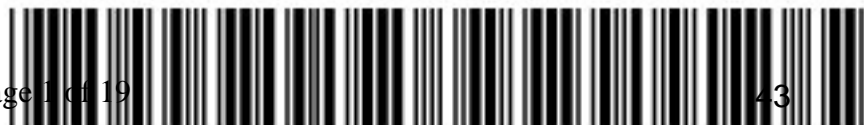
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 22, 2015. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4707.

Sincerely,

Anna Day  
Project Manager

Purchase Order: 14091  
Enclosures



**GEL LABORATORIES LLC**

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

**Certificate of Analysis Report  
for**

DHLA002 DHL Analytical

Client SDG: 1512237 GEL Work Order: 387923

**The Qualifiers in this report are defined as follows:**

- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Anna Day.

LUMINANT

*Anna C Day*

Reviewed by \_\_\_\_\_

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-62	Project: DHLA00112
Sample ID: 387923001	Client ID: DHLA002
Matrix: Water	
Collect Date: 15-DEC-15 16:10	
Receive Date: 22-DEC-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.58	+/-1.06	1.62	3.00	pCi/L		AXM6	01/11/16	1120	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.695	+/-0.331	0.400	1.00	pCi/L		CXP3	01/05/16	0720	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			82.2	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-63	Project: DHLA00112
Sample ID: 387923002	Client ID: DHLA002
Matrix: Water	
Collect Date: 15-DEC-15 17:00	
Receive Date: 22-DEC-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		2.18	+/-1.09	1.53	3.00	pCi/L		AXM6	01/11/16	1120	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.705	+/-0.375	0.495	1.00	pCi/L		CXP3	01/05/16	0720	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			80.9	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-59	Project: DHLA00112
Sample ID: 387923003	Client ID: DHLA002
Matrix: Water	
Collect Date: 15-DEC-15 17:50	
Receive Date: 22-DEC-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	-0.0824	+/-0.946	1.81	3.00	pCi/L		AXM6	01/11/16	1121	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.928	+/-0.394	0.469	1.00	pCi/L		CXP3	01/05/16	0720	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			94.4	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-61	Project: DHLA00112
Sample ID: 387923004	Client ID: DHLA002
Matrix: Water	
Collect Date: 15-DEC-15 18:40	
Receive Date: 22-DEC-15	
Collector: Client	

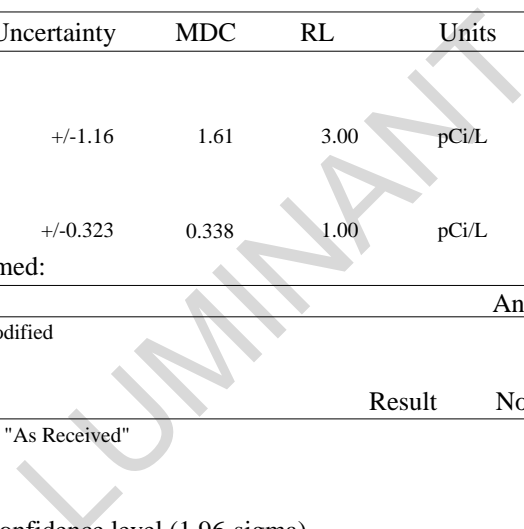
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		2.43	+/-1.16	1.61	3.00	pCi/L		AXM6	01/11/16	1121	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.870	+/-0.323	0.338	1.00	pCi/L		CXP3	01/05/16	0720	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			81.7	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-60	Project: DHLA00112
Sample ID: 387923005	Client ID: DHLA002
Matrix: Water	
Collect Date: 16-DEC-15 07:45	
Receive Date: 22-DEC-15	
Collector: Client	

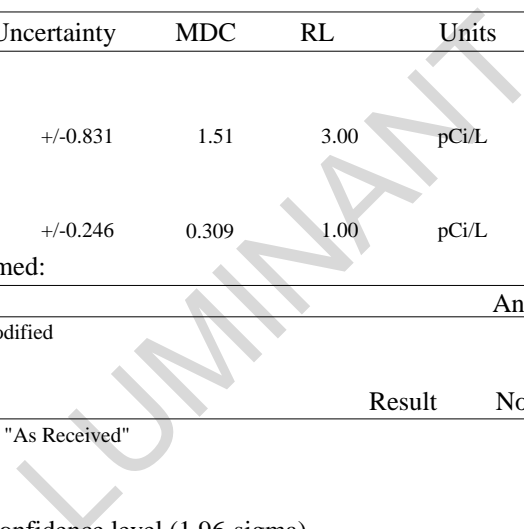
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.340	+/-0.831	1.51	3.00	pCi/L		AXM6	01/11/16	1121	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.426	+/-0.246	0.309	1.00	pCi/L		CXP3	01/05/16	0720	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			78.1	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-13	Project: DHLA00112
Sample ID: 387923006	Client ID: DHLA002
Matrix: Water	
Collect Date: 16-DEC-15 08:55	
Receive Date: 22-DEC-15	
Collector: Client	

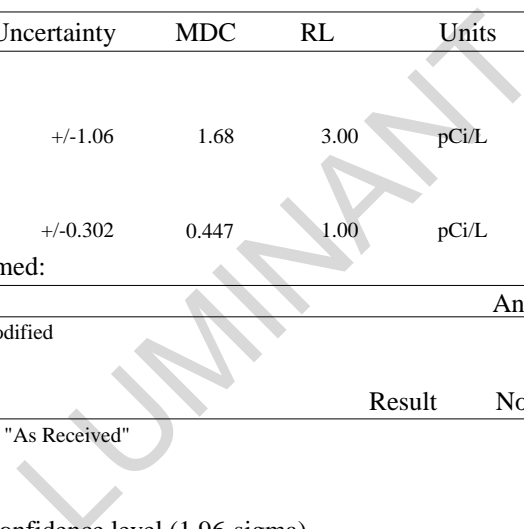
Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.32	+/-1.06	1.68	3.00	pCi/L		AXM6	01/11/16	1121	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226	U	0.415	+/-0.302	0.447	1.00	pCi/L		CXP3	01/05/16	0805	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			85.9	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-21	Project: DHLA00112
Sample ID: 387923007	Client ID: DHLA002
Matrix: Water	
Collect Date: 16-DEC-15 10:00	
Receive Date: 22-DEC-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		4.63	+/-1.40	1.66	3.00	pCi/L		AXM6	01/11/16	1122	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		3.24	+/-0.559	0.189	1.00	pCi/L		CXP3	01/05/16	0805	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			82.5	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: FMW-4R	Project: DHLA00112
Sample ID: 387923008	Client ID: DHLA002
Matrix: Water	
Collect Date: 16-DEC-15 11:05	
Receive Date: 22-DEC-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	-1.01	+/-1.22	2.58	3.00	pCi/L		AXM6	01/11/16	1249	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.826	+/-0.393	0.495	1.00	pCi/L		CXP3	01/05/16	0805	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			101	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID:	BAP-57	Project:	DHLA00112
Sample ID:	387923009	Client ID:	DHLA002
Matrix:	Water		
Collect Date:	16-DEC-15 12:50		
Receive Date:	22-DEC-15		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.0277	+/-0.972	1.80	3.00	pCi/L		AXM6	01/11/16	1120	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.12	+/-0.343	0.288	1.00	pCi/L		CXP3	01/05/16	0805	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			98.9	(15%-125%)

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: January 15, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-58	Project: DHLA00112
Sample ID: 387923010	Client ID: DHLA002
Matrix: Water	
Collect Date: 16-DEC-15 13:45	
Receive Date: 22-DEC-15	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.870	+/-1.14	1.95	3.00	pCi/L		AXM6	01/11/16	1122	1534782	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.713	+/-0.323	0.380	1.00	pCi/L		CXP3	01/05/16	0805	1533726	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			99.7	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: January 15, 2016

Page 1 of 2

**DHL Analytical**  
**2300 Double Creek Drive**  
**Round Rock, Texas**

**Contact: Mr. John DuPont**

**Workorder: 387923**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	1534782										
QC1203462630	387923008 DUP										
Radium-228	U	-1.01	U	1.44	pCi/L	N/A			N/A	AXM6	01/11/16 11:23
	Uncertainty	+/-1.22		+/-1.67							
QC1203462631	LCS										
Radium-228		28.8		32.1	pCi/L		111	(75%-125%)			01/11/16 11:23
	Uncertainty			+/-3.04							
QC1203462629	MB										
Radium-228			U	0.140	pCi/L						01/11/16 11:22
	Uncertainty			+/-0.932							
<b>Rad Ra-226</b>											
Batch	1533726										
QC1203459846	388118001 DUP										
Radium-226	U	0.279	U	0.267	pCi/L	N/A			N/A	CXP3	01/05/16 09:20
	Uncertainty	+/-0.374		+/-0.320							
QC1203459848	LCS										
Radium-226		24.4		22.8	pCi/L		93.2	(75%-125%)			01/05/16 09:20
	Uncertainty			+/-1.53							
QC1203459845	MB										
Radium-226			U	0.241	pCi/L						01/05/16 08:45
	Uncertainty			+/-0.262							
QC1203459847	388118001 MS										
Radium-226	122 U	0.279		120	pCi/L		98.3	(75%-125%)			01/05/16 09:20
	Uncertainty	+/-0.374		+/-7.93							

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N/A RPD or %Recovery limits do not apply.



# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 387923

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
N1	See case narrative										
ND	Analyte concentration is not detected above the detection limit										
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.										
R	Sample results are rejected										
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.										
UI	Gamma Spectroscopy--Uncertain identification										
UJ	Gamma Spectroscopy--Uncertain identification										
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.										
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.										
h	Preparation or preservation holding time was exceeded										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

\* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

There are no "Data Exception Reports" associated with this analytical report.

LUMINANT

DHL Analytical, Inc.  
2300 Double Creek Drive  
Round Rock, TX 78664

TEL: (512) 388-8222  
Work Order: 1512237

FAX: (512) 388-8229

Subcontractor:

GEL Laboratories  
PO Box 30712  
Charleston, SC 29417

TEL: (843) 556-8171  
FAX:  
Acct #:

38923


CHAIN-OF-CUSTODY RECORD

18-Dec-15

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests	
					E903.1	E904.0
BAP-62	Aqueous	-01B	12/15/15 04:10 PM	500HDPEHNO3		
BAP-62	Aqueous	-01C	12/15/15 04:10 PM	500HDPEHNO3	1	
BAP-63	Aqueous	-02B	12/15/15 05:00 PM	500HDPEHNO3		1
BAP-63	Aqueous	-02C	12/15/15 05:00 PM	500HDPEHNO3	1	
BAP-59	Aqueous	-03B	12/15/15 05:50 PM	500HDPEHNO3		1
BAP-59	Aqueous	-03C	12/15/15 05:50 PM	500HDPEHNO3	1	
BAP-61	Aqueous	-04B	12/15/15 06:40 PM	500HDPEHNO3		1
BAP-61	Aqueous	-04C	12/15/15 06:40 PM	500HDPEHNO3	1	
BAP-60	Aqueous	-05B	12/16/15 07:45 AM	500HDPEHNO3		1
BAP-60	Aqueous	-05C	12/16/15 07:45 AM	500HDPEHNO3	1	
AMW-13	Aqueous	-06B	12/16/15 08:55 AM	500HDPEHNO3		1
AMW-13	Aqueous	-06C	12/16/15 08:55 AM	500HDPEHNO3	1	
AMW-21	Aqueous	-07B	12/16/15 10:00 AM	500HDPEHNO3		1
AMW-21	Aqueous	-07C	12/16/15 10:00 AM	500HDPEHNO3	1	
FMW-4R	Aqueous	-08B	12/16/15 11:05 AM	500HDPEHNO3		1
FMW-4R	Aqueous	-08C	12/16/15 11:05 AM	500HDPEHNO3	1	
BAP-57	Aqueous	-09B	12/16/15 12:50 PM	500HDPEHNO3		1
BAP-57	Aqueous	-09C	12/16/15 12:50 PM	500HDPEHNO3	1	

General Comments:

Please analyze these samples with a Standard Turnaround Time.  
Call John DuPont if you have questions.  
Quality Control Package Needed: Standard /  
EMAIL report to both cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: 	Date/Time: 12/15/15 12:00
Relinquished by: _____	Date/Time: _____
Received by: <u>B. Duthman</u>	Date/Time: 12/15/15 12:00
Received by: _____	Date/Time: _____

DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222  
 Work Order: 1512237

FAX: (512) 388-8229

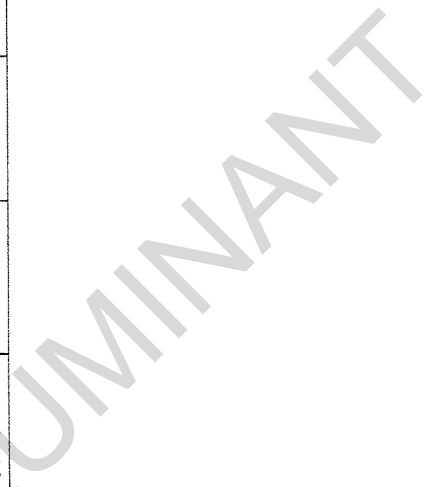
**Subcontractor:**

GEL Laboratories  
 PO Box 30712  
 Charleston, SC 29417

TEL: (843) 556-8171  
 FAX:  
 Acct #:

18-Dec-15

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests	
					E903.1	E904.0
BAP-58	Aqueous	-10B	12/16/15 01:45 PM	500HDPEHNO3		
BAP-58	Aqueous	-10C	12/16/15 01:45 PM	500HDPEHNO3	1	



**General Comments:**

Please analyze these samples with a Standard Turnaround Time.  
 Call John DuPont if you have questions.  
 Quality Control Package Needed: Standard /  
 EMAIL report to both cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: <u>[Signature]</u>	Date/Time: <u>12/18/15 1730</u>
Relinquished by: <u>[Signature]</u>	Date/Time: <u>12/22/15 0850</u>

Received by: [Signature]  
 Received by: [Signature]

12/18/15 1730

12/22/15 0850

SAMPLE RECEIPT & REVIEW FORM

Client: <u>DHLA</u>		SDG/AR/COC/Work Order: <u>307923</u>
Received By: <u>Brielle Luthman</u>		Date Received: <u>11/22/15 0850</u>
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u>
Classified Radioactive II or III by RSO?	<input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	<input checked="" type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?	<input checked="" type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Preservation Method: Ice bags Blue ice Dry ice <u>(None)</u> Other (describe) *all temperatures are recorded in Celsius <u>18°</u>
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): <u>E5032015830</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 Do Low Level Perchlorate samples have headspace as required?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
7 VOA vials contain acid preservation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If unknown, select No)
8 VOA vials free of headspace (defined as < 6mm bubble)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
9 Are Encore containers present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
10 Samples received within holding time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ID's and tests affected:
11 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
12 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
13 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
14 Are sample containers identifiable as GEL provided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
15 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
16 Carrier and tracking number.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: FedEx Air <u>FedEx Ground</u> UPS Field Services Courier Other <u>7752 486 4575</u>

Comments (Use Continuation Form if needed):

**List of current GEL Certifications as of 15 January 2016**

<b>State</b>	<b>Certification</b>
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California	2940 Interim
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA150001
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122016-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania NELAP	68-00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-15-10
Utah NELAP	SC000122015-19
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404



March 31, 2016

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant - Big Brown

Order No.: 1603025

Dear Will Vienne:

DHL Analytical, Inc. received 15 sample(s) on 3/2/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-15-15



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LUMINANT



CLIENT: PBW
ADDRESS: 2201 DOUBLE CREEK DR ROUND ROCK, TX 78664
PHONE: 512-671-3434 FAX/E-MAIL: 512-671-3446
DATA REPORTED TO: WILL VIENNE
ADDITIONAL REPORT COPIES TO:

DATE: 3-1-16 PAGE 1 OF 1
PO #: 5164-A DHL WORK ORDER #: 1603025
PROJECT LOCATION OR NAME: LUMINAUT - BIG BROWN
CLIENT PROJECT #: 5164-A COLLECTOR: J. BRAYTON

Table with columns: Field Sample I.D., DHL Lab #, Date, Time, Matrix, Container Type, # of Containers, HCl, HNO3, H2SO4, NaOH, ICE, UNPRESERVED, ANALYSES (listing various chemical tests like MTBE, TPH, PCB, etc.), and FIELD NOTES. Contains sample data for AMW and BAP series.

RELINQUISHED BY: (Signatures) DATE/TIME 3-1-16 RECEIVED BY: (Signatures) DATE/TIME 3/2/16
TURN AROUND TIME: RUSH, 1-DAY, 2 DAY, NORMAL, OTHER
OTHER: DHL DISPOSAL @ \$5.00 each, Return

LABORATORY USE ONLY:
RECEIVING TEMP: 3.5, 26.3.3 THERM #: 78
CUSTODY SEALS: BROKEN, INTACT, NOT USED
CARRIER: LONE STAR, FEDEX, UPS, OTHER
COURIER DELIVERY
HAND DELIVERED

John Dupont

---

From: Sara Taube [Sara.Taube@pbwllc.com]  
Sent: Wednesday, July 22, 2015 12:05 PM  
To: John Dupont  
Subject: CCR Appendix III and IV  
Follow Up Flag: Follow up  
Flag Status: Completed

Hi John,

Here are the Appendix III and Appendix IV constituents that we will need to have analyzed under the CCR Rule.

Appendix III

Boron  
Calcium  
Chloride  
Fluoride  
pH  
sulfate  
TDS

Appendix IV

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Fluoride  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Radium 226 and 228

We are looking to have approximately 74 wells sampled 8 times over the course of the next two years. Please let me know if there is any more information you might need.

Cheers,

Sara

10/26/2015

BRAYTON  
2201 DOUBLE CREEK DR STE 4004  
5164-A  
ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 01MAR16  
ACTWGT: 28.60 LB  
CAD: 6993913/SSFE1621  
DIMS: 26x15x4 IN  
BILL THIRD PARTY

4422/RSJ/11 095  
Part # 156297V-435 RIT2 02A17

TO **DHL ANALYTICAL**

**2300 DOUBLE CREEK DRIVE**

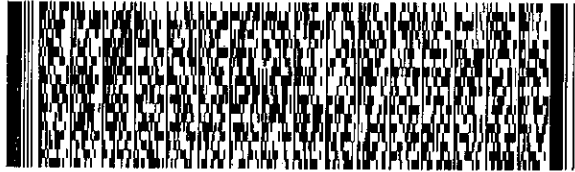
**ROUND ROCK TX 78664**

(512) 388-8222

REF:

THU:

DEPT:



FedEx Express



44109020910191F

**WED - 02 MAR 10:30A**  
**PRIORITY OVERNIGHT**

TRK# 7824 9885 5795  
0201

**A8 BSMA**

78664  
TX-US AUS



SHIP DATE: 01MAR16  
ACTWGT: 50.40 LB  
CAD: 6993913/SSFE1621  
DIMS: 26x14x15 IN  
BILL THIRD PARTY

ORIGIN ID:CLLA (512) 671-3434  
J BRAYTON  
2201 DOUBLE CREEK DR STE 4004  
5164-A  
ROUND ROCK, TX 78664  
UNITED STATES US

4422/RSJ/11 095  
Part # 156297V-435 RIT2 02A17

TO **DHL ANALYTICAL**

**2300 DOUBLE CREEK DRIVE**

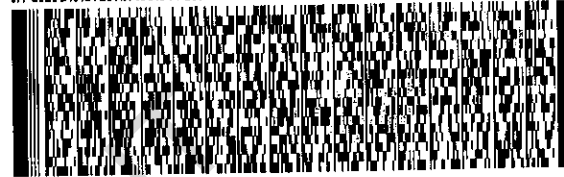
**ROUND ROCK TX 78664**

(512) 388-8222

REF:

THU:

DEPT:



FedEx Express



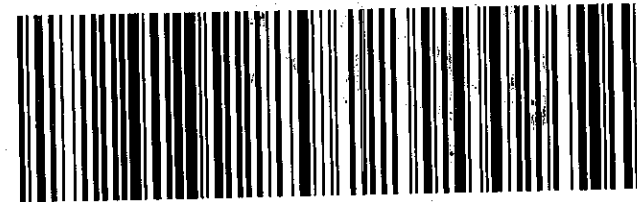
44109020910191F

**WED - 02 MAR 10:30A**  
**PRIORITY OVERNIGHT**

TRK# 7824 9883 0070  
0201

**A8 BSMA**

78664  
TX-US AUS



ORIGIN: (D:CLLA (512) 671-34  
BRAYTON

DOUBLE CREEK DR STE 4004

ROCK, TX 78664  
STATES US

ANALYTICAL

SHIP DATE: 01MAR16  
ACTWT: 48.00 LB  
CAD: 6993913/SSFE1621  
DIMS: 26x15x4 IN

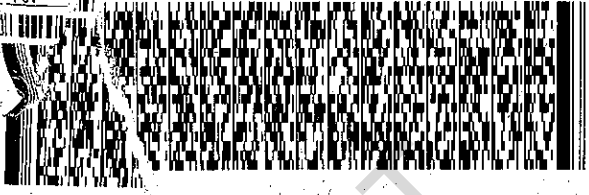
BILL THIRD PARTY

TO DR  
00 DOUBLE CREEK DRIVE

230  
UND ROCK TX 78664

RO -8222 REF: DEPT:

(512) 38  
INVT  
PO:



FedEx  
Express



WED - 02 MAR 10:30A

PRIORITY OVERNIGHT

TRK# 7824 9887 9200  
0201

A8 B SMA

78664  
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 3/2/2016

Work Order Number 1603025

Received by JB

Checklist completed by: [Signature] 3/2/2016  
Signature Date

Reviewed by [Initials] 3/2/2016  
Initials Date

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  3.5 °C 0.6, 3.3
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 8086
- Adjusted? NO Checked by [Signature]
- Water - pH>9 (S) or pH>12 (CN) acceptable upon receipt? Yes  No  NA  LOT #
- Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Corrective Action \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1603025

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

Method SW6020A - Metals Analysis  
Method SW7470A - Mercury Analysis  
Method E300 - Anions Analysis  
Method M4500-H+ B - pH of a Water Analysis  
Method M2540C - TDS Analysis  
Sub-contract - Radium-228 and Radium-226 analyses by methods E904.0/SW8469320 Modified and E903.1 Modified. Analyzed at GEL Laboratory.

**LOG IN**

The samples were received and log-in performed on 3/2/16. A total of 15 samples were received. The samples arrived in good condition and were properly packaged.

**METALS ANALYSIS**

For Metals analysis performed on 3/4/16 and 3/8/16 (batches 73964 & 73987) the matrix spikes and/or matrix spike duplicate recoveries were out of control limits for Calcium. These are flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate (batch 73964) was not from this work order. The sample selected for the matrix spike and matrix spike duplicate (batch 73987) was from this work order. The LCSs were within control limits for this analyte. No further corrective actions were taken.

For Metals analysis performed on 3/16/16 (batch 73987) the RPD for the serial dilution was slightly above control limits for Boron. This is flagged accordingly. The PDS was within control limits for this analyte. No further corrective actions were taken.

For Metals analysis performed on 3/8/16 (batch 73987) the PDS recovery was below control limits for Calcium. This is flagged accordingly. The serial dilution was within control limits for this analyte. No further corrective actions were taken.

**TDS ANALYSIS**

For TDS analysis performed on 3/4/16 (batch 73991) the sample and sample duplicate (1603013-05 & 1603013-05 DUP) had the RPD slightly above control limits. This is flagged accordingly in the QC summary report. This was due to the sample being silty. No further corrective actions were taken.

---

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1603025

**Work Order Sample Summary**

---

<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
1603025-01	AMW-13		02/29/16 07:50 AM	3/2/2016
1603025-02	AMW-14		02/29/16 08:45 AM	3/2/2016
1603025-03	AMW-23		02/29/16 09:35 AM	3/2/2016
1603025-04	AMW-22		02/29/16 10:30 AM	3/2/2016
1603025-05	AMW-20		02/29/16 11:20 AM	3/2/2016
1603025-06	AMW-10		02/29/16 01:20 PM	3/2/2016
1603025-07	AMW-21		02/29/16 02:30 PM	3/2/2016
1603025-08	FMW-4R		02/29/16 03:30 PM	3/2/2016
1603025-09	BAP-58		02/29/16 04:50 PM	3/2/2016
1603025-10	BAP-63		02/29/16 05:45 PM	3/2/2016
1603025-11	BAP-62		03/01/16 07:40 AM	3/2/2016
1603025-12	BAP-61		03/01/16 08:30 AM	3/2/2016
1603025-13	BAP-60		03/01/16 09:20 AM	3/2/2016
1603025-14	BAP-59		03/01/16 10:15 AM	3/2/2016
1603025-15	BAP-57		03/01/16 11:05 AM	3/2/2016

LUMINANT

**Lab Order:** 1603025  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1603025-01A	AMW-13	02/29/16 07:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-13	02/29/16 07:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-13	02/29/16 07:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-13	02/29/16 07:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-01D	AMW-13	02/29/16 07:50 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-13	02/29/16 07:50 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-13	02/29/16 07:50 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	AMW-13	02/29/16 07:50 AM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-02A	AMW-14	02/29/16 08:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-14	02/29/16 08:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-14	02/29/16 08:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-14	02/29/16 08:45 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/03/16 09:00 AM	73968
1603025-02D	AMW-14	02/29/16 08:45 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-14	02/29/16 08:45 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-14	02/29/16 08:45 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	AMW-14	02/29/16 08:45 AM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-03A	AMW-23	02/29/16 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-23	02/29/16 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-23	02/29/16 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-23	02/29/16 09:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/03/16 09:00 AM	73968
1603025-03D	AMW-23	02/29/16 09:35 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-23	02/29/16 09:35 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-23	02/29/16 09:35 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	AMW-23	02/29/16 09:35 AM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-04A	AMW-22	02/29/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-22	02/29/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-22	02/29/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-22	02/29/16 10:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/03/16 09:00 AM	73968



**Lab Order:** 1603025  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1603025-04D	AMW-22	02/29/16 10:30 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-22	02/29/16 10:30 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-22	02/29/16 10:30 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	AMW-22	02/29/16 10:30 AM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-05A	AMW-20	02/29/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-20	02/29/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-20	02/29/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/03/16 08:51 AM	73964
	AMW-20	02/29/16 11:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/03/16 09:00 AM	73968
1603025-05D	AMW-20	02/29/16 11:20 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-20	02/29/16 11:20 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-20	02/29/16 11:20 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	AMW-20	02/29/16 11:20 AM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-06A	AMW-10	02/29/16 01:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-10	02/29/16 01:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-10	02/29/16 01:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-10	02/29/16 01:20 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-06D	AMW-10	02/29/16 01:20 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-10	02/29/16 01:20 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-10	02/29/16 01:20 PM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	AMW-10	02/29/16 01:20 PM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-07A	AMW-21	02/29/16 02:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-21	02/29/16 02:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-21	02/29/16 02:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	AMW-21	02/29/16 02:30 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-07D	AMW-21	02/29/16 02:30 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-21	02/29/16 02:30 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	AMW-21	02/29/16 02:30 PM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	AMW-21	02/29/16 02:30 PM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991

Lab Order: 1603025  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1603025-08A	FMW-4R	02/29/16 03:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	FMW-4R	02/29/16 03:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	FMW-4R	02/29/16 03:30 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-08D	FMW-4R	02/29/16 03:30 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	FMW-4R	02/29/16 03:30 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	FMW-4R	02/29/16 03:30 PM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	FMW-4R	02/29/16 03:30 PM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-09A	BAP-58	02/29/16 04:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-58	02/29/16 04:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-58	02/29/16 04:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-09D	BAP-58	02/29/16 04:50 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-58	02/29/16 04:50 PM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	BAP-58	02/29/16 04:50 PM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-10A	BAP-63	02/29/16 05:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-63	02/29/16 05:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-63	02/29/16 05:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-63	02/29/16 05:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-10D	BAP-63	02/29/16 05:45 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-63	02/29/16 05:45 PM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-63	02/29/16 05:45 PM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	BAP-63	02/29/16 05:45 PM	Aqueous	M2540C	TDS Preparation	03/04/16 09:09 AM	73991
1603025-11A	BAP-62	03/01/16 07:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-62	03/01/16 07:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-62	03/01/16 07:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-62	03/01/16 07:40 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-11D	BAP-62	03/01/16 07:40 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-62	03/01/16 07:40 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-62	03/01/16 07:40 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973

Lab Order: 1603025  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1603025-11D	BAP-62	03/01/16 07:40 AM	Aqueous	M2540C	TDS Preparation	03/07/16 08:30 AM	74014
1603025-12A	BAP-61	03/01/16 08:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-61	03/01/16 08:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-61	03/01/16 08:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-61	03/01/16 08:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-12D	BAP-61	03/01/16 08:30 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-61	03/01/16 08:30 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-61	03/01/16 08:30 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	BAP-61	03/01/16 08:30 AM	Aqueous	M2540C	TDS Preparation	03/07/16 08:30 AM	74014
1603025-13A	BAP-60	03/01/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-60	03/01/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-60	03/01/16 09:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-13D	BAP-60	03/01/16 09:20 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-60	03/01/16 09:20 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-60	03/01/16 09:20 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	BAP-60	03/01/16 09:20 AM	Aqueous	M2540C	TDS Preparation	03/07/16 08:30 AM	74014
1603025-14A	BAP-59	03/01/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-59	03/01/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-59	03/01/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-59	03/01/16 10:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-14D	BAP-59	03/01/16 10:15 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-59	03/01/16 10:15 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023
	BAP-59	03/01/16 10:15 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	BAP-59	03/01/16 10:15 AM	Aqueous	M2540C	TDS Preparation	03/07/16 08:30 AM	74014
1603025-15A	BAP-57	03/01/16 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-57	03/01/16 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/04/16 08:49 AM	73987
	BAP-57	03/01/16 11:05 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/07/16 08:30 AM	74018
1603025-15D	BAP-57	03/01/16 11:05 AM	Aqueous	E300	Anion Preparation	03/08/16 08:32 AM	74023

**Lab Order:** 1603025  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1603025-15D	BAP-57	03/01/16 11:05 AM	Aqueous	M4500-H+ B	pH Preparation	03/03/16 10:52 AM	73973
	BAP-57	03/01/16 11:05 AM	Aqueous	M2540C	TDS Preparation	03/07/16 08:30 AM	74014

LUMINANT

Lab Order: 1603025  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1603025-01A	AMW-13	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:21 PM	CETAC2_HG_160307 C
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:10 PM	ICP-MS4_160308B
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	10	03/16/16 11:25 AM	ICP-MS4_160316A
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 12:35 PM	ICP-MS4_160316A
1603025-01D	AMW-13	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 10:06 AM	IC2_160308A
	AMW-13	Aqueous	E300	Anions by IC method - Water	74023	10	03/09/16 09:18 AM	IC2_160308A
	AMW-13	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:33 AM	TITRATOR_160303A
	AMW-13	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-02A	AMW-14	Aqueous	SW7470A	Mercury Total: Aqueous	73968	1	03/03/16 02:59 PM	CETAC2_HG_160303 A
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	1	03/04/16 10:01 PM	ICP-MS4_160304C
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	10	03/09/16 02:18 PM	ICP-MS4_160309C
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	1	03/14/16 01:09 PM	ICP-MS4_160314A
1603025-02D	AMW-14	Aqueous	E300	Anions by IC method - Water	74023	10	03/09/16 09:33 AM	IC2_160308A
	AMW-14	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 10:20 AM	IC2_160308A
	AMW-14	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:36 AM	TITRATOR_160303A
	AMW-14	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-03A	AMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	73968	1	03/03/16 03:02 PM	CETAC2_HG_160303 A
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	1	03/04/16 10:03 PM	ICP-MS4_160304C
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	10	03/09/16 02:20 PM	ICP-MS4_160309C
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	10	03/14/16 01:11 PM	ICP-MS4_160314A
1603025-03D	AMW-23	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 10:35 AM	IC2_160308A
	AMW-23	Aqueous	E300	Anions by IC method - Water	74023	100	03/09/16 09:47 AM	IC2_160308A
	AMW-23	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:39 AM	TITRATOR_160303A
	AMW-23	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-04A	AMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	73968	1	03/03/16 03:04 PM	CETAC2_HG_160303 A
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	1	03/14/16 01:13 PM	ICP-MS4_160314A

**Lab Order:** 1603025  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1603025-04A	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	1	03/04/16 10:05 PM	ICP-MS4_160304C
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	10	03/09/16 02:22 PM	ICP-MS4_160309C
1603025-04D	AMW-22	Aqueous	E300	Anions by IC method - Water	74023	100	03/09/16 10:02 AM	IC2_160308A
	AMW-22	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 10:50 AM	IC2_160308A
	AMW-22	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:41 AM	TITRATOR_160303A
	AMW-22	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-05A	AMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	73968	1	03/03/16 03:06 PM	CETAC2_HG_160303A
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	1	03/04/16 10:07 PM	ICP-MS4_160304C
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	10	03/09/16 02:24 PM	ICP-MS4_160309C
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73964	1	03/14/16 01:15 PM	ICP-MS4_160314A
1603025-05D	AMW-20	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 11:04 AM	IC2_160308A
	AMW-20	Aqueous	E300	Anions by IC method - Water	74023	100	03/09/16 10:17 AM	IC2_160308A
	AMW-20	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:44 AM	TITRATOR_160303A
	AMW-20	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-06A	AMW-10	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:23 PM	CETAC2_HG_160307C
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:12 PM	ICP-MS4_160308B
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	50	03/16/16 11:27 AM	ICP-MS4_160316A
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 12:37 PM	ICP-MS4_160316A
1603025-06D	AMW-10	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 11:19 AM	IC2_160308A
	AMW-10	Aqueous	E300	Anions by IC method - Water	74023	100	03/09/16 10:31 AM	IC2_160308A
	AMW-10	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:45 AM	TITRATOR_160303A
	AMW-10	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-07A	AMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:25 PM	CETAC2_HG_160307C
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:14 PM	ICP-MS4_160308B
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	10	03/16/16 11:29 AM	ICP-MS4_160316A
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 12:39 PM	ICP-MS4_160316A

Lab Order: 1603025  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1603025-07D	AMW-21	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 11:37 AM	IC2_160308A
	AMW-21	Aqueous	E300	Anions by IC method - Water	74023	100	03/09/16 11:00 AM	IC2_160308A
	AMW-21	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:50 AM	TITRATOR_160303A
	AMW-21	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-08A	FMW-4R	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:28 PM	CETAC2_HG_160307 C
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	10	03/16/16 11:31 AM	ICP-MS4_160316A
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:16 PM	ICP-MS4_160308B
1603025-08D	FMW-4R	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 11:51 AM	IC2_160308A
	FMW-4R	Aqueous	E300	Anions by IC method - Water	74023	10	03/09/16 11:15 AM	IC2_160308A
	FMW-4R	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:53 AM	TITRATOR_160303A
	FMW-4R	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-09A	BAP-58	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:30 PM	CETAC2_HG_160307 C
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:18 PM	ICP-MS4_160308B
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 11:33 AM	ICP-MS4_160316A
1603025-09D	BAP-58	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 12:06 PM	IC2_160308A
	BAP-58	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:55 AM	TITRATOR_160303A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-10A	BAP-63	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:32 PM	CETAC2_HG_160307 C
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:20 PM	ICP-MS4_160308B
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	10	03/16/16 11:35 AM	ICP-MS4_160316A
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 12:41 PM	ICP-MS4_160316A
1603025-10D	BAP-63	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 01:08 PM	IC2_160308A
	BAP-63	Aqueous	E300	Anions by IC method - Water	74023	10	03/08/16 02:45 PM	IC2_160308A
	BAP-63	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 11:59 AM	TITRATOR_160303A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	73991	1	03/07/16 09:05 AM	WC_160304C
1603025-11A	BAP-62	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:34 PM	CETAC2_HG_160307 C

Lab Order: 1603025  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1603025-11A	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:22 PM	ICP-MS4_160308B
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	10	03/16/16 11:37 AM	ICP-MS4_160316A
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 12:43 PM	ICP-MS4_160316A
1603025-11D	BAP-62	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 01:23 PM	IC2_160308A
	BAP-62	Aqueous	E300	Anions by IC method - Water	74023	10	03/08/16 02:59 PM	IC2_160308A
	BAP-62	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 12:02 PM	TITRATOR_160303A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	74014	1	03/07/16 09:05 AM	WC_160307B
1603025-12A	BAP-61	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:37 PM	CETAC2_HG_160307 C
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:24 PM	ICP-MS4_160308B
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	10	03/16/16 11:39 AM	ICP-MS4_160316A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 12:45 PM	ICP-MS4_160316A
1603025-12D	BAP-61	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 01:38 PM	IC2_160308A
	BAP-61	Aqueous	E300	Anions by IC method - Water	74023	100	03/08/16 03:14 PM	IC2_160308A
	BAP-61	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 12:04 PM	TITRATOR_160303A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	74014	1	03/07/16 09:05 AM	WC_160307B
1603025-13A	BAP-60	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:39 PM	CETAC2_HG_160307 C
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:26 PM	ICP-MS4_160308B
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 11:41 AM	ICP-MS4_160316A
1603025-13D	BAP-60	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 01:52 PM	IC2_160308A
	BAP-60	Aqueous	E300	Anions by IC method - Water	74023	10	03/08/16 03:29 PM	IC2_160308A
	BAP-60	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 12:07 PM	TITRATOR_160303A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	74014	1	03/07/16 09:05 AM	WC_160307B
1603025-14A	BAP-59	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:41 PM	CETAC2_HG_160307 C
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:56 PM	ICP-MS4_160308B
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	10	03/16/16 12:33 PM	ICP-MS4_160316A
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 12:47 PM	ICP-MS4_160316A



Lab Order: 1603025  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1603025-14D	BAP-59	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 02:07 PM	IC2_160308A
	BAP-59	Aqueous	E300	Anions by IC method - Water	74023	10	03/09/16 09:04 AM	IC2_160308A
	BAP-59	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 12:33 PM	TITRATOR_160303A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	74014	1	03/07/16 09:05 AM	WC_160307B
1603025-15A	BAP-57	Aqueous	SW7470A	Mercury Total: Aqueous	74018	1	03/07/16 02:56 PM	CETAC2_HG_160307 C
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/08/16 04:06 PM	ICP-MS4_160308B
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73987	1	03/16/16 11:21 AM	ICP-MS4_160316A
1603025-15D	BAP-57	Aqueous	E300	Anions by IC method - Water	74023	1	03/08/16 02:21 PM	IC2_160308A
	BAP-57	Aqueous	M4500-H+ B	pH	73973	1	03/03/16 12:35 PM	TITRATOR_160303A
	BAP-57	Aqueous	M2540C	Total Dissolved Solids	74014	1	03/07/16 09:05 AM	WC_160307B

LUMINANT

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** AMW-13  
**Lab ID:** 1603025-01  
**Collection Date:** 02/29/16 07:50 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:21 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:10 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:10 PM
Barium	0.128	0.00300	0.0100		mg/L	1	03/08/16 04:10 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:10 PM
Boron	0.0436	0.0100	0.0300		mg/L	1	03/16/16 12:35 PM
Cadmium	0.000385	0.000300	0.00100	J	mg/L	1	03/08/16 04:10 PM
Calcium	42.2	1.00	3.00		mg/L	10	03/16/16 11:25 AM
Chromium	0.0880	0.00200	0.00500		mg/L	1	03/08/16 04:10 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/08/16 04:10 PM
Lead	0.00181	0.000300	0.00100		mg/L	1	03/08/16 04:10 PM
Lithium	0.0151	0.00500	0.0100		mg/L	1	03/08/16 04:10 PM
Molybdenum	0.00496	0.00200	0.00500	J	mg/L	1	03/08/16 04:10 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:10 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:10 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	219	3.00	10.0		mg/L	10	03/09/16 09:18 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 10:06 AM
Sulfate	73.5	1.00	3.00		mg/L	1	03/08/16 10:06 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.41	0	0		pH Units@12.7°C	1	03/03/16 11:33 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	600	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** AMW-14  
**Lab ID:** 1603025-02  
**Collection Date:** 02/29/16 08:45 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	0.000676	0.000800	0.000200		mg/L	1	03/03/16 02:59 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/04/16 10:01 PM
Arsenic	0.00411	0.00200	0.00500	J	mg/L	1	03/04/16 10:01 PM
Barium	0.219	0.00300	0.0100		mg/L	1	03/04/16 10:01 PM
Beryllium	0.00109	0.000300	0.00100		mg/L	1	03/04/16 10:01 PM
Boron	0.0875	0.0100	0.0300		mg/L	1	03/14/16 01:09 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/04/16 10:01 PM
Calcium	132	1.00	3.00		mg/L	10	03/09/16 02:18 PM
Chromium	0.430	0.00200	0.00500		mg/L	1	03/04/16 10:01 PM
Cobalt	0.0114	0.00300	0.00500		mg/L	1	03/04/16 10:01 PM
Lead	0.0120	0.000300	0.00100		mg/L	1	03/04/16 10:01 PM
Lithium	0.0422	0.00500	0.0100		mg/L	1	03/04/16 10:01 PM
Molybdenum	0.0194	0.00200	0.00500		mg/L	1	03/04/16 10:01 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/04/16 10:01 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/04/16 10:01 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	210	3.00	10.0		mg/L	10	03/09/16 09:33 AM
Fluoride	0.113	0.100	0.400	J	mg/L	1	03/08/16 10:20 AM
Sulfate	91.2	1.00	3.00		mg/L	1	03/08/16 10:20 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.95	0	0		pH Units@12.9°C	1	03/03/16 11:36 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	867	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** AMW-23  
**Lab ID:** 1603025-03  
**Collection Date:** 02/29/16 09:35 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.000800	0.000800	0.00200		mg/L	1	03/03/16 03:02 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/04/16 10:03 PM
Arsenic	0.00258	0.00200	0.00500	J	mg/L	1	03/04/16 10:03 PM
Barium	0.313	0.00300	0.0100		mg/L	1	03/04/16 10:03 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/04/16 10:03 PM
Boron	2.15	0.100	0.300		mg/L	10	03/14/16 01:11 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/04/16 10:03 PM
Calcium	131	1.00	3.00		mg/L	10	03/09/16 02:20 PM
Chromium	0.00355	0.00200	0.00500	J	mg/L	1	03/04/16 10:03 PM
Cobalt	0.0155	0.00300	0.00500		mg/L	1	03/04/16 10:03 PM
Lead	0.000910	0.000300	0.00100	J	mg/L	1	03/04/16 10:03 PM
Lithium	0.0128	0.00500	0.0100		mg/L	1	03/04/16 10:03 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/04/16 10:03 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/04/16 10:03 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/04/16 10:03 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	391	30.0	100		mg/L	100	03/09/16 09:47 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 10:35 AM
Sulfate	90.5	1.00	3.00		mg/L	1	03/08/16 10:35 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.55	0	0		pH Units@13.3°C	1	03/03/16 11:39 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	1270	50.0	50.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** AMW-22  
**Lab ID:** 1603025-04  
**Collection Date:** 02/29/16 10:30 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 03:04 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/04/16 10:05 PM
Arsenic	0.00333	0.00200	0.00500	J	mg/L	1	03/04/16 10:05 PM
Barium	0.390	0.00300	0.0100		mg/L	1	03/04/16 10:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/04/16 10:05 PM
Boron	0.0514	0.0100	0.0300		mg/L	1	03/14/16 01:13 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/04/16 10:05 PM
Calcium	100	1.00	3.00		mg/L	10	03/09/16 02:22 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/04/16 10:05 PM
Cobalt	0.0101	0.00300	0.00500		mg/L	1	03/04/16 10:05 PM
Lead	0.000305	0.000300	0.00100	J	mg/L	1	03/04/16 10:05 PM
Lithium	0.0155	0.00500	0.0100		mg/L	1	03/04/16 10:05 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/04/16 10:05 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/04/16 10:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/04/16 10:05 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	397	30.0	100		mg/L	100	03/09/16 10:02 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 10:50 AM
Sulfate	22.9	1.00	3.00		mg/L	1	03/08/16 10:50 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.33	0	0		pH Units@14°C	1	03/03/16 11:41 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	1090	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** AMW-20  
**Lab ID:** 1603025-05  
**Collection Date:** 02/29/16 11:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>KL</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 03:06 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>RO</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/04/16 10:07 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/04/16 10:07 PM
Barium	0.531	0.00300	0.0100		mg/L	1	03/04/16 10:07 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/04/16 10:07 PM
Boron	0.0553	0.0100	0.0300		mg/L	1	03/14/16 01:15 PM
Cadmium	0.000313	0.000300	0.00100	J	mg/L	1	03/04/16 10:07 PM
Calcium	76.5	1.00	3.00		mg/L	10	03/09/16 02:24 PM
Chromium	0.00391	0.00200	0.00500	J	mg/L	1	03/04/16 10:07 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/04/16 10:07 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/04/16 10:07 PM
Lithium	0.0216	0.00500	0.0100		mg/L	1	03/04/16 10:07 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/04/16 10:07 PM
Selenium	0.00222	0.00200	0.00500	J	mg/L	1	03/04/16 10:07 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/04/16 10:07 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	326	30.0	100		mg/L	100	03/09/16 10:17 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 11:04 AM
Sulfate	15.3	1.00	3.00		mg/L	1	03/08/16 11:04 AM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	6.27	0	0		pH Units@14.6°C	1	03/03/16 11:44 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	1040	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** AMW-10  
**Lab ID:** 1603025-06  
**Collection Date:** 02/29/16 01:20 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:23 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:12 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:12 PM
Barium	2.39	0.150	0.500		mg/L	50	03/16/16 11:27 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:12 PM
Boron	0.0502	0.0100	0.0300		mg/L	1	03/16/16 12:37 PM
Cadmium	0.00107	0.000300	0.00100		mg/L	1	03/08/16 04:12 PM
Calcium	348	5.00	15.0		mg/L	50	03/16/16 11:27 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:12 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/08/16 04:12 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:12 PM
Lithium	0.0372	0.00500	0.0100		mg/L	1	03/08/16 04:12 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:12 PM
Selenium	0.0144	0.00200	0.00500		mg/L	1	03/08/16 04:12 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:12 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	1400	30.0	100		mg/L	100	03/09/16 10:31 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 11:19 AM
Sulfate	10.9	1.00	3.00		mg/L	1	03/08/16 11:19 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.20	0	0		pH Units@15°C	1	03/03/16 11:45 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	3800	50.0	50.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** AMW-21  
**Lab ID:** 1603025-07  
**Collection Date:** 02/29/16 02:30 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:25 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:14 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:14 PM
Barium	1.29	0.00300	0.0100		mg/L	1	03/08/16 04:14 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:14 PM
Boron	0.0479	0.0100	0.0300		mg/L	1	03/16/16 12:39 PM
Cadmium	0.000488	0.000300	0.00100	J	mg/L	1	03/08/16 04:14 PM
Calcium	127	1.00	3.00		mg/L	10	03/16/16 11:29 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:14 PM
Cobalt	0.00967	0.00300	0.00500		mg/L	1	03/08/16 04:14 PM
Lead	0.00153	0.000300	0.00100		mg/L	1	03/08/16 04:14 PM
Lithium	0.0212	0.00500	0.0100		mg/L	1	03/08/16 04:14 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:14 PM
Selenium	0.126	0.00200	0.00500		mg/L	1	03/08/16 04:14 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:14 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	695	30.0	100		mg/L	100	03/09/16 11:00 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 11:37 AM
Sulfate	15.1	1.00	3.00		mg/L	1	03/08/16 11:37 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.14	0	0		pH Units@15.3°C	1	03/03/16 11:50 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	2030	50.0	50.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** FMW-4R  
**Lab ID:** 1603025-08  
**Collection Date:** 02/29/16 03:30 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>AH</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:28 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>RO</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:16 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:16 PM
Barium	0.0331	0.00300	0.0100		mg/L	1	03/08/16 04:16 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:16 PM
Boron	3.84	0.100	0.300		mg/L	10	03/16/16 11:31 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:16 PM
Calcium	47.3	1.00	3.00		mg/L	10	03/16/16 11:31 AM
Chromium	0.00254	0.00200	0.00500	J	mg/L	1	03/08/16 04:16 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/08/16 04:16 PM
Lead	0.000659	0.000300	0.00100	J	mg/L	1	03/08/16 04:16 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	03/08/16 04:16 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:16 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:16 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:16 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	118	3.00	10.0		mg/L	10	03/09/16 11:15 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 11:51 AM
Sulfate	186	10.0	30.0		mg/L	10	03/09/16 11:15 AM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	6.94	0	0		pH Units@15.5°C	1	03/03/16 11:53 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	598	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** BAP-58  
**Lab ID:** 1603025-09  
**Collection Date:** 02/29/16 04:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:30 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:18 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:18 PM
Barium	0.0525	0.00300	0.0100		mg/L	1	03/08/16 04:18 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:18 PM
Boron	1.18	0.0100	0.0300		mg/L	1	03/16/16 11:33 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:18 PM
Calcium	18.0	0.100	0.300		mg/L	1	03/08/16 04:18 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:18 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/08/16 04:18 PM
Lead	0.000417	0.000300	0.00100	J	mg/L	1	03/08/16 04:18 PM
Lithium	0.00937	0.00500	0.0100	J	mg/L	1	03/08/16 04:18 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:18 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:18 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:18 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	35.3	0.300	1.00		mg/L	1	03/08/16 12:06 PM
Fluoride	0.131	0.100	0.400	J	mg/L	1	03/08/16 12:06 PM
Sulfate	90.1	1.00	3.00		mg/L	1	03/08/16 12:06 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.76	0	0		pH Units@15.5°C	1	03/03/16 11:55 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	359	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** BAP-63  
**Lab ID:** 1603025-10  
**Collection Date:** 02/29/16 05:45 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:32 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:20 PM
Arsenic	0.00892	0.00200	0.00500		mg/L	1	03/08/16 04:20 PM
Barium	0.0989	0.00300	0.0100		mg/L	1	03/08/16 04:20 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:20 PM
Boron	1.02	0.0100	0.0300		mg/L	1	03/16/16 12:41 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:20 PM
Calcium	66.2	1.00	3.00		mg/L	10	03/16/16 11:35 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:20 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/08/16 04:20 PM
Lead	0.000345	0.000300	0.00100	J	mg/L	1	03/08/16 04:20 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	03/08/16 04:20 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:20 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:20 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:20 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	60.6	3.00	10.0		mg/L	10	03/08/16 02:45 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 01:08 PM
Sulfate	113	1.00	3.00		mg/L	1	03/08/16 01:08 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.96	0	0		pH Units@16.7°C	1	03/03/16 11:59 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	608	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** BAP-62  
**Lab ID:** 1603025-11  
**Collection Date:** 03/01/16 07:40 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:34 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:22 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:22 PM
Barium	0.128	0.00300	0.0100		mg/L	1	03/08/16 04:22 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:22 PM
Boron	1.46	0.0100	0.0300		mg/L	1	03/16/16 12:43 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:22 PM
Calcium	101	1.00	3.00		mg/L	10	03/16/16 11:37 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:22 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/08/16 04:22 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:22 PM
Lithium	0.0413	0.00500	0.0100		mg/L	1	03/08/16 04:22 PM
Molybdenum	0.00376	0.00200	0.00500	J	mg/L	1	03/08/16 04:22 PM
Selenium	0.0258	0.00200	0.00500		mg/L	1	03/08/16 04:22 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:22 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	24.0	0.300	1.00		mg/L	1	03/08/16 01:23 PM
Fluoride	0.237	0.100	0.400	J	mg/L	1	03/08/16 01:23 PM
Sulfate	191	10.0	30.0		mg/L	10	03/08/16 02:59 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.33	0	0		pH Units@17.2°C	1	03/03/16 12:02 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	627	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** BAP-61  
**Lab ID:** 1603025-12  
**Collection Date:** 03/01/16 08:30 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:37 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:24 PM
Arsenic	0.00570	0.00200	0.00500		mg/L	1	03/08/16 04:24 PM
Barium	0.110	0.00300	0.0100		mg/L	1	03/08/16 04:24 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:24 PM
Boron	0.788	0.0100	0.0300		mg/L	1	03/16/16 12:45 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:24 PM
Calcium	65.5	1.00	3.00		mg/L	10	03/16/16 11:39 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:24 PM
Cobalt	0.00888	0.00300	0.00500		mg/L	1	03/08/16 04:24 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:24 PM
Lithium	0.00580	0.00500	0.0100	J	mg/L	1	03/08/16 04:24 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:24 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:24 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:24 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	205	30.0	100		mg/L	100	03/08/16 03:14 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/08/16 01:38 PM
Sulfate	113	1.00	3.00		mg/L	1	03/08/16 01:38 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.72	0	0		pH Units@16.8°C	1	03/03/16 12:04 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	711	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** BAP-60  
**Lab ID:** 1603025-13  
**Collection Date:** 03/01/16 09:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:39 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:26 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:26 PM
Barium	0.0934	0.00300	0.0100		mg/L	1	03/08/16 04:26 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:26 PM
Boron	0.503	0.0100	0.0300		mg/L	1	03/16/16 11:41 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:26 PM
Calcium	13.8	0.100	0.300		mg/L	1	03/08/16 04:26 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:26 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/08/16 04:26 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:26 PM
Lithium	0.0113	0.00500	0.0100		mg/L	1	03/08/16 04:26 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:26 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:26 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:26 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	52.3	3.00	10.0		mg/L	10	03/08/16 03:29 PM
Fluoride	0.193	0.100	0.400	J	mg/L	1	03/08/16 01:52 PM
Sulfate	68.5	1.00	3.00		mg/L	1	03/08/16 01:52 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.63	0	0		pH Units@18.1°C	1	03/03/16 12:07 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	408	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** BAP-59  
**Lab ID:** 1603025-14  
**Collection Date:** 03/01/16 10:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:41 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:56 PM
Arsenic	0.00655	0.00200	0.00500		mg/L	1	03/08/16 04:56 PM
Barium	0.102	0.00300	0.0100		mg/L	1	03/08/16 04:56 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:56 PM
Boron	2.88	0.100	0.300		mg/L	10	03/16/16 12:33 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:56 PM
Calcium	61.2	1.00	3.00		mg/L	10	03/16/16 12:33 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:56 PM
Cobalt	0.00537	0.00300	0.00500		mg/L	1	03/08/16 04:56 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:56 PM
Lithium	0.00987	0.00500	0.0100	J	mg/L	1	03/08/16 04:56 PM
Molybdenum	0.00345	0.00200	0.00500	J	mg/L	1	03/16/16 12:47 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:56 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:56 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	136	3.00	10.0		mg/L	10	03/09/16 09:04 AM
Fluoride	0.242	0.100	0.400	J	mg/L	1	03/08/16 02:07 PM
Sulfate	262	10.0	30.0		mg/L	10	03/09/16 09:04 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.99	0	0		pH Units@13°C	1	03/03/16 12:33 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	858	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 31-Mar-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1603025

**Client Sample ID:** BAP-57  
**Lab ID:** 1603025-15  
**Collection Date:** 03/01/16 11:05 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/16 02:56 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/08/16 04:06 PM
Arsenic	0.00963	0.00200	0.00500		mg/L	1	03/08/16 04:06 PM
Barium	0.0984	0.00300	0.0100		mg/L	1	03/08/16 04:06 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:06 PM
Boron	0.242	0.0100	0.0300		mg/L	1	03/16/16 11:21 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:06 PM
Calcium	21.6	0.100	0.300		mg/L	1	03/08/16 04:06 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:06 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/08/16 04:06 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/08/16 04:06 PM
Lithium	0.0842	0.00500	0.0100		mg/L	1	03/08/16 04:06 PM
Molybdenum	0.0102	0.00200	0.00500		mg/L	1	03/08/16 04:06 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/08/16 04:06 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/08/16 04:06 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	30.7	0.300	1.00		mg/L	1	03/08/16 02:21 PM
Fluoride	0.221	0.100	0.400	J	mg/L	1	03/08/16 02:21 PM
Sulfate	56.4	1.00	3.00		mg/L	1	03/08/16 02:21 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	9.56	0	0		pH Units@13.6°C	1	03/03/16 12:35 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	450	10.0	10.0		mg/L	1	03/07/16 09:05 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



CLIENT: Pastor, Behling & Wheeler

**ANALYTICAL QC SUMMARY REPORT**

Work Order: 1603025

Project: Luminant - Big Brown

RunID: CETAC2\_HG\_160303A

The QC data in batch 73968 applies to the following samples: 1603025-02A, 1603025-03A, 1603025-04A, 1603025-05A

Sample ID <b>MB-73968</b>	Batch ID: <b>73968</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 2:10:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID <b>LCS-73968</b>	Batch ID: <b>73968</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 2:14:31 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00199 0.000200 0.00200 0 99.5 85 115

Sample ID <b>LCSD-73968</b>	Batch ID: <b>73968</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 2:16:48 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00204 0.000200 0.00200 0 102 85 115 2.48 15

Sample ID <b>1603025-05A SD</b>	Batch ID: <b>73968</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 3:09:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.000400 0.00100 0 0 0 0 10

Sample ID <b>1603025-05A PDS</b>	Batch ID: <b>73968</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 3:11:17 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00245 0.000200 0.00250 0 98.0 85 115

Sample ID <b>1603025-05A MS</b>	Batch ID: <b>73968</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 3:13:33 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00198 0.000200 0.00200 0 99.0 80 120

Sample ID <b>1603025-05A MSD</b>	Batch ID: <b>73968</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 3:15:50 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00193 0.000200 0.00200 0 96.5 80 120 2.56 15

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_160303A

Sample ID <b>ICV-160303</b>	Batch ID: <b>R84495</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 10:37:24 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00395	0.000200	0.00400	0	98.8	90	110
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Sample ID <b>CCV5-160303</b>	Batch ID: <b>R84495</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 2:05:25 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00197	0.000200	0.00200	0	98.5	90	110
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Sample ID <b>CCV6-160303</b>	Batch ID: <b>R84495</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 2:41:44 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00192	0.000200	0.00200	0	96.0	90	110
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Sample ID <b>CCV7-160303</b>	Batch ID: <b>R84495</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160303A</b>	Analysis Date: <b>3/3/2016 3:18:08 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00199	0.000200	0.00200	0	99.5	90	110
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<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: CETAC2\_HG\_160307C**

The QC data in batch 74018 applies to the following samples: 1603025-01A, 1603025-06A, 1603025-07A, 1603025-08A, 1603025-09A, 1603025-10A, 1603025-11A, 1603025-12A, 1603025-13A, 1603025-14A, 1603025-15A

Sample ID <b>MB-74018</b>	Batch ID: <b>74018</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 2:14:35 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID <b>LCS-74018</b>	Batch ID: <b>74018</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 2:16:51 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00195 0.000200 0.00200 0 97.5 85 115

Sample ID <b>LCSD-74018</b>	Batch ID: <b>74018</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 2:19:07 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00202 0.000200 0.00200 0 101 85 115 3.53 15

Sample ID <b>1603053-01A SD</b>	Batch ID: <b>74018</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 3:07:32 PM</b>	Prep Date: <b>3/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.00200 0.00500 0 0 0 0 10

Sample ID <b>1603053-01A PDS</b>	Batch ID: <b>74018</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 3:09:48 PM</b>	Prep Date: <b>3/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.0108 0.00100 0.0125 0 86.0 85 115

Sample ID <b>1603053-01A MS</b>	Batch ID: <b>74018</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 3:12:05 PM</b>	Prep Date: <b>3/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00965 0.00100 0.0100 0 96.5 80 120

Sample ID <b>1603053-01A MSD</b>	Batch ID: <b>74018</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 3:14:21 PM</b>	Prep Date: <b>3/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00960 0.00100 0.0100 0 96.0 80 120 0.519 15

**Qualifiers:** B Analyte detected in the associated Method Blank DF Dilution Factor  
J Analyte detected between MDL and RL MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit R RPD outside accepted control limits  
RL Reporting Limit S Spike Recovery outside control limits  
J Analyte detected between SDL and RL N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_160307C

Sample ID <b>ICV-160307</b>	Batch ID: <b>R84565</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 10:21:07 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00384	0.000200	0.00400	0	96.0	90	110			

Sample ID <b>CCV1-160307</b>	Batch ID: <b>R84565</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 2:10:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00181	0.000200	0.00200	0	90.5	90	110			

Sample ID <b>CCV2-160307</b>	Batch ID: <b>R84565</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 2:51:38 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00193	0.000200	0.00200	0	96.5	90	110			

Sample ID <b>CCV3-160307</b>	Batch ID: <b>R84565</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160307C</b>	Analysis Date: <b>3/7/2016 3:16:39 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00191	0.000200	0.00200	0	95.5	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160304C**

The QC data in batch 73964 applies to the following samples: 1603025-02A, 1603025-03A, 1603025-04A, 1603025-05A

Sample ID: <b>MB-73964</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 9:49:00 PM</b>	Prep Date: <b>3/3/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID: <b>LCS-73964</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 9:51:00 PM</b>	Prep Date: <b>3/3/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.195	0.00250	0.200	0	97.6	80	120			
Arsenic	0.201	0.00500	0.200	0	101	80	120			
Barium	0.201	0.0100	0.200	0	101	80	120			
Beryllium	0.212	0.00100	0.200	0	106	80	120			
Cadmium	0.203	0.00100	0.200	0	101	80	120			
Calcium	4.79	0.300	5.00	0	95.7	80	120			
Chromium	0.206	0.00500	0.200	0	103	80	120			
Cobalt	0.211	0.00500	0.200	0	106	80	120			
Lead	0.201	0.00100	0.200	0	101	80	120			
Lithium	0.216	0.0100	0.200	0	108	80	120			
Molybdenum	0.200	0.00500	0.200	0	100	80	120			
Selenium	0.200	0.00500	0.200	0	100	80	120			
Thallium	0.203	0.00150	0.200	0	101	80	120			

Sample ID: <b>LCSD-73964</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 9:53:00 PM</b>	Prep Date: <b>3/3/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.196	0.00250	0.200	0	98.0	80	120	0.422	15	
Arsenic	0.202	0.00500	0.200	0	101	80	120	0.214	15	
Barium	0.200	0.0100	0.200	0	99.9	80	120	0.592	15	
Beryllium	0.214	0.00100	0.200	0	107	80	120	1.07	15	

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160304C**

Sample ID <b>LCSD-73964</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 9:53:00 PM</b>	Prep Date: <b>3/3/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.203	0.00100	0.200	0	101	80	120	0.066	15	
Calcium	4.82	0.300	5.00	0	96.4	80	120	0.688	15	
Chromium	0.208	0.00500	0.200	0	104	80	120	0.639	15	
Cobalt	0.210	0.00500	0.200	0	105	80	120	0.673	15	
Lead	0.202	0.00100	0.200	0	101	80	120	0.261	15	
Lithium	0.220	0.0100	0.200	0	110	80	120	1.56	15	
Molybdenum	0.198	0.00500	0.200	0	99.1	80	120	0.990	15	
Selenium	0.200	0.00500	0.200	0	100	80	120	0.095	15	
Thallium	0.202	0.00150	0.200	0	101	80	120	0.336	15	

Sample ID <b>1603027-06A SD</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 9:59:00 PM</b>	Prep Date: <b>3/3/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	<0.0100	0.0250	0	0				0	10	
Barium	0.0350	0.0500	0	0.0359				2.35	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0.00398				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	0.183	0.0500	0	0.175				4.39	10	
Molybdenum	<0.0100	0.0250	0	0				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID <b>1603027-06A PDS</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 10:18:00 PM</b>	Prep Date: <b>3/3/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	101	80	120			
Arsenic	0.195	0.00500	0.200	0	97.7	80	120			
Barium	0.231	0.0100	0.200	0.0359	97.5	80	120			
Beryllium	0.195	0.00100	0.200	0	97.4	80	120			
Cadmium	0.190	0.00100	0.200	0	94.8	80	120			
Chromium	0.200	0.00500	0.200	0	100	80	120			
Cobalt	0.197	0.00500	0.200	0.00398	96.4	80	120			
Lead	0.202	0.00100	0.200	0	101	80	120			
Lithium	0.358	0.0100	0.200	0.175	91.7	80	120			
Molybdenum	0.197	0.00500	0.200	0	98.5	80	120			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_160304C

Sample ID <b>1603027-06A PDS</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 10:18:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.194	0.00500	0.200	0	96.9	80	120			
Thallium	0.200	0.00150	0.200	0	100	80	120			

Sample ID <b>1603027-06A MS</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 10:20:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	100	80	120			
Arsenic	0.201	0.00500	0.200	0	100	80	120			
Barium	0.242	0.0100	0.200	0.0359	103	80	120			
Beryllium	0.202	0.00100	0.200	0	101	80	120			
Cadmium	0.196	0.00100	0.200	0	97.9	80	120			
Calcium	298	0.300	5.00	298	-0.280	80	120			S
Chromium	0.202	0.00500	0.200	0	101	80	120			
Cobalt	0.201	0.00500	0.200	0.00398	98.4	80	120			
Lead	0.201	0.00100	0.200	0	101	80	120			
Lithium	0.379	0.0100	0.200	0.175	102	80	120			
Molybdenum	0.204	0.00500	0.200	0	102	80	120			
Selenium	0.199	0.00500	0.200	0	99.7	80	120			
Thallium	0.203	0.00150	0.200	0	101	80	120			

Sample ID <b>1603027-06A MSD</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 10:22:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	102	80	120	1.64	15	
Arsenic	0.206	0.00500	0.200	0	103	80	120	2.55	15	
Barium	0.243	0.0100	0.200	0.0359	104	80	120	0.291	15	
Beryllium	0.202	0.00100	0.200	0	101	80	120	0.190	15	
Cadmium	0.200	0.00100	0.200	0	100	80	120	2.07	15	
Calcium	310	0.300	5.00	298	227	80	120	3.73	15	S
Chromium	0.205	0.00500	0.200	0	102	80	120	1.48	15	
Cobalt	0.205	0.00500	0.200	0.00398	100	80	120	2.03	15	
Lead	0.205	0.00100	0.200	0	102	80	120	1.55	15	
Lithium	0.385	0.0100	0.200	0.175	105	80	120	1.52	15	
Molybdenum	0.206	0.00500	0.200	0	103	80	120	0.799	15	
Selenium	0.205	0.00500	0.200	0	102	80	120	2.62	15	
Thallium	0.207	0.00150	0.200	0	104	80	120	2.24	15	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160304C**

Sample ID <b>ICV2-160304</b>	Batch ID: <b>R84540</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 7:22:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0990	0.00250	0.100	0	99.0	90	110			
Arsenic	0.101	0.00500	0.100	0	101	90	110			
Barium	0.0993	0.0100	0.100	0	99.3	90	110			
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Cadmium	0.0986	0.00100	0.100	0	98.6	90	110			
Calcium	2.30	0.300	2.50	0	92.1	90	110			
Chromium	0.104	0.00500	0.100	0	104	90	110			
Cobalt	0.105	0.00500	0.100	0	105	90	110			
Lead	0.101	0.00100	0.100	0	101	90	110			
Lithium	0.102	0.0100	0.100	0	102	90	110			
Molybdenum	0.0968	0.00500	0.100	0	96.8	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.0988	0.00150	0.100	0	98.8	90	110			

Sample ID <b>ILCVL2-160304</b>	Batch ID: <b>R84540</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 7:27:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00199	0.00250	0.00200	0	99.4	70	130			
Arsenic	0.00514	0.00500	0.00500	0	103	70	130			
Barium	0.00517	0.0100	0.00500	0	103	70	130			
Beryllium	0.000955	0.00100	0.00100	0	95.5	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.107	0.300	0.100	0	107	70	130			
Chromium	0.00527	0.00500	0.00500	0	105	70	130			
Cobalt	0.00540	0.00500	0.00500	0	108	70	130			
Lead	0.000898	0.00100	0.00100	0	89.8	70	130			
Lithium	0.0113	0.0100	0.0100	0	113	70	130			
Molybdenum	0.00507	0.00500	0.00500	0	101	70	130			
Selenium	0.00580	0.00500	0.00500	0	116	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

Sample ID <b>CCV4-160304</b>	Batch ID: <b>R84540</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 9:40:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.198	0.00250	0.200	0	98.9	90	110			
Arsenic	0.203	0.00500	0.200	0	101	90	110			
Barium	0.202	0.0100	0.200	0	101	90	110			
Beryllium	0.218	0.00100	0.200	0	109	90	110			
Cadmium	0.205	0.00100	0.200	0	103	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_160304C

Sample ID <b>CCV4-160304</b>	Batch ID: <b>R84540</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 9:40:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.74	0.300	5.00	0	94.8	90	110			
Chromium	0.209	0.00500	0.200	0	105	90	110			
Cobalt	0.211	0.00500	0.200	0	106	90	110			
Lead	0.204	0.00100	0.200	0	102	90	110			
Lithium	0.221	0.0100	0.200	0	110	90	110			
Molybdenum	0.202	0.00500	0.200	0	101	90	110			
Selenium	0.203	0.00500	0.200	0	102	90	110			
Thallium	0.204	0.00150	0.200	0	102	90	110			

Sample ID <b>LCVL4-160304</b>	Batch ID: <b>R84540</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 9:44:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00198	0.00250	0.00200	0	99.2	70	130			
Arsenic	0.00505	0.00500	0.00500	0	101	70	130			
Barium	0.00518	0.0100	0.00500	0	104	70	130			
Beryllium	0.00120	0.00100	0.00100	0	120	70	130			
Cadmium	0.000971	0.00100	0.00100	0	97.1	70	130			
Calcium	0.0991	0.300	0.100	0	99.1	70	130			
Chromium	0.00527	0.00500	0.00500	0	105	70	130			
Cobalt	0.00536	0.00500	0.00500	0	107	70	130			
Lead	0.000888	0.00100	0.00100	0	88.8	70	130			
Lithium	0.0119	0.0100	0.0100	0	119	70	130			
Molybdenum	0.00506	0.00500	0.00500	0	101	70	130			
Selenium	0.00502	0.00500	0.00500	0	100	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID <b>CCV5-160304</b>	Batch ID: <b>R84540</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 10:24:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.3	90	110			
Arsenic	0.203	0.00500	0.200	0	101	90	110			
Barium	0.204	0.0100	0.200	0	102	90	110			
Beryllium	0.208	0.00100	0.200	0	104	90	110			
Cadmium	0.203	0.00100	0.200	0	101	90	110			
Calcium	4.77	0.300	5.00	0	95.3	90	110			
Chromium	0.206	0.00500	0.200	0	103	90	110			
Cobalt	0.208	0.00500	0.200	0	104	90	110			
Lead	0.203	0.00100	0.200	0	102	90	110			
Lithium	0.214	0.0100	0.200	0	107	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160304C**

Sample ID: <b>CCV5-160304</b>	Batch ID: <b>R84540</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 10:24:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.200	0.00500	0.200	0	99.8	90	110			
Selenium	0.202	0.00500	0.200	0	101	90	110			
Thallium	0.203	0.00150	0.200	0	101	90	110			

Sample ID: <b>LCVL5-160304</b>	Batch ID: <b>R84540</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160304C</b>	Analysis Date: <b>3/4/2016 10:28:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00203	0.00250	0.00200	0	101	70	130			
Arsenic	0.00514	0.00500	0.00500	0	103	70	130			
Barium	0.00511	0.0100	0.00500	0	102	70	130			
Beryllium	0.00102	0.00100	0.00100	0	102	70	130			
Cadmium	0.00102	0.00100	0.00100	0	102	70	130			
Calcium	0.0945	0.300	0.100	0	94.5	70	130			
Chromium	0.00530	0.00500	0.00500	0	106	70	130			
Cobalt	0.00536	0.00500	0.00500	0	107	70	130			
Lead	0.000903	0.00100	0.00100	0	90.3	70	130			
Lithium	0.0114	0.0100	0.0100	0	114	70	130			
Molybdenum	0.00504	0.00500	0.00500	0	101	70	130			
Selenium	0.00525	0.00500	0.00500	0	105	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160308B**

The QC data in batch 73987 applies to the following samples: 1603025-01A, 1603025-06A, 1603025-07A, 1603025-08A, 1603025-09A, 1603025-10A, 1603025-11A, 1603025-12A, 1603025-13A, 1603025-14A, 1603025-15A

Sample ID: <b>MB-73987</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 3:58:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID: <b>LCS-73987</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:00:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.195	0.00250	0.200	0	97.6	80	120			
Arsenic	0.198	0.00500	0.200	0	98.9	80	120			
Barium	0.196	0.0100	0.200	0	97.8	80	120			
Beryllium	0.210	0.00100	0.200	0	105	80	120			
Cadmium	0.193	0.00100	0.200	0	96.6	80	120			
Calcium	4.79	0.300	5.00	0	95.8	80	120			
Chromium	0.206	0.00500	0.200	0	103	80	120			
Cobalt	0.209	0.00500	0.200	0	104	80	120			
Lead	0.201	0.00100	0.200	0	101	80	120			
Lithium	0.213	0.0100	0.200	0	107	80	120			
Molybdenum	0.186	0.00500	0.200	0	93.1	80	120			
Selenium	0.198	0.00500	0.200	0	98.9	80	120			
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID: <b>LCSD-73987</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:02:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.3	80	120	1.69	15	
Arsenic	0.199	0.00500	0.200	0	99.4	80	120	0.455	15	
Barium	0.197	0.0100	0.200	0	98.7	80	120	0.903	15	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160308B**

Sample ID: <b>LCSD-73987</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:02:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.210	0.00100	0.200	0	105	80	120	0.261	15	
Cadmium	0.194	0.00100	0.200	0	97.1	80	120	0.478	15	
Calcium	4.81	0.300	5.00	0	96.1	80	120	0.377	15	
Chromium	0.207	0.00500	0.200	0	104	80	120	0.320	15	
Cobalt	0.210	0.00500	0.200	0	105	80	120	0.481	15	
Lead	0.201	0.00100	0.200	0	101	80	120	0.059	15	
Lithium	0.216	0.0100	0.200	0	108	80	120	1.21	15	
Molybdenum	0.188	0.00500	0.200	0	94.1	80	120	1.10	15	
Selenium	0.199	0.00500	0.200	0	99.3	80	120	0.471	15	
Thallium	0.201	0.00150	0.200	0	101	80	120	0.272	15	

Sample ID: <b>1603025-15A SD</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:08:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	<0.0100	0.0250	0	0.00963				0	10	
Barium	0.0981	0.0500	0	0.0984				0.245	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Calcium	21.7	1.50	0	21.6				0.560	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	0.0894	0.0500	0	0.0842				6.04	10	
Molybdenum	0.0102	0.0250	0	0.0102				0.295	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID: <b>1603025-15A PDS</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:28:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.190	0.00250	0.200	0	94.9	80	120			
Arsenic	0.202	0.00500	0.200	0.00963	96.2	80	120			
Barium	0.288	0.0100	0.200	0.0984	94.7	80	120			
Beryllium	0.207	0.00100	0.200	0	104	80	120			
Cadmium	0.186	0.00100	0.200	0	93.1	80	120			
Calcium	24.4	0.300	5.00	21.6	57.2	80	120			S
Chromium	0.205	0.00500	0.200	0	102	80	120			
Cobalt	0.205	0.00500	0.200	0	102	80	120			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160308B**

Sample ID <b>1603025-15A PDS</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:28:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.195	0.00100	0.200	0	97.5	80	120			
Lithium	0.288	0.0100	0.200	0.0842	102	80	120			
Molybdenum	0.192	0.00500	0.200	0.0102	91.0	80	120			
Selenium	0.190	0.00500	0.200	0	94.8	80	120			
Thallium	0.193	0.00150	0.200	0	96.4	80	120			

Sample ID <b>1603025-15A MS</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:30:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.204	0.00250	0.200	0	102	80	120			
Arsenic	0.209	0.00500	0.200	0.00963	99.5	80	120			
Barium	0.301	0.0100	0.200	0.0984	102	80	120			
Beryllium	0.210	0.00100	0.200	0	105	80	120			
Cadmium	0.197	0.00100	0.200	0	98.6	80	120			
Calcium	25.7	0.300	5.00	21.6	81.5	80	120			
Chromium	0.208	0.00500	0.200	0	104	80	120			
Cobalt	0.209	0.00500	0.200	0	104	80	120			
Lead	0.205	0.00100	0.200	0	102	80	120			
Lithium	0.298	0.0100	0.200	0.0842	107	80	120			
Molybdenum	0.202	0.00500	0.200	0.0102	96.0	80	120			
Selenium	0.194	0.00500	0.200	0	97.1	80	120			
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID <b>1603025-15A MSD</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:32:00 PM</b>	Prep Date: <b>3/4/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	99.9	80	120	1.99	15	
Arsenic	0.205	0.00500	0.200	0.00963	97.6	80	120	1.87	15	
Barium	0.292	0.0100	0.200	0.0984	97.0	80	120	3.05	15	
Beryllium	0.210	0.00100	0.200	0	105	80	120	0.190	15	
Cadmium	0.193	0.00100	0.200	0	96.7	80	120	1.94	15	
Calcium	25.4	0.300	5.00	21.6	76.9	80	120	0.903	15	S
Chromium	0.204	0.00500	0.200	0	102	80	120	1.57	15	
Cobalt	0.205	0.00500	0.200	0	102	80	120	1.97	15	
Lead	0.200	0.00100	0.200	0	100	80	120	2.12	15	
Lithium	0.295	0.0100	0.200	0.0842	106	80	120	1.09	15	
Molybdenum	0.198	0.00500	0.200	0.0102	93.9	80	120	2.13	15	
Selenium	0.194	0.00500	0.200	0	97.2	80	120	0.151	15	
Thallium	0.199	0.00150	0.200	0	99.6	80	120	1.57	15	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160308B**

Sample ID <b>ICV-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 12:08:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0991	0.00250	0.100	0	99.1	90	110			
Arsenic	0.100	0.00500	0.100	0	100	90	110			
Barium	0.0966	0.0100	0.100	0	96.6	90	110			
Beryllium	0.102	0.00100	0.100	0	102	90	110			
Cadmium	0.0955	0.00100	0.100	0	95.5	90	110			
Calcium	2.29	0.300	2.50	0	91.7	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.106	0.00500	0.100	0	106	90	110			
Lead	0.102	0.00100	0.100	0	102	90	110			
Lithium	0.101	0.0100	0.100	0	101	90	110			
Molybdenum	0.0929	0.00500	0.100	0	92.9	90	110			
Selenium	0.103	0.00500	0.100	0	103	90	110			
Thallium	0.101	0.00150	0.100	0	101	90	110			

Sample ID <b>LCVL-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 12:12:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00201	0.00250	0.00200	0	100	70	130			
Arsenic	0.00514	0.00500	0.00500	0	103	70	130			
Barium	0.00494	0.0100	0.00500	0	98.7	70	130			
Beryllium	0.00103	0.00100	0.00100	0	103	70	130			
Cadmium	0.000953	0.00100	0.00100	0	95.3	70	130			
Calcium	0.103	0.300	0.100	0	103	70	130			
Chromium	0.00529	0.00500	0.00500	0	106	70	130			
Cobalt	0.00532	0.00500	0.00500	0	106	70	130			
Lead	0.000992	0.00100	0.00100	0	99.2	70	130			
Lithium	0.0103	0.0100	0.0100	0	103	70	130			
Molybdenum	0.00478	0.00500	0.00500	0	95.6	70	130			
Selenium	0.00523	0.00500	0.00500	0	105	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID <b>CCV4-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 3:17:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	100	90	110			
Arsenic	0.200	0.00500	0.200	0	99.9	90	110			
Barium	0.200	0.0100	0.200	0	100	90	110			
Beryllium	0.215	0.00100	0.200	0	108	90	110			
Cadmium	0.199	0.00100	0.200	0	99.6	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160308B**

Sample ID <b>CCV4-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 3:17:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.89	0.300	5.00	0	97.9	90	110			
Chromium	0.211	0.00500	0.200	0	106	90	110			
Cobalt	0.213	0.00500	0.200	0	107	90	110			
Lead	0.206	0.00100	0.200	0	103	90	110			
Molybdenum	0.192	0.00500	0.200	0	96.2	90	110			
Selenium	0.198	0.00500	0.200	0	98.8	90	110			
Thallium	0.206	0.00150	0.200	0	103	90	110			

Sample ID <b>CCV4-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 3:43:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.219	0.0100	0.200	0	109	90	110			

Sample ID <b>LCVL4-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 3:53:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00199	0.00250	0.00200	0	99.4	70	130			
Arsenic	0.00499	0.00500	0.00500	0	99.8	70	130			
Barium	0.00498	0.0100	0.00500	0	99.6	70	130			
Beryllium	0.000932	0.00100	0.00100	0	93.2	70	130			
Cadmium	0.000914	0.00100	0.00100	0	91.4	70	130			
Calcium	0.0981	0.300	0.100	0	98.1	70	130			
Chromium	0.00524	0.00500	0.00500	0	105	70	130			
Cobalt	0.00522	0.00500	0.00500	0	104	70	130			
Lead	0.000938	0.00100	0.00100	0	93.8	70	130			
Lithium	0.0116	0.0100	0.0100	0	116	70	130			
Molybdenum	0.00473	0.00500	0.00500	0	94.5	70	130			
Selenium	0.00469	0.00500	0.00500	0	93.8	70	130			
Thallium	0.00100	0.00150	0.00100	0	100	70	130			

Sample ID <b>CCV5-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:34:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.195	0.00250	0.200	0	97.6	90	110			
Arsenic	0.198	0.00500	0.200	0	98.8	90	110			
Barium	0.198	0.0100	0.200	0	99.0	90	110			
Beryllium	0.208	0.00100	0.200	0	104	90	110			
Cadmium	0.194	0.00100	0.200	0	96.9	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160308B**

Sample ID <b>CCV5-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:34:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.74	0.300	5.00	0	94.9	90	110			
Chromium	0.207	0.00500	0.200	0	103	90	110			
Cobalt	0.208	0.00500	0.200	0	104	90	110			
Lead	0.201	0.00100	0.200	0	101	90	110			
Lithium	0.221	0.0100	0.200	0	110	90	110			
Molybdenum	0.185	0.00500	0.200	0	92.6	90	110			
Selenium	0.197	0.00500	0.200	0	98.6	90	110			
Thallium	0.201	0.00150	0.200	0	101	90	110			

Sample ID <b>LCVL5-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:52:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00203	0.00250	0.00200	0	102	70	130			
Arsenic	0.00506	0.00500	0.00500	0	101	70	130			
Barium	0.00501	0.0100	0.00500	0	100	70	130			
Beryllium	0.00114	0.00100	0.00100	0	114	70	130			
Cadmium	0.000965	0.00100	0.00100	0	96.5	70	130			
Calcium	0.0993	0.300	0.100	0	99.3	70	130			
Chromium	0.00537	0.00500	0.00500	0	107	70	130			
Cobalt	0.00538	0.00500	0.00500	0	108	70	130			
Lead	0.000931	0.00100	0.00100	0	93.1	70	130			
Lithium	0.0117	0.0100	0.0100	0	117	70	130			
Molybdenum	0.00478	0.00500	0.00500	0	95.6	70	130			
Selenium	0.00506	0.00500	0.00500	0	101	70	130			
Thallium	0.000984	0.00150	0.00100	0	98.4	70	130			

Sample ID <b>CCV6-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:58:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.187	0.00250	0.200	0	93.6	90	110			
Arsenic	0.191	0.00500	0.200	0	95.4	90	110			
Barium	0.189	0.0100	0.200	0	94.3	90	110			
Beryllium	0.198	0.00100	0.200	0	99.2	90	110			
Cadmium	0.185	0.00100	0.200	0	92.3	90	110			
Chromium	0.195	0.00500	0.200	0	97.3	90	110			
Cobalt	0.200	0.00500	0.200	0	99.8	90	110			
Lead	0.192	0.00100	0.200	0	95.8	90	110			
Lithium	0.208	0.0100	0.200	0	104	90	110			
Selenium	0.190	0.00500	0.200	0	95.1	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160308B**

Sample ID: <b>CCV6-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 4:58:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.192	0.00150	0.200	0	95.9	90	110			

Sample ID: <b>LCVL6-160308</b>	Batch ID: <b>R84589</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160308B</b>	Analysis Date: <b>3/8/2016 5:02:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00205	0.00250	0.00200	0	103	70	130			
Arsenic	0.00513	0.00500	0.00500	0	103	70	130			
Barium	0.00494	0.0100	0.00500	0	98.9	70	130			
Beryllium	0.00107	0.00100	0.00100	0	107	70	130			
Cadmium	0.000934	0.00100	0.00100	0	93.4	70	130			
Chromium	0.00539	0.00500	0.00500	0	108	70	130			
Cobalt	0.00534	0.00500	0.00500	0	107	70	130			
Lead	0.000951	0.00100	0.00100	0	95.1	70	130			
Lithium	0.0120	0.0100	0.0100	0	120	70	130			
Selenium	0.00484	0.00500	0.00500	0	96.8	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160309C**

The QC data in batch 73964 applies to the following samples: 1603025-02A, 1603025-03A, 1603025-04A, 1603025-05A

Sample ID <b>1603027-06A SD</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160309C</b>	Analysis Date: <b>3/9/2016 2:16:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	307	75.0	0	300				2.20	10	

Sample ID <b>1603027-06A PDS</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160309C</b>	Analysis Date: <b>3/9/2016 2:36:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	530	15.0	250	301	91.8	80	120			

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	DF Dilution Factor	
	J Analyte detected between MDL and RL	MDL Method Detection Limit	
	ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits	
	RL Reporting Limit	S Spike Recovery outside control limits	
	J Analyte detected between SDL and RL	N Parameter not NELAC certified	

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160309C**

Sample ID <b>ICV-160309</b>	Batch ID: <b>R84620</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160309C</b>	Analysis Date: <b>3/9/2016 12:15:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	2.34	0.300	2.50	0	93.5	90	110			
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Sample ID <b>LCVL-160309</b>	Batch ID: <b>R84620</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160309C</b>	Analysis Date: <b>3/9/2016 12:25:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.103	0.300	0.100	0	103	70	130			
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Sample ID <b>CCV2-160309</b>	Batch ID: <b>R84620</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160309C</b>	Analysis Date: <b>3/9/2016 1:53:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.81	0.300	5.00	0	96.3	90	110			
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Sample ID <b>LCVL2-160309</b>	Batch ID: <b>R84620</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160309C</b>	Analysis Date: <b>3/9/2016 2:05:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.105	0.300	0.100	0	105	70	130			
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Sample ID <b>CCV3-160309</b>	Batch ID: <b>R84620</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160309C</b>	Analysis Date: <b>3/9/2016 2:38:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.86	0.300	5.00	0	97.1	90	110			
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Sample ID <b>LCVL3-160309</b>	Batch ID: <b>R84620</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160309C</b>	Analysis Date: <b>3/9/2016 2:45:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.101	0.300	0.100	0	101	70	130			
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**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160314A**

The QC data in batch 73964 applies to the following samples: 1603025-02A, 1603025-03A, 1603025-04A, 1603025-05A

Sample ID <b>MB-73964</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 12:57:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron <0.0100 0.0300

Sample ID <b>LCS-73964</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 12:59:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.200 0.0300 0.200 0 99.9 80 120

Sample ID <b>LCSD-73964</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 1:01:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.199 0.0300 0.200 0 99.7 80 120 0.200 15

Sample ID <b>1603027-06A SD</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 1:07:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.705 0.150 0 0.639 9.83 10

Sample ID <b>1603027-06A PDS</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 1:21:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.821 0.0300 0.200 0.639 91.3 80 120

Sample ID <b>1603027-06A MS</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 1:23:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.855 0.0300 0.200 0.639 108 80 120

Sample ID <b>1603027-06A MSD</b>	Batch ID: <b>73964</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 1:25:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.849 0.0300 0.200 0.639 105 80 120 0.645 15

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|--|---|
| <p><b>Qualifiers:</b></p> <ul style="list-style-type: none"> <li>B Analyte detected in the associated Method Blank</li> <li>J Analyte detected between MDL and RL</li> <li>ND Not Detected at the Method Detection Limit</li> <li>RL Reporting Limit</li> <li>J Analyte detected between SDL and RL</li> </ul> | <ul style="list-style-type: none"> <li>DF Dilution Factor</li> <li>MDL Method Detection Limit</li> <li>R RPD outside accepted control limits</li> <li>S Spike Recovery outside control limits</li> <li>N Parameter not NELAC certified</li> </ul> |
|--|---|

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160314A**

Sample ID <b>ICV-160314</b>	Batch ID: <b>R84681</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 10:58:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.101	0.0300	0.100	0	101	90	110			
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Sample ID <b>LCVL-160314</b>	Batch ID: <b>R84681</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 11:02:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0185	0.0300	0.0200	0	92.6	70	130			
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Sample ID <b>CCV2-160314</b>	Batch ID: <b>R84681</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 12:44:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.203	0.0300	0.200	0	101	90	110			
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Sample ID <b>LCVL2-160314</b>	Batch ID: <b>R84681</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 12:50:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0257	0.0300	0.0200	0	129	70	130			
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Sample ID <b>CCV3-160314</b>	Batch ID: <b>R84681</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 1:35:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.198	0.0300	0.200	0	99.2	90	110			
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Sample ID <b>LCVL3-160314</b>	Batch ID: <b>R84681</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160314A</b>	Analysis Date: <b>3/14/2016 1:47:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0237	0.0300	0.0200	0	118	70	130			
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**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160316A**

The QC data in batch 73987 applies to the following samples: 1603025-01A, 1603025-06A, 1603025-07A, 1603025-08A, 1603025-09A, 1603025-10A, 1603025-11A, 1603025-12A, 1603025-13A, 1603025-14A, 1603025-15A

Sample ID <b>MB-73987</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:13:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron <0.0100 0.0300

Sample ID <b>LCS-73987</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:15:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.196 0.0300 0.200 0 98.1 80 120

Sample ID <b>LCSD-73987</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:17:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.203 0.0300 0.200 0 101 80 120 3.22 15

Sample ID <b>1603025-15A SD</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:23:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.294 0.150 0 0.242 19.8 10 R

Sample ID <b>1603025-15A PDS</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:43:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.448 0.0300 0.200 0.242 103 80 120

Sample ID <b>1603025-15A MS</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:45:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.454 0.0300 0.200 0.242 106 80 120

Sample ID <b>1603025-15A MSD</b>	Batch ID: <b>73987</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:47:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.460 0.0300 0.200 0.242 109 80 120 1.39 15

**Qualifiers:** B Analyte detected in the associated Method Blank  
J Analyte detected between MDL and RL  
ND Not Detected at the Method Detection Limit  
RL Reporting Limit  
J Analyte detected between SDL and RL  
DF Dilution Factor  
MDL Method Detection Limit  
R RPD outside accepted control limits  
S Spike Recovery outside control limits  
N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160316A**

Sample ID <b>ICV-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 10:56:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.101	0.0100	0.100	0	101	90	110			
Boron	0.105	0.0300	0.100	0	105	90	110			
Calcium	2.34	0.300	2.50	0	93.6	90	110			
Molybdenum	0.0986	0.00500	0.100	0	98.6	90	110			

Sample ID <b>LCVL-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:07:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00520	0.0100	0.00500	0	104	70	130			
Boron	0.0222	0.0300	0.0200	0	111	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			
Molybdenum	0.00503	0.00500	0.00500	0	101	70	130			

Sample ID <b>CCV1-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 11:53:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.207	0.0100	0.200	0	103	90	110			
Calcium	4.77	0.300	5.00	0	95.3	90	110			
Molybdenum	0.204	0.00500	0.200	0	102	90	110			

Sample ID <b>CCV1-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 12:08:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.210	0.0300	0.200	0	105	90	110			

Sample ID <b>LCVL1-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 12:27:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00498	0.0100	0.00500	0	99.5	70	130			
Boron	0.0209	0.0300	0.0200	0	105	70	130			
Calcium	0.108	0.300	0.100	0	108	70	130			
Molybdenum	0.00497	0.00500	0.00500	0	99.5	70	130			

Sample ID <b>CCV2-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 1:01:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160316A**

Sample ID <b>CCV2-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 1:01:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.68	0.300	5.00	0	93.5	90	110			
Molybdenum	0.196	0.00500	0.200	0	98.1	90	110			

Sample ID <b>CCV2-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 1:29:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.214	0.0300	0.200	0	107	90	110			

Sample ID <b>LCVL2-160316</b>	Batch ID: <b>R84718</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160316A</b>	Analysis Date: <b>3/16/2016 1:43:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0211	0.0300	0.0200	0	106	70	130			
Calcium	0.107	0.300	0.100	0	107	70	130			
Molybdenum	0.00491	0.00500	0.00500	0	98.2	70	130			

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_160308A**

The QC data in batch 74023 applies to the following samples: 1603025-01D, 1603025-02D, 1603025-03D, 1603025-04D, 1603025-05D, 1603025-06D, 1603025-07D, 1603025-08D, 1603025-09D, 1603025-10D, 1603025-11D, 1603025-12D, 1603025-13D, 1603025-14D, 1603025-15D

Sample ID <b>MB-74023</b>	Batch ID: <b>74023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 9:05:16 AM</b>	Prep Date: <b>3/8/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-74023</b>	Batch ID: <b>74023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 9:19:53 AM</b>	Prep Date: <b>3/8/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.63	1.00	10.00	0	96.3	90	110			
Fluoride	3.66	0.400	4.000	0	91.6	90	110			
Sulfate	30.5	3.00	30.00	0	102	90	110			

Sample ID <b>LCS-74023</b>	Batch ID: <b>74023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 9:34:29 AM</b>	Prep Date: <b>3/8/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.65	1.00	10.00	0	96.5	90	110	0.204	20	
Fluoride	3.77	0.400	4.000	0	94.2	90	110	2.88	20	
Sulfate	30.7	3.00	30.00	0	102	90	110	0.612	20	

Sample ID <b>1603025-10DMS</b>	Batch ID: <b>74023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 4:37:32 PM</b>	Prep Date: <b>3/8/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	267	10.0	200.0	60.62	103	90	110			
Fluoride	203	4.00	200.0	0	102	90	110			
Sulfate	331	30.0	200.0	110.2	110	90	110			

Sample ID <b>1603025-10DMSD</b>	Batch ID: <b>74023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 4:52:08 PM</b>	Prep Date: <b>3/8/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	265	10.0	200.0	60.62	102	90	110	0.749	20	
Fluoride	203	4.00	200.0	0	102	90	110	0.199	20	
Sulfate	327	30.0	200.0	110.2	109	90	110	1.19	20	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_160308A**

Sample ID: <b>1603025-11DMS</b>	Batch ID: <b>74023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 5:06:45 PM</b>	Prep Date: <b>3/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	223	10.0	200.0	19.88	102	90	110			
Fluoride	203	4.00	200.0	0	102	90	110			
Sulfate	408	30.0	200.0	190.9	109	90	110			

Sample ID: <b>1603025-11DMSD</b>	Batch ID: <b>74023</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/9/2016 8:49:23 AM</b>	Prep Date: <b>3/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	216	10.0	200.0	19.88	98.2	90	110	3.19	20	
Fluoride	199	4.00	200.0	0	99.7	90	110	1.98	20	
Sulfate	402	30.0	200.0	190.9	105	90	110	1.63	20	

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<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_160308A**

Sample ID <b>ICV-160308</b>	Batch ID: <b>R84621</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 8:33:33 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	23.7	1.00	25.00	0	94.9	90	110			
Fluoride	9.74	0.400	10.00	0	97.4	90	110			
Sulfate	75.4	3.00	75.00	0	101	90	110			

Sample ID <b>CCV1-160308</b>	Batch ID: <b>R84621</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 12:25:19 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.70	1.00	10.00	0	97.0	90	110			
Fluoride	3.96	0.400	4.000	0	98.9	90	110			
Sulfate	30.6	3.00	30.00	0	102	90	110			

Sample ID <b>CCV2-160308</b>	Batch ID: <b>R84621</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/8/2016 3:43:37 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.75	1.00	10.00	0	97.5	90	110			
Fluoride	4.03	0.400	4.000	0	101	90	110			
Sulfate	31.1	3.00	30.00	0	104	90	110			

Sample ID <b>CCV3-160308</b>	Batch ID: <b>R84621</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_160308A</b>	Analysis Date: <b>3/9/2016 11:30:07 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.73	1.00	10.00	0	97.3	90	110			
Fluoride	3.86	0.400	4.000	0	96.4	90	110			
Sulfate	30.4	3.00	30.00	0	101	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_160303A**

The QC data in batch 73973 applies to the following samples: 1603025-01D, 1603025-02D, 1603025-03D, 1603025-04D, 1603025-05D, 1603025-06D, 1603025-07D, 1603025-08D, 1603025-09D, 1603025-10D, 1603025-11D, 1603025-12D, 1603025-13D, 1603025-14D, 1603025-15D

Sample ID: <b>1603021-01D-DUP</b>	Batch ID: <b>73973</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@11.4°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_160303A</b>	Analysis Date: <b>3/3/2016 11:22:00 AM</b>	Prep Date: <b>3/3/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.72	0	0	7.700				0.259	5	

Sample ID: <b>1603025-06D-DUP</b>	Batch ID: <b>73973</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@14.5°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_160303A</b>	Analysis Date: <b>3/3/2016 11:47:00 AM</b>	Prep Date: <b>3/3/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.24	0	0	6.200				0.643	5	

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit RL Reporting Limit J Analyte detected between SDL and RL	DF Dilution Factor MDL Method Detection Limit R RPD outside accepted control limits S Spike Recovery outside control limits N Parameter not NELAC certified
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_160303A**

Sample ID <b>ICV-160303</b>	Batch ID: <b>R84491</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.8°C</b>							
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_160303A</b>	Analysis Date: <b>3/3/2016 11:10:00 AM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	9.98	0	10.00	0	99.8	99	101			
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Sample ID <b>CCV1-160303</b>	Batch ID: <b>R84491</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@20.8°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160303A</b>	Analysis Date: <b>3/3/2016 11:42:00 AM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	7.01	0	7.000	0	100	97.1	102.9			
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Sample ID <b>CCV2-160303</b>	Batch ID: <b>R84491</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@20.6°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160303A</b>	Analysis Date: <b>3/3/2016 12:09:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	7.01	0	7.000	0	100	97.1	102.9			
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Sample ID <b>CCV3-160303</b>	Batch ID: <b>R84491</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.2°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160303A</b>	Analysis Date: <b>3/3/2016 12:36:00 PM</b>	Prep Date: <b>3/3/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	7.01	0	7.000	0	100	97.1	102.9			
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<b>Qualifiers:</b>	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_160304C**

The QC data in batch 73991 applies to the following samples: 1603025-01D, 1603025-02D, 1603025-03D, 1603025-04D, 1603025-05D, 1603025-06D, 1603025-07D, 1603025-08D, 1603025-09D, 1603025-10D

Sample ID <b>MB-73991</b>	Batch ID: <b>73991</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_160304C</b>	Analysis Date: <b>3/7/2016 9:05:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-73991</b>	Batch ID: <b>73991</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_160304C</b>	Analysis Date: <b>3/7/2016 9:05:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	771	10.0	745.6	0	103	90	113			

Sample ID <b>1603013-05D-DUP</b>	Batch ID: <b>73991</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160304C</b>	Analysis Date: <b>3/7/2016 9:05:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	1640	50.0	0	1740				6.22	5	R

Sample ID <b>1603025-01D-DUP</b>	Batch ID: <b>73991</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160304C</b>	Analysis Date: <b>3/7/2016 9:05:00 AM</b>	Prep Date: <b>3/4/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	572	10.0	0	600.0				4.78	5	

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|--|---|
| <p><b>Qualifiers:</b></p> <ul style="list-style-type: none"> <li>B Analyte detected in the associated Method Blank</li> <li>J Analyte detected between MDL and RL</li> <li>ND Not Detected at the Method Detection Limit</li> <li>RL Reporting Limit</li> <li>J Analyte detected between SDL and RL</li> </ul> | <ul style="list-style-type: none"> <li>DF Dilution Factor</li> <li>MDL Method Detection Limit</li> <li>R RPD outside accepted control limits</li> <li>S Spike Recovery outside control limits</li> <li>N Parameter not NELAC certified</li> </ul> |
|--|---|

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1603025  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_160307B**

The QC data in batch 74014 applies to the following samples: 1603025-11D, 1603025-12D, 1603025-13D, 1603025-14D, 1603025-15D

Sample ID <b>MB-74014</b>	Batch ID: <b>74014</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_160307B</b>	Analysis Date: <b>3/7/2016 9:05:00 AM</b>	Prep Date: <b>3/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-74014</b>	Batch ID: <b>74014</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_160307B</b>	Analysis Date: <b>3/7/2016 9:05:00 AM</b>	Prep Date: <b>3/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	768	10.0	745.6	0	103	90	113			

Sample ID <b>1603021-05D-DUP</b>	Batch ID: <b>74014</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160307B</b>	Analysis Date: <b>3/7/2016 9:05:00 AM</b>	Prep Date: <b>3/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	2240	50.0	0	2360				5.22	5	

Sample ID <b>1603062-01C-DUP</b>	Batch ID: <b>74014</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160307B</b>	Analysis Date: <b>3/7/2016 9:05:00 AM</b>	Prep Date: <b>3/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	12200	200	0	12620				3.71	5	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



March 29, 2016

Mr. John DuPont  
DHL Analytical  
2300 Double Creek Drive  
Round Rock, Texas 78664

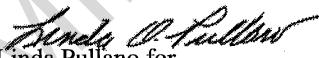
Re: Routine Analysis  
Work Order: 392603

Dear Mr. DuPont:

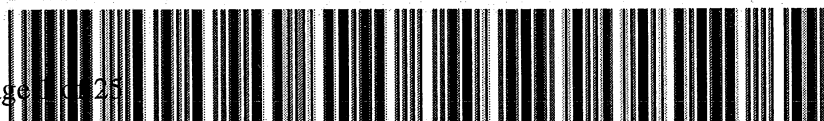
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 04, 2016. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4707.

Sincerely,

  
Linda Pullano for  
Anna Day  
Project Manager

Purchase Order: 14285  
Enclosures





## GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

### Certificate of Analysis Report for

DHLA002 DHL Analytical

Client SDG: 392603 GEL Work Order: 392603

**The Qualifiers in this report are defined as follows:**

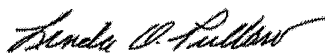
- \* A quality control analyte recovery is outside of specified acceptance criteria
- \*\* Analyte is a Tracer compound
- \*\* Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Anna Day.

Reviewed by



# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
 Address : 2300 Double Creek Drive  
 Round Rock, Texas 78664  
 Contact: Mr. John DuPont  
 Project: Routine Analysis

Client Sample ID: AMW-13	Project: DHLA00112
Sample ID: 392603001	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 07:50	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.19	+/-0.947	1.52	3.00	pCi/L		AXM6	03/28/16	1654	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226	U	0.316	+/-0.231	0.324	1.00	pCi/L		CXP3	03/23/16	0730	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			94.5	(15%-125%)

**Notes:**  
 Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-14	Project: DHLA00112
Sample ID: 392603002	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 08:45	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		4.22	+/-1.45	1.97	3.00	pCi/L		AXM6	03/28/16	1654	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.82	+/-0.460	0.402	1.00	pCi/L		CXP3	03/23/16	0730	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			91.6	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-23	Project: DHLA00112
Sample ID: 392603003	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 09:35	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.42	+/-0.966	1.49	3.00	pCi/L		AXM6	03/28/16	1654	1551925	1
Rad Radium-226 Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.855	+/-0.363	0.432	1.00	pCi/L		CXP3	03/23/16	0730	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			86.7	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-22	Project: DHLA00112
Sample ID: 392603004	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 10:30	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		1.67	+/-0.993	1.50	3.00	pCi/L		AXM6	03/28/16	1654	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.711	+/-0.339	0.397	1.00	pCi/L		CXP3	03/23/16	0800	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			91.5	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont

Project: Routine Analysis

Client Sample ID: AMW-20	Project: DHLA00112
Sample ID: 392603005	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 11:20	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liquid "As Received"											
Radium-228	U	1.52	+/-1.01	1.57	3.00	pCi/L		AXM6	03/28/16	1654 1551925	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		0.794	+/-0.282	0.224	1.00	pCi/L		CXP3	03/23/16	0800 1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			97.9	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
 Address : 2300 Double Creek Drive  
 Round Rock, Texas 78664  
 Contact: Mr. John DuPont  
 Project: Routine Analysis

Client Sample ID: AMW-10	Project: DHLA00112
Sample ID: 392603006	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 13:20	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time Batch	Method
Rad Gas Flow Proportional Counting GFPC, Ra228, Liquid "As Received"											
Radium-228		3.26	+/-1.28	1.70	3.00	pCi/L		AXM6	03/28/16	1654 1551925	1
Rad Radium-226 Lucas Cell, Ra226, liquid "As Received"											
Radium-226		3.14	+/-0.577	0.397	1.00	pCi/L		CXP3	03/23/16	0800 1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			76.1	(15%-125%)

**Notes:**  
 Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: AMW-21	Project: DHLA00112
Sample ID: 392603007	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 14:30	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liquid "As Received"											
Radium-228		2.28	+/-1.28	1.83	3.00	pCi/L		AXM6	03/28/16	1654 1551925	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		3.04	+/-0.523	0.272	1.00	pCi/L		CXP3	03/23/16	0800 1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			59.3	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



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## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: FMW-4R	Project: DHLA00112
Sample ID: 392603008	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 15:30	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		1.87	+/-1.04	1.55	3.00	pCi/L		AXM6	03/28/16	1654	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.562	+/-0.343	0.478	1.00	pCi/L		CXP3	03/23/16	0830	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			99.3	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
 Address : 2300 Double Creek Drive  
 Round Rock, Texas 78664  
 Contact: Mr. John DuPont  
 Project: Routine Analysis

Client Sample ID: BAP-58	Project: DHLA00112
Sample ID: 392603009	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 16:50	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liquid "As Received"											
Radium-228		1.91	+/-1.03	1.52	3.00	pCi/L		AXM6	03/28/16	1652 1551925	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		0.898	+/-0.354	0.356	1.00	pCi/L		CXP3	03/23/16	0830 1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			93.7	(15%-125%)

**Notes:**  
 Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-63	Project: DHLA00112
Sample ID: 392603010	Client ID: DHLA002
Matrix: Water	
Collect Date: 29-FEB-16 17:45	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.377	+/-0.835	1.49	3.00	pCi/L		AXM6	03/28/16	1654	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.922	+/-0.400	0.481	1.00	pCi/L		CXP3	03/23/16	0830	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			89.8	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-62	Project: DHLA00112
Sample ID: 392603011	Client ID: DHLA002
Matrix: Water	
Collect Date: 01-MAR-16 07:40	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time Batch	Method
Rad Gas Flow Proportional Counting											
GFPC, Ra228, Liquid "As Received"											
Radium-228	U	1.28	+/-1.03	1.67	3.00	pCi/L		AXM6	03/28/16	1652 1551925	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		1.28	+/-0.384	0.376	1.00	pCi/L		CXP3	03/23/16	0830 1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			99.5	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-61	Project: DHLA00112
Sample ID: 392603012	Client ID: DHLA002
Matrix: Water	
Collect Date: 01-MAR-16 08:30	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.378	+/-0.861	1.54	3.00	pCi/L		AXM6	03/28/16	1652	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.440	+/-0.263	0.352	1.00	pCi/L		CXP3	03/23/16	0900	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			93	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-60	Project: DHLA00112
Sample ID: 392603013	Client ID: DHLA002
Matrix: Water	
Collect Date: 01-MAR-16 09:20	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	0.0816	+/-0.932	1.70	3.00	pCi/L		AXM6	03/28/16	1654	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.685	+/-0.365	0.481	1.00	pCi/L		CXP3	03/23/16	0900	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			95.7	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-59	Project: DHLA00112
Sample ID: 392603014	Client ID: DHLA002
Matrix: Water	
Collect Date: 01-MAR-16 10:15	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228		1.62	+/-0.965	1.44	3.00	pCi/L		AXM6	03/28/16	1652	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.544	+/-0.299	0.400	1.00	pCi/L		CXP3	03/23/16	0900	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			92.1	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

# GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

Report Date: March 29, 2016

Company : DHL Analytical  
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont  
Project: Routine Analysis

Client Sample ID: BAP-57	Project: DHLA00112
Sample ID: 392603015	Client ID: DHLA002
Matrix: Water	
Collect Date: 01-MAR-16 11:05	
Receive Date: 04-MAR-16	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gas Flow Proportional Counting												
GFPC, Ra228, Liquid "As Received"												
Radium-228	U	1.03	+/-0.952	1.56	3.00	pCi/L		AXM6	03/28/16	1652	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.866	+/-0.285	0.213	1.00	pCi/L		CXP3	03/23/16	0900	1550122	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 904.0/SW846 9320 Modified	
2	EPA 903.1 Modified	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC, Ra228, Liquid "As Received"			96.8	(15%-125%)

**Notes:**  
Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).



# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Report Date: March 29, 2016

Page 1 of 2

**DHL Analytical**  
**2300 Double Creek Drive**  
**Round Rock, Texas**

**Contact: Mr. John DuPont**

**Workorder: 392603**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
<b>Rad Gas Flow</b>											
Batch	1551925										
QC1203507508	392603008	DUP									
Radium-228		1.87	U	0.504	pCi/L	115*		(0% - 100%)	AXM6	03/28/16	16:54
	Uncertainty	+/-1.04		+/-0.939							
QC1203507509	LCS										
Radium-228		46.9		36.6	pCi/L		77.9	(75%-125%)		03/28/16	16:52
	Uncertainty			+/-2.89							
QC1203507507	MB										
Radium-228			U	-0.538	pCi/L					03/28/16	16:54
	Uncertainty			+/-0.828							
<b>Rad Ra-226</b>											
Batch	1550122										
QC1203502888	392549001	DUP									
Radium-226		1.79		1.59	pCi/L	12.3		(0% - 100%)	CXP3	03/23/16	09:35
	Uncertainty	+/-0.567		+/-0.461							
QC1203502890	LCS										
Radium-226		24.4		24.4	pCi/L		100	(75%-125%)		03/23/16	09:35
	Uncertainty			+/-1.51							
QC1203502887	MB										
Radium-226			U	0.167	pCi/L					03/23/16	09:35
	Uncertainty			+/-0.173							
QC1203502889	392549001	MS									
Radium-226		122	1.79	107	pCi/L		86.4	(75%-125%)		03/23/16	09:35
	Uncertainty	+/-0.567		+/-7.59							

**Notes:**

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

- \*\* Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.
- H Analytical holding time was exceeded
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- M M if above MDC and less than LLD
- M REMP Result > MDC/CL and < RDL
- N/A RPD or %Recovery limits do not apply.

# GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

## QC Summary

Workorder: 392603

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
N1	See case narrative									
ND	Analyte concentration is not detected above the detection limit									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
R	Sample results are rejected									
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.									
UI	Gamma Spectroscopy--Uncertain identification									
UJ	Gamma Spectroscopy--Uncertain identification									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
h	Preparation or preservation holding time was exceeded									

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

\* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

There are no "Data Exception Reports" associated with this analytical report.

LUMINANT

DHL Analytical, Inc.

2300 Double Creek Drive  
Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1603025

392603

# CHAIN-OF-CUSTODY RECORD

**Subcontractor:**

GEL Laboratories  
PO Box 30712  
Charleston, SC 29417

TEL: (843) 556-8171

FAX:


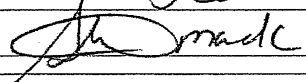
Acct #:

02-Mar-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E903.1	E904.0				
AMW-13	Aqueous	-01B	02/29/16 07:50 AM	500HDPEHNO3		1				
AMW-13	Aqueous	-01C	02/29/16 07:50 AM	500HDPEHNO3	1					
AMW-14	Aqueous	-02B	02/29/16 08:45 AM	500HDPEHNO3		1				
AMW-14	Aqueous	-02C	02/29/16 08:45 AM	500HDPEHNO3	1					
AMW-23	Aqueous	-03B	02/29/16 09:35 AM	500HDPEHNO3		1				
AMW-23	Aqueous	-03C	02/29/16 09:35 AM	500HDPEHNO3	1					
AMW-22	Aqueous	-04B	02/29/16 10:30 AM	500HDPEHNO3		1				
AMW-22	Aqueous	-04C	02/29/16 10:30 AM	500HDPEHNO3	1					
AMW-20	Aqueous	-05B	02/29/16 11:20 AM	500HDPEHNO3		1				
AMW-20	Aqueous	-05C	02/29/16 11:20 AM	500HDPEHNO3	1					
AMW-10	Aqueous	-06B	02/29/16 01:20 PM	500HDPEHNO3		1				
AMW-10	Aqueous	-06C	02/29/16 01:20 PM	500HDPEHNO3	1					
AMW-21	Aqueous	-07B	02/29/16 02:30 PM	500HDPEHNO3		1				
AMW-21	Aqueous	-07C	02/29/16 02:30 PM	500HDPEHNO3	1					
FMW-4R	Aqueous	-08B	02/29/16 03:30 PM	500HDPEHNO3		1				
FMW-4R	Aqueous	-08C	02/29/16 03:30 PM	500HDPEHNO3	1					
BAP-58	Aqueous	-09B	02/29/16 04:50 PM	500HDPEHNO3		1				
BAP-58	Aqueous	-09C	02/29/16 04:50 PM	500HDPEHNO3	1					

**General Comments:**

Please analyze these samples with a Standard Turnaround Time.  
Call John DuPont if you have questions.  
Quality Control Package Needed: Standard / \_\_\_\_\_  
EMAIL report to both cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: <u></u>	Date/Time: <u>3/2/16 1730</u>	Received by: <u>Jed ex</u>	Date/Time: <u>3/2/16 1730</u>
Relinquished by: _____	Date/Time: _____	Received by: <u></u>	Date/Time: <u>3/4/16 8245</u>

DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

TEL: (512) 388-8222 FAX: (512) 388-8229  
 Work Order: 1603025

# CHAIN-OF-CUSTODY RECORD

Subcontractor:  
 GEL Laboratories TEL: (843) 556-8171  
 PO Box 30712 FAX:  
 Charleston, SC 29417 Acct #:

02-Mar-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E903.1	E904.0				
BAP-63	Aqueous	-10B	02/29/16 05:45 PM	500HDPEHNO3		1				
BAP-63	Aqueous	-10C	02/29/16 05:45 PM	500HDPEHNO3	1					
BAP-62	Aqueous	-11B	03/01/16 07:40 AM	500HDPEHNO3		1				
BAP-62	Aqueous	-11C	03/01/16 07:40 AM	500HDPEHNO3	1					
BAP-61	Aqueous	-12B	03/01/16 08:30 AM	500HDPEHNO3		1				
BAP-61	Aqueous	-12C	03/01/16 08:30 AM	500HDPEHNO3	1					
BAP-60	Aqueous	-13B	03/01/16 09:20 AM	500HDPEHNO3		1				
BAP-60	Aqueous	-13C	03/01/16 09:20 AM	500HDPEHNO3	1					
BAP-59	Aqueous	-14B	03/01/16 10:15 AM	500HDPEHNO3		1				
BAP-59	Aqueous	-14C	03/01/16 10:15 AM	500HDPEHNO3	1					
BAP-57	Aqueous	-15B	03/01/16 11:05 AM	500HDPEHNO3		1				
BAP-57	Aqueous	-15C	03/01/16 11:05 AM	500HDPEHNO3	1					

General Comments:

Please analyze these samples with a Standard Turnaround Time.  
 Call John DuPont if you have questions.  
 Quality Control Package Needed: Standard / \_\_\_\_\_  
 EMAIL report to both cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: <u>J. Banks</u>	Date/Time: <u>3/2/16 1730</u>	Received by: <u>Jed ex</u>	Date/Time: <u>3/2/16 1730</u>
Relinquished by: _____	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>3/4/16 8:45</u>

**SAMPLE RECEIPT & REVIEW FORM**

Client: <u>DHCA</u>		SDG/AR/COC/Work Order: <u>392603</u>
Received By: <u>Shanta Mack</u>		Date Received: <u>3/4/16 8:45</u>
Suspected Hazard Information	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>PT Cam</u>
Classified Radioactive II or III by RSO?	<input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	<input checked="" type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?	<input checked="" type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*			<input checked="" type="checkbox"/>	Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius <u>17C</u>
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): <u>E5032615835</u>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 Do Low Level Perchlorate samples have headspace as required?			<input checked="" type="checkbox"/>	Sample ID's and containers affected:
7 VOA vials contain acid preservation?			<input checked="" type="checkbox"/>	(If unknown, select No)
8 VOA vials free of headspace (defined as < 6mm bubble)?			<input checked="" type="checkbox"/>	Sample ID's and containers affected:
9 Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
10 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
11 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
12 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
13 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
14 Are sample containers identifiable as GEL provided?	<input checked="" type="checkbox"/>			
15 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
16 Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other <u>7757 7918 7428</u>

Comments (Use Continuation Form if needed):

**List of current GEL Certifications as of 29 March 2016**

<b>State</b>	<b>Certification</b>
Alaska	UST-0110
Arkansas	88-0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-15-00283, P330-15-00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA160006
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122016-1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R-158
Oklahoma	9904
Pennsylvania NELAP	68-00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-16-11
Utah NELAP	SC000122016-20
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404



May 16, 2016

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant - Big Brown

Order No.: 1604165

Dear Will Vienne:

DHL Analytical, Inc. received 17 sample(s) on 4/15/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read "John DuPont".

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-16-16





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LUMINANT





John Dupont

---

From: Sara Taube [Sara.Taube@pbwllc.com]  
Sent: Wednesday, July 22, 2015 12:06 PM  
To: John Dupont  
Subject: CCR Appendix III and IV  
Follow Up Flag: Follow up  
Flag Status: Completed

Hi John,

Here are the Appendix III and Appendix IV constituents that we will need to have analyzed under the CCR Rule.

Appendix III

Boron  
Calcium  
Chloride  
Fluoride  
pH  
sulfate  
TDS

Appendix IV

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Fluoride  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Radium 226 and 228

We are looking to have approximately 74 wells sampled 3 times over the course of the next two years. Please let me know if there is any more information you might need.

Cheers,

Sara

10/26/2015

ORIGIN ID:CLLA (512) 671-3434  
PBW  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 14APR16  
ACTWGT: 58.40 LB  
CAD: 6993913/SSFE1703  
DIMS: 35x15x14 IN  
BILL THIRD PARTY

ORIGIN ID:CLLA (512) 671-3434  
PBW  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 14F  
ACTWGT: 51.90  
CAD: 6993913  
DIMS: 34x16  
BILL THIR

RT 512 1 10:30  
FZ

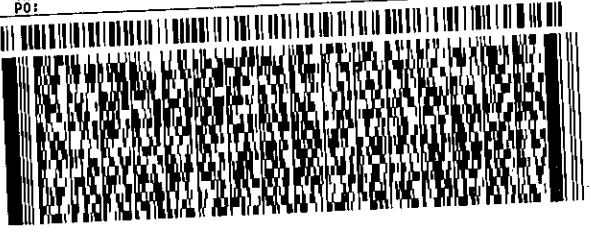
SHIP DATE: 14F  
ACTWGT: 51.90  
CAD: 6993913  
DIMS: 34x16

TO DHL  
2300 DOUBLE CREEK DRIVE  
ROUND ROCK TX 78664

(512) 388-8222 REF: DEPT:  
INU: PO:

TO DHL  
2300 DOUBLE CREEK DRIVE  
ROUND ROCK TX 78664

(512) 388-8222 REF: DEPT:  
INU: PO:

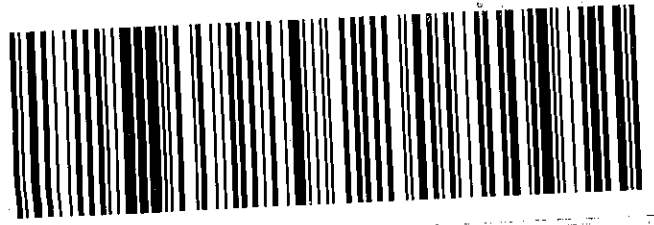


2 of 3  
MPS# 7828 3931 5697  
0263  
Mstr# 7828 3931 5686

FRI - 15 APR 10:30A  
PRIORITY OVERNIGHT

A8 BSMA

78664  
TX-US AUS



3 of 3  
MPS# 7828 3931 5701  
0263  
Mstr# 7828 3931 5686

FRI - 15 APR 10:30A  
PRIORITY OVERNIGHT

A8 BSMA

78664  
TX-US AUS



ORIGIN ID:CLLA (512) 671-3434  
PBW  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 14APR16  
ACTWGT: 51.90 LB  
CAD: 6993913/SSFE1703  
DIMS: 28x16x14 IN  
BILL THIRD PARTY

Pat # 156297-435 R112.08/15 00

TO **DHL**

**2300 DOUBLE CREEK DRIVE**

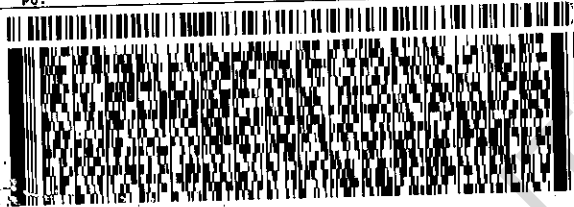
**ROUND ROCK TX 78664**

(512) 388-8222

REF:

INU:

DEPT:



**Fe**

1 of 3

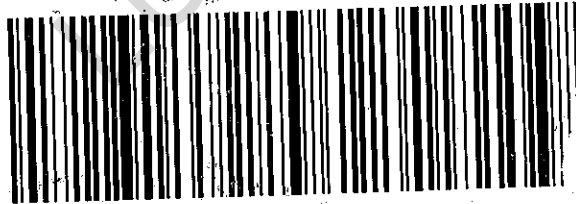
TRK# 7828 3931 5686

0201  
## MASTER ##

**A8 BSMA**

**FRI - 15 APR**  
**PRIORITY OVER**

TX-U



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 4/15/2016

Work Order Number 1604165

Received by JT

Checklist completed by: [Signature] 4/15/2016
Signature Date

Reviewed by [Initials] 4/15/2016
Initials Date

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes [checked] No [ ] Not Present [ ]
Custody seals intact on shipping container/cooler? Yes [ ] No [ ] Not Present [checked]
Custody seals intact on sample bottles? Yes [ ] No [ ] Not Present [checked]
Chain of custody present? Yes [checked] No [ ]
Chain of custody signed when relinquished and received? Yes [checked] No [ ]
Chain of custody agrees with sample labels? Yes [checked] No [ ]
Samples in proper container/bottle? Yes [checked] No [ ]
Sample containers intact? Yes [checked] No [ ]
Sufficient sample volume for indicated test? Yes [checked] No [ ]
All samples received within holding time? Yes [checked] No [ ]
Container/Temp Blank temperature in compliance? Yes [checked] No [ ] 3.9 °C, 3.0, 3.4
Water - VOA vials have zero headspace? Yes [ ] No [ ] No VOA vials submitted [checked]
Water - pH<2 acceptable upon receipt? Yes [checked] No [ ] NA [ ] LOT # 8086
Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt? Yes [ ] No [ ] NA [checked] LOT #
Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1604165

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

- Method SW6020A - Metals Analysis
- Method SW7470A - Mercury Analysis
- Method E300 - Anions Analysis
- Method M4500-H+ B - pH of a Water Analysis
- Method M2540C - TDS Analysis

Sub-contract - Radium-228 and Radium-226 analyses by methods E904/9320 and SM 7500 Ra B M. Analyzed at ESC Lab Sciences.

LOG IN

The samples were received and log-in performed on 4/15/16. A total of 17 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 4/20/16 the RPD for the serial dilution was above control limits for Boron. This is flagged accordingly in the QC summary report. The PDS was within control limits for this analyte. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 4/18/16 CCV2-160418 was slightly above control limits for Fluoride. This is flagged accordingly in the QC summary report. The associated samples were the matrix spike and matrix spike duplicate and were within control limits for this analyte. No further corrective actions were taken.



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**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1604165

**Work Order Sample Summary**

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<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
1604165-01	AMW-13		04/12/16 12:00 PM	4/15/2016
1604165-02	AMW-14		04/12/16 12:50 PM	4/15/2016
1604165-03	AMW-23		04/12/16 01:50 PM	4/15/2016
1604165-04	AMW-22		04/12/16 02:50 PM	4/15/2016
1604165-05	AMW-20		04/12/16 03:40 PM	4/15/2016
1604165-06	AMW-10		04/12/16 04:40 PM	4/15/2016
1604165-07	AMW-21		04/12/16 05:40 PM	4/15/2016
1604165-08	BAP-63		04/13/16 09:00 AM	4/15/2016
1604165-09	DUP-1		04/13/16 09:00 AM	4/15/2016
1604165-10	EB-1		04/13/16 07:35 AM	4/15/2016
1604165-11	BAP-62		04/13/16 09:50 AM	4/15/2016
1604165-12	BAP-61		04/13/16 10:35 AM	4/15/2016
1604165-13	BAP-60		04/13/16 11:20 AM	4/15/2016
1604165-14	BAP-59		04/13/16 12:10 PM	4/15/2016
1604165-15	BAP-58		04/13/16 01:10 PM	4/15/2016
1604165-16	BAP-57		04/13/16 02:00 PM	4/15/2016
1604165-17	FMW-4R		04/13/16 03:15 PM	4/15/2016

LUMINANT

Lab Order: 1604165  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1604165-01A	AMW-13	04/12/16 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-13	04/12/16 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-13	04/12/16 12:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-01D	AMW-13	04/12/16 12:00 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-13	04/12/16 12:00 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-13	04/12/16 12:00 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	AMW-13	04/12/16 12:00 PM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-02A	AMW-14	04/12/16 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-14	04/12/16 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-14	04/12/16 12:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-02D	AMW-14	04/12/16 12:50 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-14	04/12/16 12:50 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-14	04/12/16 12:50 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	AMW-14	04/12/16 12:50 PM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-03A	AMW-23	04/12/16 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-23	04/12/16 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-23	04/12/16 01:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-03D	AMW-23	04/12/16 01:50 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-23	04/12/16 01:50 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-23	04/12/16 01:50 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	AMW-23	04/12/16 01:50 PM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-04A	AMW-22	04/12/16 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-22	04/12/16 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-22	04/12/16 02:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-04D	AMW-22	04/12/16 02:50 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-22	04/12/16 02:50 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-22	04/12/16 02:50 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	AMW-22	04/12/16 02:50 PM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626

**Lab Order:** 1604165  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1604165-05A	AMW-20	04/12/16 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-20	04/12/16 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-20	04/12/16 03:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-05D	AMW-20	04/12/16 03:40 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-20	04/12/16 03:40 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-20	04/12/16 03:40 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	AMW-20	04/12/16 03:40 PM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-06A	AMW-10	04/12/16 04:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-10	04/12/16 04:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-10	04/12/16 04:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-10	04/12/16 04:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-06D	AMW-10	04/12/16 04:40 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-10	04/12/16 04:40 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-10	04/12/16 04:40 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	AMW-10	04/12/16 04:40 PM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-07A	AMW-21	04/12/16 05:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-21	04/12/16 05:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	AMW-21	04/12/16 05:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-07D	AMW-21	04/12/16 05:40 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-21	04/12/16 05:40 PM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	AMW-21	04/12/16 05:40 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	AMW-21	04/12/16 05:40 PM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-08A	BAP-63	04/13/16 09:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-63	04/13/16 09:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-63	04/13/16 09:00 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-08D	BAP-63	04/13/16 09:00 AM	Aqueous	E300	Anion Preparation	04/18/16 10:50 AM	74653
	BAP-63	04/13/16 09:00 AM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	BAP-63	04/13/16 09:00 AM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626

Lab Order: 1604165  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1604165-09A	DUP-1	04/13/16 09:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	DUP-1	04/13/16 09:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	DUP-1	04/13/16 09:00 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-09D	DUP-1	04/13/16 09:00 AM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	DUP-1	04/13/16 09:00 AM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	DUP-1	04/13/16 09:00 AM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-10A	EB-1	04/13/16 07:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	EB-1	04/13/16 07:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	EB-1	04/13/16 07:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-10D	EB-1	04/13/16 07:35 AM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	EB-1	04/13/16 07:35 AM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	EB-1	04/13/16 07:35 AM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	EB-1	04/13/16 07:35 AM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-11A	BAP-62	04/13/16 09:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-62	04/13/16 09:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-62	04/13/16 09:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-62	04/13/16 09:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-11D	BAP-62	04/13/16 09:50 AM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-62	04/13/16 09:50 AM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-62	04/13/16 09:50 AM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	BAP-62	04/13/16 09:50 AM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-12A	BAP-61	04/13/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-61	04/13/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-61	04/13/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-61	04/13/16 10:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-12D	BAP-61	04/13/16 10:35 AM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-61	04/13/16 10:35 AM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-61	04/13/16 10:35 AM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663

Lab Order: 1604165  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1604165-12D	BAP-61	04/13/16 10:35 AM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-13A	BAP-60	04/13/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-60	04/13/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-60	04/13/16 11:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-13D	BAP-60	04/13/16 11:20 AM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-60	04/13/16 11:20 AM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	BAP-60	04/13/16 11:20 AM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-14A	BAP-59	04/13/16 12:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-59	04/13/16 12:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-59	04/13/16 12:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-14D	BAP-59	04/13/16 12:10 PM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-59	04/13/16 12:10 PM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-59	04/13/16 12:10 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	BAP-59	04/13/16 12:10 PM	Aqueous	M2540C	TDS Preparation	04/15/16 01:34 PM	74626
1604165-15A	BAP-58	04/13/16 01:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-58	04/13/16 01:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-58	04/13/16 01:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-15D	BAP-58	04/13/16 01:10 PM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-58	04/13/16 01:10 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	BAP-58	04/13/16 01:10 PM	Aqueous	M2540C	TDS Preparation	04/16/16 02:53 PM	74631
1604165-16A	BAP-57	04/13/16 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-57	04/13/16 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	BAP-57	04/13/16 02:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-16D	BAP-57	04/13/16 02:00 PM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	BAP-57	04/13/16 02:00 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	BAP-57	04/13/16 02:00 PM	Aqueous	M2540C	TDS Preparation	04/16/16 02:53 PM	74631
1604165-17A	FMW-4R	04/13/16 03:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637
	FMW-4R	04/13/16 03:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/18/16 08:30 AM	74637

**Lab Order:** 1604165  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1604165-17A	FMW-4R	04/13/16 03:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/18/16 08:30 AM	74639
1604165-17D	FMW-4R	04/13/16 03:15 PM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	FMW-4R	04/13/16 03:15 PM	Aqueous	E300	Anion Preparation	04/18/16 11:41 AM	74655
	FMW-4R	04/13/16 03:15 PM	Aqueous	M4500-H+ B	pH Preparation	04/19/16 08:30 AM	74663
	FMW-4R	04/13/16 03:15 PM	Aqueous	M2540C	TDS Preparation	04/16/16 02:53 PM	74631

LUMINANT

Lab Order: 1604165  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1604165-01A	AMW-13	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 12:49 PM	CETAC2_HG_160420 B
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:37 PM	ICP-MS4_160420A
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:08 PM	ICP-MS4_160426B
1604165-01D	AMW-13	Aqueous	E300	Anions by IC method - Water	74653	1	04/18/16 12:27 PM	IC4_160418A
	AMW-13	Aqueous	E300	Anions by IC method - Water	74653	10	04/18/16 03:42 PM	IC4_160418A
	AMW-13	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:07 AM	TITRATOR_160419A
	AMW-13	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-02A	AMW-14	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 12:51 PM	CETAC2_HG_160420 B
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:39 PM	ICP-MS4_160420A
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:10 PM	ICP-MS4_160426B
1604165-02D	AMW-14	Aqueous	E300	Anions by IC method - Water	74653	1	04/18/16 12:42 PM	IC4_160418A
	AMW-14	Aqueous	E300	Anions by IC method - Water	74653	100	04/18/16 03:57 PM	IC4_160418A
	AMW-14	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:10 AM	TITRATOR_160419A
	AMW-14	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-03A	AMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 12:54 PM	CETAC2_HG_160420 B
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:12 PM	ICP-MS4_160426B
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:41 PM	ICP-MS4_160420A
1604165-03D	AMW-23	Aqueous	E300	Anions by IC method - Water	74653	1	04/18/16 12:57 PM	IC4_160418A
	AMW-23	Aqueous	E300	Anions by IC method - Water	74653	100	04/18/16 04:12 PM	IC4_160418A
	AMW-23	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:11 AM	TITRATOR_160419A
	AMW-23	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-04A	AMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 12:56 PM	CETAC2_HG_160420 B
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:33 PM	ICP-MS4_160420A
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:04 PM	ICP-MS4_160426B
1604165-04D	AMW-22	Aqueous	E300	Anions by IC method - Water	74653	1	04/18/16 01:12 PM	IC4_160418A
	AMW-22	Aqueous	E300	Anions by IC method - Water	74653	100	04/18/16 04:27 PM	IC4_160418A

Lab Order: 1604165  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1604165-04D	AMW-22	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:13 AM	TITRATOR_160419A
	AMW-22	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-05A	AMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 12:58 PM	CETAC2_HG_160420 B
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:14 PM	ICP-MS4_160426B
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:43 PM	ICP-MS4_160420A
1604165-05D	AMW-20	Aqueous	E300	Anions by IC method - Water	74653	1	04/18/16 01:27 PM	IC4_160418A
	AMW-20	Aqueous	E300	Anions by IC method - Water	74653	10	04/18/16 04:42 PM	IC4_160418A
	AMW-20	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:14 AM	TITRATOR_160419A
	AMW-20	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-06A	AMW-10	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:00 PM	CETAC2_HG_160420 B
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:45 PM	ICP-MS4_160420A
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:16 PM	ICP-MS4_160426B
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	50	04/26/16 01:50 PM	ICP-MS4_160426B
1604165-06D	AMW-10	Aqueous	E300	Anions by IC method - Water	74653	1	04/18/16 01:42 PM	IC4_160418A
	AMW-10	Aqueous	E300	Anions by IC method - Water	74653	100	04/18/16 04:57 PM	IC4_160418A
	AMW-10	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:15 AM	TITRATOR_160419A
	AMW-10	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-07A	AMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:03 PM	CETAC2_HG_160420 B
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:18 PM	ICP-MS4_160426B
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:47 PM	ICP-MS4_160420A
1604165-07D	AMW-21	Aqueous	E300	Anions by IC method - Water	74653	1	04/18/16 01:57 PM	IC4_160418A
	AMW-21	Aqueous	E300	Anions by IC method - Water	74653	100	04/18/16 05:12 PM	IC4_160418A
	AMW-21	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:17 AM	TITRATOR_160419A
	AMW-21	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-08A	BAP-63	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:05 PM	CETAC2_HG_160420 B
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:49 PM	ICP-MS4_160420A



Lab Order: 1604165  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1604165-08A	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:20 PM	ICP-MS4_160426B
1604165-08D	BAP-63	Aqueous	E300	Anions by IC method - Water	74653	1	04/18/16 02:12 PM	IC4_160418A
	BAP-63	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:21 AM	TITRATOR_160419A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-09A	DUP-1	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:12 PM	CETAC2_HG_160420 B
	DUP-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:22 PM	ICP-MS4_160426B
	DUP-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:51 PM	ICP-MS4_160420A
1604165-09D	DUP-1	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 12:56 PM	IC3_160418A
	DUP-1	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:24 AM	TITRATOR_160419A
	DUP-1	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-10A	EB-1	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:14 PM	CETAC2_HG_160420 B
	EB-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 02:53 PM	ICP-MS4_160420A
	EB-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:24 PM	ICP-MS4_160426B
1604165-10D	EB-1	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 01:19 PM	IC3_160418A
	EB-1	Aqueous	E300	Anions by IC method - Water	74655	10	04/18/16 05:39 PM	IC3_160418A
	EB-1	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:27 AM	TITRATOR_160419A
	EB-1	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-11A	BAP-62	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:16 PM	CETAC2_HG_160420 B
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/26/16 01:52 PM	ICP-MS4_160426B
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 04:50 PM	ICP-MS4_160426B
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 03:32 PM	ICP-MS4_160420A
1604165-11D	BAP-62	Aqueous	E300	Anions by IC method - Water	74655	10	04/18/16 05:59 PM	IC3_160418A
	BAP-62	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 01:40 PM	IC3_160418A
	BAP-62	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:30 AM	TITRATOR_160419A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-12A	BAP-61	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:19 PM	CETAC2_HG_160420 B

Lab Order: 1604165  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1604165-12A	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 03:34 PM	ICP-MS4_160420A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/26/16 01:54 PM	ICP-MS4_160426B
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 04:52 PM	ICP-MS4_160426B
1604165-12D	BAP-61	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 02:00 PM	IC3_160418A
	BAP-61	Aqueous	E300	Anions by IC method - Water	74655	10	04/18/16 06:20 PM	IC3_160418A
	BAP-61	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:33 AM	TITRATOR_160419A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-13A	BAP-60	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:21 PM	CETAC2_HG_160420B
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 03:36 PM	ICP-MS4_160420A
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/26/16 01:56 PM	ICP-MS4_160426B
1604165-13D	BAP-60	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 02:21 PM	IC3_160418A
	BAP-60	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:35 AM	TITRATOR_160419A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-14A	BAP-59	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:23 PM	CETAC2_HG_160420B
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 03:38 PM	ICP-MS4_160420A
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 01:58 PM	ICP-MS4_160426B
1604165-14D	BAP-59	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 02:42 PM	IC3_160418A
	BAP-59	Aqueous	E300	Anions by IC method - Water	74655	10	04/18/16 06:41 PM	IC3_160418A
	BAP-59	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:38 AM	TITRATOR_160419A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	74626	1	04/16/16 08:50 AM	WC_160415A
1604165-15A	BAP-58	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:25 PM	CETAC2_HG_160420B
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 03:40 PM	ICP-MS4_160420A
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/26/16 02:00 PM	ICP-MS4_160426B
1604165-15D	BAP-58	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 03:02 PM	IC3_160418A
	BAP-58	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:40 AM	TITRATOR_160419A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	74631	1	04/18/16 08:40 AM	WC_160416A

**Lab Order:** 1604165  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1604165-16A	BAP-57	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:28 PM	CETAC2_HG_160420 B
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 03:42 PM	ICP-MS4_160420A
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/26/16 02:02 PM	ICP-MS4_160426B
1604165-16D	BAP-57	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 03:23 PM	IC3_160418A
	BAP-57	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:43 AM	TITRATOR_160419A
	BAP-57	Aqueous	M2540C	Total Dissolved Solids	74631	1	04/18/16 08:40 AM	WC_160416A
1604165-17A	FMW-4R	Aqueous	SW7470A	Mercury Total: Aqueous	74639	1	04/20/16 01:30 PM	CETAC2_HG_160420 B
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	1	04/20/16 03:44 PM	ICP-MS4_160420A
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74637	10	04/26/16 02:04 PM	ICP-MS4_160426B
1604165-17D	FMW-4R	Aqueous	E300	Anions by IC method - Water	74655	1	04/18/16 03:44 PM	IC3_160418A
	FMW-4R	Aqueous	E300	Anions by IC method - Water	74655	10	04/18/16 07:43 PM	IC3_160418A
	FMW-4R	Aqueous	M4500-H+ B	pH	74663	1	04/19/16 10:45 AM	TITRATOR_160419A
	FMW-4R	Aqueous	M2540C	Total Dissolved Solids	74631	1	04/18/16 08:40 AM	WC_160416A

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** AMW-13  
**Lab ID:** 1604165-01  
**Collection Date:** 04/12/16 12:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>AH</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 12:49 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>RO</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:37 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:37 PM
Barium	0.0915	0.00300	0.0100		mg/L	1	04/20/16 02:37 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:37 PM
Boron	0.0298	0.0100	0.0300	J	mg/L	1	04/20/16 02:37 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:37 PM
Calcium	43.3	1.00	3.00		mg/L	10	04/26/16 01:08 PM
Chromium	0.0108	0.00200	0.00500		mg/L	1	04/20/16 02:37 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 02:37 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:37 PM
Lithium	0.0132	0.00500	0.0100		mg/L	1	04/20/16 02:37 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:37 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:37 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:37 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	213	3.00	10.0		mg/L	10	04/18/16 03:42 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/18/16 12:27 PM
Sulfate	84.1	1.00	3.00		mg/L	1	04/18/16 12:27 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	6.75	0	0		pH Units@22.5°C	1	04/19/16 10:07 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	679	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** AMW-14  
**Lab ID:** 1604165-02  
**Collection Date:** 04/12/16 12:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 12:51 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:39 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:39 PM
Barium	0.150	0.00300	0.0100		mg/L	1	04/20/16 02:39 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:39 PM
Boron	0.0673	0.0100	0.0300		mg/L	1	04/20/16 02:39 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:39 PM
Calcium	156	1.00	3.00		mg/L	10	04/26/16 01:10 PM
Chromium	0.123	0.00200	0.00500		mg/L	1	04/20/16 02:39 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 02:39 PM
Lead	0.00147	0.000300	0.00100		mg/L	1	04/20/16 02:39 PM
Lithium	0.0373	0.00500	0.0100		mg/L	1	04/20/16 02:39 PM
Molybdenum	0.0121	0.00200	0.00500		mg/L	1	04/20/16 02:39 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:39 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:39 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	497	30.0	100		mg/L	100	04/18/16 03:57 PM
Fluoride	0.118	0.100	0.400	J	mg/L	1	04/18/16 12:42 PM
Sulfate	71.0	1.00	3.00		mg/L	1	04/18/16 12:42 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.72	0	0		pH Units@22.6°C	1	04/19/16 10:10 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	1750	50.0	50.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** AMW-23  
**Lab ID:** 1604165-03  
**Collection Date:** 04/12/16 01:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 12:54 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:41 PM
Arsenic	0.00263	0.00200	0.00500	J	mg/L	1	04/20/16 02:41 PM
Barium	0.245	0.00300	0.0100		mg/L	1	04/20/16 02:41 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:41 PM
Boron	2.11	0.100	0.300		mg/L	10	04/26/16 01:12 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:41 PM
Calcium	138	1.00	3.00		mg/L	10	04/26/16 01:12 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:41 PM
Cobalt	0.0159	0.00300	0.00500		mg/L	1	04/20/16 02:41 PM
Lead	0.000679	0.000300	0.00100	J	mg/L	1	04/20/16 02:41 PM
Lithium	0.0108	0.00500	0.0100		mg/L	1	04/20/16 02:41 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:41 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:41 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:41 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	474	30.0	100		mg/L	100	04/18/16 04:12 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/18/16 12:57 PM
Sulfate	95.5	1.00	3.00		mg/L	1	04/18/16 12:57 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.65	0	0		pH Units@22.5°C	1	04/19/16 10:11 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	1740	50.0	50.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** AMW-22  
**Lab ID:** 1604165-04  
**Collection Date:** 04/12/16 02:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 12:56 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:33 PM
Arsenic	0.00236	0.00200	0.00500	J	mg/L	1	04/20/16 02:33 PM
Barium	0.320	0.00300	0.0100		mg/L	1	04/20/16 02:33 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:33 PM
Boron	0.0341	0.0100	0.0300		mg/L	1	04/20/16 02:33 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:33 PM
Calcium	102	1.00	3.00		mg/L	10	04/26/16 01:04 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:33 PM
Cobalt	0.00820	0.00300	0.00500		mg/L	1	04/20/16 02:33 PM
Lead	0.000545	0.000300	0.00100	J	mg/L	1	04/20/16 02:33 PM
Lithium	0.0147	0.00500	0.0100		mg/L	1	04/20/16 02:33 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:33 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:33 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:33 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	381	30.0	100		mg/L	100	04/18/16 04:27 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/18/16 01:12 PM
Sulfate	22.8	1.00	3.00		mg/L	1	04/18/16 01:12 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.63	0	0		pH Units@22.5°C	1	04/19/16 10:13 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	1350	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** AMW-20  
**Lab ID:** 1604165-05  
**Collection Date:** 04/12/16 03:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 12:58 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:43 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:43 PM
Barium	0.405	0.00300	0.0100		mg/L	1	04/20/16 02:43 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:43 PM
Boron	0.0587	0.0100	0.0300		mg/L	1	04/20/16 02:43 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:43 PM
Calcium	66.7	1.00	3.00		mg/L	10	04/26/16 01:14 PM
Chromium	0.00302	0.00200	0.00500	J	mg/L	1	04/20/16 02:43 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 02:43 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:43 PM
Lithium	0.0177	0.00500	0.0100		mg/L	1	04/20/16 02:43 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:43 PM
Selenium	0.00217	0.00200	0.00500	J	mg/L	1	04/20/16 02:43 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:43 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	295	3.00	10.0		mg/L	10	04/18/16 04:42 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/18/16 01:27 PM
Sulfate	15.7	1.00	3.00		mg/L	1	04/18/16 01:27 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.69	0	0		pH Units@22.4°C	1	04/19/16 10:14 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	885	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** AMW-10  
**Lab ID:** 1604165-06  
**Collection Date:** 04/12/16 04:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:00 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:45 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:45 PM
Barium	2.36	0.0300	0.100		mg/L	10	04/26/16 01:16 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:45 PM
Boron	0.0541	0.0100	0.0300		mg/L	1	04/20/16 02:45 PM
Cadmium	0.00114	0.000300	0.00100		mg/L	1	04/20/16 02:45 PM
Calcium	383	5.00	15.0		mg/L	50	04/26/16 01:50 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:45 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 02:45 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:45 PM
Lithium	0.0343	0.00500	0.0100		mg/L	1	04/20/16 02:45 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:45 PM
Selenium	0.0149	0.00200	0.00500		mg/L	1	04/20/16 02:45 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:45 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	1440	30.0	100		mg/L	100	04/18/16 04:57 PM
Fluoride	0.118	0.100	0.400	J	mg/L	1	04/18/16 01:42 PM
Sulfate	11.2	1.00	3.00		mg/L	1	04/18/16 01:42 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.34	0	0		pH Units@22.3°C	1	04/19/16 10:15 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	4990	50.0	50.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** AMW-21  
**Lab ID:** 1604165-07  
**Collection Date:** 04/12/16 05:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:03 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:47 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:47 PM
Barium	1.28	0.00300	0.0100		mg/L	1	04/20/16 02:47 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:47 PM
Boron	0.0466	0.0100	0.0300		mg/L	1	04/20/16 02:47 PM
Cadmium	0.000830	0.000300	0.00100	J	mg/L	1	04/20/16 02:47 PM
Calcium	136	1.00	3.00		mg/L	10	04/26/16 01:18 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:47 PM
Cobalt	0.00940	0.00300	0.00500		mg/L	1	04/20/16 02:47 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:47 PM
Lithium	0.0188	0.00500	0.0100		mg/L	1	04/20/16 02:47 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:47 PM
Selenium	0.132	0.00200	0.00500		mg/L	1	04/20/16 02:47 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:47 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	696	30.0	100		mg/L	100	04/18/16 05:12 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/18/16 01:57 PM
Sulfate	15.2	1.00	3.00		mg/L	1	04/18/16 01:57 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.32	0	0		pH Units@22.6°C	1	04/19/16 10:17 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	2220	50.0	50.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** BAP-63  
**Lab ID:** 1604165-08  
**Collection Date:** 04/13/16 09:00 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:05 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:49 PM
Arsenic	0.0128	0.00200	0.00500		mg/L	1	04/20/16 02:49 PM
Barium	0.186	0.00300	0.0100		mg/L	1	04/20/16 02:49 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:49 PM
Boron	0.762	0.0100	0.0300		mg/L	1	04/20/16 02:49 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:49 PM
Calcium	105	1.00	3.00		mg/L	10	04/26/16 01:20 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:49 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 02:49 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:49 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	04/20/16 02:49 PM
Molybdenum	0.00334	0.00200	0.00500	J	mg/L	1	04/20/16 02:49 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:49 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:49 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	38.8	0.300	1.00		mg/L	1	04/18/16 02:12 PM
Fluoride	0.176	0.100	0.400	J	mg/L	1	04/18/16 02:12 PM
Sulfate	74.0	1.00	3.00		mg/L	1	04/18/16 02:12 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.35	0	0		pH Units@22.6°C	1	04/19/16 10:21 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	632	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** DUP-1  
**Lab ID:** 1604165-09  
**Collection Date:** 04/13/16 09:00 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:12 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:51 PM
Arsenic	0.0134	0.00200	0.00500		mg/L	1	04/20/16 02:51 PM
Barium	0.203	0.00300	0.0100		mg/L	1	04/20/16 02:51 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:51 PM
Boron	0.700	0.0100	0.0300		mg/L	1	04/20/16 02:51 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:51 PM
Calcium	110	1.00	3.00		mg/L	10	04/26/16 01:22 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:51 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 02:51 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:51 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	04/20/16 02:51 PM
Molybdenum	0.00287	0.00200	0.00500	J	mg/L	1	04/20/16 02:51 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:51 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:51 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	35.3	0.300	1.00		mg/L	1	04/18/16 12:56 PM
Fluoride	0.220	0.100	0.400	J	mg/L	1	04/18/16 12:56 PM
Sulfate	73.8	1.00	3.00		mg/L	1	04/18/16 12:56 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.52	0	0		pH Units@22.6°C	1	04/19/16 10:24 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	629	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** EB-1  
**Lab ID:** 1604165-10  
**Collection Date:** 04/13/16 07:35 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:14 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 02:53 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:53 PM
Barium	0.185	0.00300	0.0100		mg/L	1	04/20/16 02:53 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:53 PM
Boron	0.0906	0.0100	0.0300		mg/L	1	04/20/16 02:53 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:53 PM
Calcium	59.5	1.00	3.00		mg/L	10	04/26/16 01:24 PM
Chromium	0.00202	0.00200	0.00500	J	mg/L	1	04/20/16 02:53 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 02:53 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 02:53 PM
Lithium	0.0104	0.00500	0.0100		mg/L	1	04/20/16 02:53 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:53 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 02:53 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 02:53 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	53.2	3.00	10.0		mg/L	10	04/18/16 05:39 PM
Fluoride	0.332	0.100	0.400	J	mg/L	1	04/18/16 01:19 PM
Sulfate	5.95	1.00	3.00		mg/L	1	04/18/16 01:19 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	8.09	0	0		pH Units@22.5°C	1	04/19/16 10:27 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	317	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** BAP-62  
**Lab ID:** 1604165-11  
**Collection Date:** 04/13/16 09:50 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>AH</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:16 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>RO</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 03:32 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:32 PM
Barium	0.0993	0.00300	0.0100		mg/L	1	04/20/16 03:32 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:32 PM
Boron	1.40	0.0100	0.0300		mg/L	1	04/26/16 01:52 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:32 PM
Calcium	103	1.00	3.00		mg/L	10	04/26/16 04:50 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:32 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 03:32 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:32 PM
Lithium	0.0386	0.00500	0.0100		mg/L	1	04/20/16 03:32 PM
Molybdenum	0.00389	0.00200	0.00500	J	mg/L	1	04/20/16 03:32 PM
Selenium	0.0280	0.00200	0.00500		mg/L	1	04/20/16 03:32 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 03:32 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	16.0	0.300	1.00		mg/L	1	04/18/16 01:40 PM
Fluoride	0.359	0.100	0.400	J	mg/L	1	04/18/16 01:40 PM
Sulfate	177	10.0	30.0		mg/L	10	04/18/16 05:59 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	7.74	0	0		pH Units@22.4°C	1	04/19/16 10:30 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	612	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** BAP-61  
**Lab ID:** 1604165-12  
**Collection Date:** 04/13/16 10:35 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:19 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 03:34 PM
Arsenic	0.00564	0.00200	0.00500		mg/L	1	04/20/16 03:34 PM
Barium	0.113	0.00300	0.0100		mg/L	1	04/20/16 03:34 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:34 PM
Boron	0.761	0.0100	0.0300		mg/L	1	04/26/16 01:54 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:34 PM
Calcium	69.7	1.00	3.00		mg/L	10	04/26/16 04:52 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:34 PM
Cobalt	0.00735	0.00300	0.00500		mg/L	1	04/20/16 03:34 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:34 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	04/20/16 03:34 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:34 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:34 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 03:34 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	198	3.00	10.0		mg/L	10	04/18/16 06:20 PM
Fluoride	0.131	0.100	0.400	J	mg/L	1	04/18/16 02:00 PM
Sulfate	110	1.00	3.00		mg/L	1	04/18/16 02:00 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.32	0	0		pH Units@22.3°C	1	04/19/16 10:33 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	680	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** BAP-60  
**Lab ID:** 1604165-13  
**Collection Date:** 04/13/16 11:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>AH</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:21 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>RO</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 03:36 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:36 PM
Barium	0.0892	0.00300	0.0100		mg/L	1	04/20/16 03:36 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:36 PM
Boron	0.486	0.0100	0.0300		mg/L	1	04/26/16 01:56 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:36 PM
Calcium	14.1	0.100	0.300		mg/L	1	04/26/16 01:56 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:36 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 03:36 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:36 PM
Lithium	0.00971	0.00500	0.0100	J	mg/L	1	04/20/16 03:36 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:36 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:36 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 03:36 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	44.4	0.300	1.00		mg/L	1	04/18/16 02:21 PM
Fluoride	0.211	0.100	0.400	J	mg/L	1	04/18/16 02:21 PM
Sulfate	60.8	1.00	3.00		mg/L	1	04/18/16 02:21 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	7.14	0	0		pH Units@22.4°C	1	04/19/16 10:35 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	391	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** BAP-59  
**Lab ID:** 1604165-14  
**Collection Date:** 04/13/16 12:10 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:23 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 03:38 PM
Arsenic	0.00478	0.00200	0.00500	J	mg/L	1	04/20/16 03:38 PM
Barium	0.0917	0.00300	0.0100		mg/L	1	04/20/16 03:38 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:38 PM
Boron	3.00	0.100	0.300		mg/L	10	04/26/16 01:58 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:38 PM
Calcium	62.0	1.00	3.00		mg/L	10	04/26/16 01:58 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:38 PM
Cobalt	0.00503	0.00300	0.00500		mg/L	1	04/20/16 03:38 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:38 PM
Lithium	0.00928	0.00500	0.0100	J	mg/L	1	04/20/16 03:38 PM
Molybdenum	0.00342	0.00200	0.00500	J	mg/L	1	04/20/16 03:38 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:38 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 03:38 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	129	3.00	10.0		mg/L	10	04/18/16 06:41 PM
Fluoride	0.328	0.100	0.400	J	mg/L	1	04/18/16 02:42 PM
Sulfate	269	10.0	30.0		mg/L	10	04/18/16 06:41 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.61	0	0		pH Units@22.4°C	1	04/19/16 10:38 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	774	10.0	10.0		mg/L	1	04/16/16 08:50 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** BAP-58  
**Lab ID:** 1604165-15  
**Collection Date:** 04/13/16 01:10 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:25 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 03:40 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:40 PM
Barium	0.0527	0.00300	0.0100		mg/L	1	04/20/16 03:40 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:40 PM
Boron	1.17	0.0100	0.0300		mg/L	1	04/26/16 02:00 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:40 PM
Calcium	18.1	0.100	0.300		mg/L	1	04/20/16 03:40 PM
Chromium	0.0272	0.00200	0.00500		mg/L	1	04/20/16 03:40 PM
Cobalt	0.00310	0.00300	0.00500	J	mg/L	1	04/20/16 03:40 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:40 PM
Lithium	0.00733	0.00500	0.0100	J	mg/L	1	04/20/16 03:40 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:40 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:40 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 03:40 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	31.4	0.300	1.00		mg/L	1	04/18/16 03:02 PM
Fluoride	0.174	0.100	0.400	J	mg/L	1	04/18/16 03:02 PM
Sulfate	88.3	1.00	3.00		mg/L	1	04/18/16 03:02 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.22	0	0		pH Units@22.4°C	1	04/19/16 10:40 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	344	10.0	10.0		mg/L	1	04/18/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** BAP-57  
**Lab ID:** 1604165-16  
**Collection Date:** 04/13/16 02:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:28 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 03:42 PM
Arsenic	0.00832	0.00200	0.00500		mg/L	1	04/20/16 03:42 PM
Barium	0.0881	0.00300	0.0100		mg/L	1	04/20/16 03:42 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:42 PM
Boron	0.310	0.0100	0.0300		mg/L	1	04/26/16 02:02 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:42 PM
Calcium	11.9	0.100	0.300		mg/L	1	04/20/16 03:42 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:42 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 03:42 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:42 PM
Lithium	0.0620	0.00500	0.0100		mg/L	1	04/20/16 03:42 PM
Molybdenum	0.00594	0.00200	0.00500		mg/L	1	04/20/16 03:42 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:42 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 03:42 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	29.5	0.300	1.00		mg/L	1	04/18/16 03:23 PM
Fluoride	0.191	0.100	0.400	J	mg/L	1	04/18/16 03:23 PM
Sulfate	56.9	1.00	3.00		mg/L	1	04/18/16 03:23 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	8.18	0	0		pH Units@22.5°C	1	04/19/16 10:43 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	417	10.0	10.0		mg/L	1	04/18/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 16-May-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1604165

**Client Sample ID:** FMW-4R  
**Lab ID:** 1604165-17  
**Collection Date:** 04/13/16 03:15 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/20/16 01:30 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/20/16 03:44 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:44 PM
Barium	0.0321	0.00300	0.0100		mg/L	1	04/20/16 03:44 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:44 PM
Boron	3.49	0.100	0.300		mg/L	10	04/26/16 02:04 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/20/16 03:44 PM
Calcium	59.5	1.00	3.00		mg/L	10	04/26/16 02:04 PM
Chromium	0.00328	0.00200	0.00500	J	mg/L	1	04/20/16 03:44 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/20/16 03:44 PM
Lead	0.000927	0.000300	0.00100	J	mg/L	1	04/20/16 03:44 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	04/20/16 03:44 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:44 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/20/16 03:44 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/20/16 03:44 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	125	3.00	10.0		mg/L	10	04/18/16 07:43 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/18/16 03:44 PM
Sulfate	231	10.0	30.0		mg/L	10	04/18/16 07:43 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.23	0	0		pH Units@22.4°C	1	04/19/16 10:45 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	695	10.0	10.0		mg/L	1	04/18/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

**ANALYTICAL QC SUMMARY REPORT**

**RunID: CETAC2\_HG\_160420B**

The QC data in batch 74639 applies to the following samples: 1604165-01A, 1604165-02A, 1604165-03A, 1604165-04A, 1604165-05A, 1604165-06A, 1604165-07A, 1604165-08A, 1604165-09A, 1604165-10A, 1604165-11A, 1604165-12A, 1604165-13A, 1604165-14A, 1604165-15A, 1604165-16A, 1604165-17A

Sample ID <b>MB-74639</b>	Batch ID: <b>74639</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 12:38:08 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.0000800	0.000200								

Sample ID <b>LCS-74639</b>	Batch ID: <b>74639</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 12:40:24 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00216	0.000200	0.00200	0	108	85	115			

Sample ID <b>LCSD-74639</b>	Batch ID: <b>74639</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 12:42:40 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00217	0.000200	0.00200	0	108	85	115	0.462	15	

Sample ID <b>1604165-17A SD</b>	Batch ID: <b>74639</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 1:32:48 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.000400	0.00100	0	0				0	10	

Sample ID <b>1604165-17A PDS</b>	Batch ID: <b>74639</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 1:35:05 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00242	0.000200	0.00250	0	96.8	85	115			

Sample ID <b>1604165-17A MS</b>	Batch ID: <b>74639</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 1:37:22 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00223	0.000200	0.00200	0	112	80	120			

Sample ID <b>1604165-17A MSD</b>	Batch ID: <b>74639</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 1:39:39 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00220	0.000200	0.00200	0	110	80	120	1.35	15	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_160420B

Sample ID <b>ICV-160420</b>	Batch ID: <b>R85335</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 11:57:15 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Mercury	0.00400	0.000200	0.00400	0	100	90	110			
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Sample ID <b>CCV1-160420</b>	Batch ID: <b>R85335</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 12:33:33 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Mercury	0.00198	0.000200	0.00200	0	99.0	90	110			
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Sample ID <b>CCV2-160420</b>	Batch ID: <b>R85335</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 1:07:41 PM</b>	Prep Date:

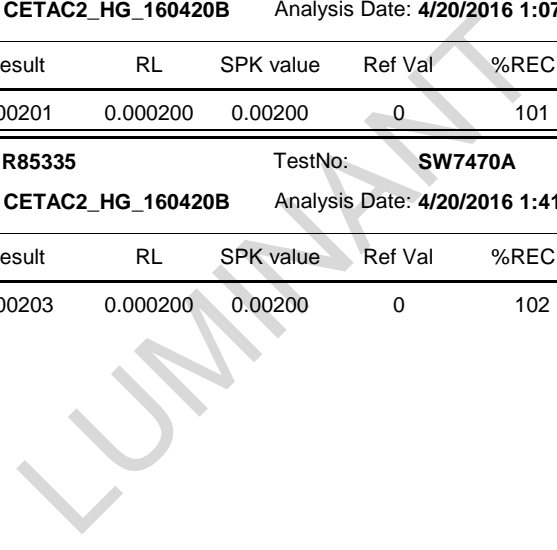
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Mercury	0.00201	0.000200	0.00200	0	101	90	110			
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Sample ID <b>CCV3-160420</b>	Batch ID: <b>R85335</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160420B</b>	Analysis Date: <b>4/20/2016 1:41:57 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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Mercury	0.00203	0.000200	0.00200	0	102	90	110			
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**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160420A**

The QC data in batch 74637 applies to the following samples: 1604165-01A, 1604165-02A, 1604165-03A, 1604165-04A, 1604165-05A, 1604165-06A, 1604165-07A, 1604165-08A, 1604165-09A, 1604165-10A, 1604165-11A, 1604165-12A, 1604165-13A, 1604165-14A, 1604165-15A, 1604165-16A, 1604165-17A

Sample ID: <b>MB-74637</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:24:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Boron	<0.0100	0.0300								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID: <b>LCS-74637</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:27:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.205	0.00250	0.200	0	102	80	120			
Arsenic	0.201	0.00500	0.200	0	100	80	120			
Barium	0.197	0.0100	0.200	0	98.7	80	120			
Beryllium	0.210	0.00100	0.200	0	105	80	120			
Boron	0.207	0.0300	0.200	0	103	80	120			
Cadmium	0.199	0.00100	0.200	0	99.6	80	120			
Calcium	4.99	0.300	5.00	0	99.9	80	120			
Chromium	0.208	0.00500	0.200	0	104	80	120			
Cobalt	0.211	0.00500	0.200	0	106	80	120			
Lead	0.204	0.00100	0.200	0	102	80	120			
Lithium	0.205	0.0100	0.200	0	103	80	120			
Molybdenum	0.202	0.00500	0.200	0	101	80	120			
Selenium	0.201	0.00500	0.200	0	101	80	120			
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID: <b>LCSD-74637</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:29:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.204	0.00250	0.200	0	102	80	120	0.213	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160420A**

Sample ID: <b>LCSD-74637</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:29:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.205	0.00500	0.200	0	102	80	120	2.08	15	
Barium	0.196	0.0100	0.200	0	98.0	80	120	0.723	15	
Beryllium	0.211	0.00100	0.200	0	106	80	120	0.750	15	
Boron	0.210	0.0300	0.200	0	105	80	120	1.71	15	
Cadmium	0.200	0.00100	0.200	0	100	80	120	0.322	15	
Calcium	5.04	0.300	5.00	0	101	80	120	0.961	15	
Chromium	0.209	0.00500	0.200	0	105	80	120	0.691	15	
Cobalt	0.214	0.00500	0.200	0	107	80	120	1.23	15	
Lead	0.205	0.00100	0.200	0	102	80	120	0.161	15	
Lithium	0.201	0.0100	0.200	0	101	80	120	1.93	15	
Molybdenum	0.201	0.00500	0.200	0	101	80	120	0.502	15	
Selenium	0.206	0.00500	0.200	0	103	80	120	2.04	15	
Thallium	0.203	0.00150	0.200	0	102	80	120	0.446	15	

Sample ID: <b>1604165-04A SD</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:35:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	<0.0100	0.0250	0	0.00236				0	10	
Barium	0.314	0.0500	0	0.320				1.78	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Boron	0.0527	0.150	0	0.0341				42.9	10	R
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0.00820				0	10	
Lead	<0.00150	0.00500	0	0.000545				0	10	
Lithium	<0.0250	0.0500	0	0.0147				0	10	
Molybdenum	<0.0100	0.0250	0	0				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID: <b>1604165-04A PDS</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:55:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.195	0.00250	0.200	0	97.5	80	120			
Arsenic	0.198	0.00500	0.200	0.00236	98.0	80	120			
Barium	0.503	0.0100	0.200	0.320	91.6	80	120			
Beryllium	0.201	0.00100	0.200	0	101	80	120			
Boron	0.251	0.0300	0.200	0.0341	108	80	120			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160420A**

Sample ID <b>1604165-04A PDS</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:55:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.191	0.00100	0.200	0	95.3	80	120			
Chromium	0.205	0.00500	0.200	0	102	80	120			
Cobalt	0.208	0.00500	0.200	0.00820	100	80	120			
Lead	0.203	0.00100	0.200	0.000545	101	80	120			
Lithium	0.205	0.0100	0.200	0.0147	95.2	80	120			
Molybdenum	0.200	0.00500	0.200	0	99.9	80	120			
Selenium	0.197	0.00500	0.200	0	98.5	80	120			
Thallium	0.201	0.00150	0.200	0	100	80	120			

Sample ID <b>1604165-04A MS</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:57:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	80	120			
Arsenic	0.205	0.00500	0.200	0.00236	101	80	120			
Barium	0.524	0.0100	0.200	0.320	102	80	120			
Beryllium	0.205	0.00100	0.200	0	102	80	120			
Boron	0.254	0.0300	0.200	0.0341	110	80	120			
Cadmium	0.194	0.00100	0.200	0	97.2	80	120			
Calcium	107	0.300	5.00	101	118	80	120			
Chromium	0.206	0.00500	0.200	0	103	80	120			
Cobalt	0.213	0.00500	0.200	0.00820	103	80	120			
Lead	0.208	0.00100	0.200	0.000545	104	80	120			
Lithium	0.214	0.0100	0.200	0.0147	99.5	80	120			
Molybdenum	0.203	0.00500	0.200	0	102	80	120			
Selenium	0.202	0.00500	0.200	0	101	80	120			
Thallium	0.207	0.00150	0.200	0	103	80	120			

Sample ID <b>1604165-04A MSD</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:59:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.208	0.00250	0.200	0	104	80	120	3.06	15	
Arsenic	0.206	0.00500	0.200	0.00236	102	80	120	0.545	15	
Barium	0.540	0.0100	0.200	0.320	110	80	120	2.95	15	
Beryllium	0.207	0.00100	0.200	0	103	80	120	0.952	15	
Boron	0.241	0.0300	0.200	0.0341	103	80	120	5.34	15	
Cadmium	0.200	0.00100	0.200	0	100	80	120	3.07	15	
Calcium	107	0.300	5.00	101	118	80	120	0.004	15	
Chromium	0.207	0.00500	0.200	0	103	80	120	0.637	15	
Cobalt	0.215	0.00500	0.200	0.00820	104	80	120	0.849	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160420A**

Sample ID <b>1604165-04A MSD</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:59:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.208	0.00100	0.200	0.000545	104	80	120	0.396	15	
Lithium	0.213	0.0100	0.200	0.0147	99.0	80	120	0.466	15	
Molybdenum	0.210	0.00500	0.200	0	105	80	120	3.21	15	
Selenium	0.201	0.00500	0.200	0	100	80	120	0.378	15	
Thallium	0.208	0.00150	0.200	0	104	80	120	0.745	15	

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160420A**

Sample ID <b>ICV-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 12:30:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.101	0.00250	0.100	0	101	90	110			
Arsenic	0.0979	0.00500	0.100	0	97.9	90	110			
Barium	0.0985	0.0100	0.100	0	98.5	90	110			
Beryllium	0.0997	0.00100	0.100	0	99.7	90	110			
Boron	0.103	0.0300	0.100	0	103	90	110			
Cadmium	0.0977	0.00100	0.100	0	97.6	90	110			
Calcium	2.42	0.300	2.50	0	96.7	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.104	0.00500	0.100	0	104	90	110			
Lead	0.101	0.00100	0.100	0	101	90	110			
Lithium	0.0984	0.0100	0.100	0	98.4	90	110			
Molybdenum	0.0991	0.00500	0.100	0	99.1	90	110			
Selenium	0.100	0.00500	0.100	0	100	90	110			
Thallium	0.100	0.00150	0.100	0	100	90	110			

Sample ID <b>LCVL-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 12:37:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00194	0.00250	0.00200	0	97.2	70	130			
Arsenic	0.00481	0.00500	0.00500	0	96.1	70	130			
Barium	0.00482	0.0100	0.00500	0	96.4	70	130			
Beryllium	0.00101	0.00100	0.00100	0	101	70	130			
Boron	0.0182	0.0300	0.0200	0	91.1	70	130			
Cadmium	0.000955	0.00100	0.00100	0	95.5	70	130			
Calcium	0.0969	0.300	0.100	0	96.9	70	130			
Chromium	0.00512	0.00500	0.00500	0	102	70	130			
Cobalt	0.00504	0.00500	0.00500	0	101	70	130			
Lead	0.00101	0.00100	0.00100	0	101	70	130			
Lithium	0.0108	0.0100	0.0100	0	108	70	130			
Molybdenum	0.00485	0.00500	0.00500	0	97.1	70	130			
Selenium	0.00508	0.00500	0.00500	0	102	70	130			
Thallium	0.000973	0.00150	0.00100	0	97.3	70	130			

Sample ID <b>CCV2-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:10:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	90	110			
Arsenic	0.199	0.00500	0.200	0	99.5	90	110			
Barium	0.192	0.0100	0.200	0	95.8	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160420A**

Sample ID: <b>CCV2-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:10:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.203	0.00100	0.200	0	102	90	110			
Boron	0.194	0.0300	0.200	0	97.1	90	110			
Cadmium	0.195	0.00100	0.200	0	97.7	90	110			
Calcium	4.93	0.300	5.00	0	98.7	90	110			
Chromium	0.205	0.00500	0.200	0	102	90	110			
Cobalt	0.207	0.00500	0.200	0	104	90	110			
Lead	0.199	0.00100	0.200	0	99.7	90	110			
Lithium	0.198	0.0100	0.200	0	99.0	90	110			
Molybdenum	0.195	0.00500	0.200	0	97.6	90	110			
Selenium	0.201	0.00500	0.200	0	101	90	110			
Thallium	0.199	0.00150	0.200	0	99.6	90	110			

Sample ID: <b>LCVL2-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 2:20:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00188	0.00250	0.00200	0	93.8	70	130			
Arsenic	0.00483	0.00500	0.00500	0	96.5	70	130			
Barium	0.00473	0.0100	0.00500	0	94.6	70	130			
Beryllium	0.000751	0.00100	0.00100	0	75.1	70	130			
Boron	0.0215	0.0300	0.0200	0	107	70	130			
Cadmium	0.000948	0.00100	0.00100	0	94.8	70	130			
Calcium	0.0998	0.300	0.100	0	99.8	70	130			
Chromium	0.00526	0.00500	0.00500	0	105	70	130			
Cobalt	0.00516	0.00500	0.00500	0	103	70	130			
Lead	0.000930	0.00100	0.00100	0	93.0	70	130			
Lithium	0.0109	0.0100	0.0100	0	109	70	130			
Molybdenum	0.00479	0.00500	0.00500	0	95.8	70	130			
Selenium	0.00504	0.00500	0.00500	0	101	70	130			
Thallium	0.000959	0.00150	0.00100	0	95.9	70	130			

Sample ID: <b>CCV3-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 3:13:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	101	90	110			
Arsenic	0.198	0.00500	0.200	0	99.1	90	110			
Barium	0.193	0.0100	0.200	0	96.3	90	110			
Beryllium	0.201	0.00100	0.200	0	101	90	110			
Boron	0.208	0.0300	0.200	0	104	90	110			
Cadmium	0.195	0.00100	0.200	0	97.5	90	110			

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160420A**

Sample ID <b>CCV3-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 3:13:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.91	0.300	5.00	0	98.2	90	110			
Chromium	0.205	0.00500	0.200	0	102	90	110			
Cobalt	0.207	0.00500	0.200	0	104	90	110			
Lead	0.201	0.00100	0.200	0	100	90	110			
Lithium	0.201	0.0100	0.200	0	101	90	110			
Molybdenum	0.197	0.00500	0.200	0	98.7	90	110			
Selenium	0.198	0.00500	0.200	0	98.9	90	110			
Thallium	0.200	0.00150	0.200	0	100	90	110			

Sample ID <b>LCVL3-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 3:28:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00197	0.00250	0.00200	0	98.6	70	130			
Arsenic	0.00486	0.00500	0.00500	0	97.3	70	130			
Barium	0.00478	0.0100	0.00500	0	95.6	70	130			
Beryllium	0.000854	0.00100	0.00100	0	85.4	70	130			
Boron	0.0245	0.0300	0.0200	0	123	70	130			
Cadmium	0.000943	0.00100	0.00100	0	94.3	70	130			
Calcium	0.0918	0.300	0.100	0	91.8	70	130			
Chromium	0.00516	0.00500	0.00500	0	103	70	130			
Cobalt	0.00512	0.00500	0.00500	0	102	70	130			
Lead	0.000924	0.00100	0.00100	0	92.4	70	130			
Lithium	0.0112	0.0100	0.0100	0	112	70	130			
Molybdenum	0.00483	0.00500	0.00500	0	96.6	70	130			
Selenium	0.00472	0.00500	0.00500	0	94.3	70	130			
Thallium	0.000968	0.00150	0.00100	0	96.8	70	130			

Sample ID <b>CCV4-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 4:07:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.207	0.00250	0.200	0	103	90	110			
Arsenic	0.197	0.00500	0.200	0	98.3	90	110			
Barium	0.194	0.0100	0.200	0	96.9	90	110			
Beryllium	0.203	0.00100	0.200	0	102	90	110			
Cadmium	0.198	0.00100	0.200	0	98.8	90	110			
Calcium	4.90	0.300	5.00	0	98.1	90	110			
Chromium	0.203	0.00500	0.200	0	101	90	110			
Cobalt	0.207	0.00500	0.200	0	103	90	110			
Lead	0.200	0.00100	0.200	0	99.8	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160420A**

Sample ID: <b>CCV4-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 4:07:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.203	0.0100	0.200	0	102	90	110			
Molybdenum	0.198	0.00500	0.200	0	99.0	90	110			
Selenium	0.197	0.00500	0.200	0	98.5	90	110			
Thallium	0.198	0.00150	0.200	0	99.2	90	110			

Sample ID: <b>LCVL4-160420</b>	Batch ID: <b>R85336</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160420A</b>	Analysis Date: <b>4/20/2016 4:43:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00188	0.00250	0.00200	0	93.8	70	130			
Arsenic	0.00491	0.00500	0.00500	0	98.1	70	130			
Barium	0.00473	0.0100	0.00500	0	94.6	70	130			
Beryllium	0.00110	0.00100	0.00100	0	110	70	130			
Cadmium	0.000949	0.00100	0.00100	0	94.9	70	130			
Calcium	0.0969	0.300	0.100	0	96.9	70	130			
Chromium	0.00523	0.00500	0.00500	0	105	70	130			
Cobalt	0.00511	0.00500	0.00500	0	102	70	130			
Lead	0.000910	0.00100	0.00100	0	91.0	70	130			
Lithium	0.0108	0.0100	0.0100	0	108	70	130			
Molybdenum	0.00474	0.00500	0.00500	0	94.9	70	130			
Selenium	0.00480	0.00500	0.00500	0	96.1	70	130			
Thallium	0.000959	0.00150	0.00100	0	95.9	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160426B**

The QC data in batch 74637 applies to the following samples: 1604165-01A, 1604165-02A, 1604165-03A, 1604165-04A, 1604165-05A, 1604165-06A, 1604165-07A, 1604165-08A, 1604165-09A, 1604165-10A, 1604165-11A, 1604165-12A, 1604165-13A, 1604165-14A, 1604165-15A, 1604165-16A, 1604165-17A

Sample ID <b>1604165-04A SD</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 1:06:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	101	15.0	0	102				0.992	10	

Sample ID <b>1604165-04A PDS</b>	Batch ID: <b>74637</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 1:26:00 PM</b>	Prep Date: <b>4/18/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	148	3.00	50.0	102	92.1	80	120			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160426B**

Sample ID <b>ICV-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 11:36:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.0955	0.0100	0.100	0	95.5	90	110			
Boron	0.0978	0.0300	0.100	0	97.8	90	110			
Calcium	2.39	0.300	2.50	0	95.5	90	110			

Sample ID <b>LCVL-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 11:45:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00486	0.0100	0.00500	0	97.1	70	130			
Boron	0.0198	0.0300	0.0200	0	99.0	70	130			
Calcium	0.100	0.300	0.100	0	100	70	130			

Sample ID <b>CCV2-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 12:54:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.197	0.0100	0.200	0	98.3	90	110			
Boron	0.194	0.0300	0.200	0	96.8	90	110			
Calcium	4.95	0.300	5.00	0	99.1	90	110			

Sample ID <b>LCVL2-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 12:59:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00478	0.0100	0.00500	0	95.6	70	130			
Boron	0.0216	0.0300	0.0200	0	108	70	130			
Calcium	0.106	0.300	0.100	0	106	70	130			

Sample ID <b>CCV3-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 1:40:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.198	0.0300	0.200	0	99.0	90	110			
Calcium	4.94	0.300	5.00	0	98.7	90	110			

Sample ID <b>LCVL3-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 1:46:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0225	0.0300	0.0200	0	112	70	130			
Calcium	0.0985	0.300	0.100	0	98.5	70	130			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160426B**

Sample ID <b>CCV4-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 2:19:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.202	0.0300	0.200	0	101	90	110			
Calcium	4.99	0.300	5.00	0	99.9	90	110			

Sample ID <b>LCVL4-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 2:29:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0218	0.0300	0.0200	0	109	70	130			
Calcium	0.0972	0.300	0.100	0	97.2	70	130			

Sample ID <b>CCV7-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 4:36:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.98	0.300	5.00	0	99.7	90	110			

Sample ID <b>LCVL7-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 4:41:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0939	0.300	0.100	0	93.9	70	130			

Sample ID <b>CCV8-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 5:04:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.96	0.300	5.00	0	99.3	90	110			

Sample ID <b>LCVL8-160426</b>	Batch ID: <b>R85458</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160426B</b>	Analysis Date: <b>4/26/2016 5:09:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0942	0.300	0.100	0	94.2	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC3\_160418A**

The QC data in batch 74655 applies to the following samples: 1604165-09D, 1604165-10D, 1604165-11D, 1604165-12D, 1604165-13D, 1604165-14D, 1604165-15D, 1604165-16D, 1604165-17D

Sample ID <b>MB-74655</b>	Batch ID: <b>74655</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC3_160418A</b>	Analysis Date: <b>4/18/2016 11:47:27 AM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-74655</b>	Batch ID: <b>74655</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC3_160418A</b>	Analysis Date: <b>4/18/2016 12:10:58 PM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.66	1.00	10.00	0	96.6	90	110			
Fluoride	4.35	0.400	4.000	0	109	90	110			
Sulfate	31.8	3.00	30.00	0	106	90	110			

Sample ID <b>LCS-74655</b>	Batch ID: <b>74655</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC3_160418A</b>	Analysis Date: <b>4/18/2016 12:31:40 PM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.68	1.00	10.00	0	96.8	90	110	0.127	20	
Fluoride	4.26	0.400	4.000	0	107	90	110	2.01	20	
Sulfate	31.3	3.00	30.00	0	104	90	110	1.50	20	

Sample ID <b>1604165-14DMS</b>	Batch ID: <b>74655</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC3_160418A</b>	Analysis Date: <b>4/18/2016 7:01:44 PM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	322	10.0	200.0	128.6	96.7	90	110			
Fluoride	195	4.00	200.0	0	97.5	90	110			
Sulfate	474	30.0	200.0	269.2	102	90	110			

Sample ID <b>1604165-14DMSD</b>	Batch ID: <b>74655</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC3_160418A</b>	Analysis Date: <b>4/18/2016 7:22:26 PM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	322	10.0	200.0	128.6	96.8	90	110	0.027	20	
Fluoride	196	4.00	200.0	0	98.1	90	110	0.649	20	
Sulfate	475	30.0	200.0	269.2	103	90	110	0.294	20	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC3\_160418A**

Sample ID <b>ICV-160418</b>	Batch ID: <b>R85303</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC3_160418A</b>	Analysis Date: <b>4/18/2016 10:58:31 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.5	1.00	25.00	0	97.9	90	110			
Fluoride	10.2	0.400	10.00	0	102	90	110			
Sulfate	76.3	3.00	75.00	0	102	90	110			

Sample ID <b>CCV1-160418</b>	Batch ID: <b>R85303</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC3_160418A</b>	Analysis Date: <b>4/18/2016 4:37:09 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.68	1.00	10.00	0	96.8	90	110			
Fluoride	4.16	0.400	4.000	0	104	90	110			
Sulfate	31.1	3.00	30.00	0	104	90	110			

Sample ID <b>CCV2-160418</b>	Batch ID: <b>R85303</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC3_160418A</b>	Analysis Date: <b>4/18/2016 8:24:24 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.69	1.00	10.00	0	96.9	90	110			
Fluoride	4.47	0.400	4.000	0	112	90	110			S
Sulfate	31.0	3.00	30.00	0	103	90	110			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_160418A**

The QC data in batch 74653 applies to the following samples: 1604165-01D, 1604165-02D, 1604165-03D, 1604165-04D, 1604165-05D, 1604165-06D, 1604165-07D, 1604165-08D

Sample ID <b>MB-74653</b>	Batch ID: <b>74653</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC4_160418A</b>	Analysis Date: <b>4/18/2016 11:32:52 AM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-74653</b>	Batch ID: <b>74653</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC4_160418A</b>	Analysis Date: <b>4/18/2016 11:47:52 AM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.93	1.00	10.00	0	99.3	90	110			
Fluoride	4.00	0.400	4.000	0	99.9	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

Sample ID <b>LCS-D-74653</b>	Batch ID: <b>74653</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS-D</b>	Run ID: <b>IC4_160418A</b>	Analysis Date: <b>4/18/2016 12:02:52 PM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.0	1.00	10.00	0	100	90	110	0.722	20	
Fluoride	3.98	0.400	4.000	0	99.5	90	110	0.387	20	
Sulfate	30.5	3.00	30.00	0	102	90	110	1.31	20	

Sample ID <b>1604165-07DMS</b>	Batch ID: <b>74653</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC4_160418A</b>	Analysis Date: <b>4/18/2016 5:27:52 PM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2850	100	2000	696.1	108	90	110			
Fluoride	2130	40.0	2000	0	107	90	110			
Sulfate	2190	300	2000	0	109	90	110			

Sample ID <b>1604165-07DMS-D</b>	Batch ID: <b>74653</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS-D</b>	Run ID: <b>IC4_160418A</b>	Analysis Date: <b>4/18/2016 5:42:52 PM</b>	Prep Date: <b>4/18/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2850	100	2000	696.1	108	90	110	0.116	20	
Fluoride	2140	40.0	2000	0	107	90	110	0.190	20	
Sulfate	2160	300	2000	0	108	90	110	1.04	20	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_160418A**

Sample ID <b>ICV-160418</b>	Batch ID: <b>R85298</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC4_160418A</b>	Analysis Date: <b>4/18/2016 10:48:40 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.1	1.00	25.00	0	96.5	90	110			
Fluoride	9.71	0.400	10.00	0	97.1	90	110			
Sulfate	73.2	3.00	75.00	0	97.6	90	110			

Sample ID <b>CCV1-160418</b>	Batch ID: <b>R85298</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_160418A</b>	Analysis Date: <b>4/18/2016 2:36:14 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.5	1.00	10.00	0	105	90	110			
Fluoride	4.20	0.400	4.000	0	105	90	110			
Sulfate	31.5	3.00	30.00	0	105	90	110			

Sample ID <b>CCV2-160418</b>	Batch ID: <b>R85298</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_160418A</b>	Analysis Date: <b>4/18/2016 6:12:52 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.9	1.00	10.00	0	109	90	110			
Fluoride	4.31	0.400	4.000	0	108	90	110			
Sulfate	32.2	3.00	30.00	0	107	90	110			

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_160419A**

The QC data in batch 74663 applies to the following samples: 1604165-01D, 1604165-02D, 1604165-03D, 1604165-04D, 1604165-05D, 1604165-06D, 1604165-07D, 1604165-08D, 1604165-09D, 1604165-10D, 1604165-11D, 1604165-12D, 1604165-13D, 1604165-14D, 1604165-15D, 1604165-16D, 1604165-17D

Sample ID <b>1604161-01C-DUP</b>	Batch ID: <b>74663</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@19°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_160419A</b>	Analysis Date: <b>4/19/2016 10:02:00 AM</b>	Prep Date: <b>4/19/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	8.12	0	0	8.090				0.370		5

Sample ID <b>1604165-17D-DUP</b>	Batch ID: <b>74663</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@22.2°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_160419A</b>	Analysis Date: <b>4/19/2016 10:54:00 AM</b>	Prep Date: <b>4/19/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.04	0	0	7.230				2.66		5

LUMINANT

<b>Qualifiers:</b>	<p><b>B</b> Analyte detected in the associated Method Blank</p> <p><b>J</b> Analyte detected between MDL and RL</p> <p><b>ND</b> Not Detected at the Method Detection Limit</p> <p><b>RL</b> Reporting Limit</p> <p><b>J</b> Analyte detected between SDL and RL</p>	<p><b>DF</b> Dilution Factor</p> <p><b>MDL</b> Method Detection Limit</p> <p><b>R</b> RPD outside accepted control limits</p> <p><b>S</b> Spike Recovery outside control limits</p> <p><b>N</b> Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_160419A**

Sample ID <b>ICV-160419</b>	Batch ID: <b>R85305</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.6°C</b>							
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_160419A</b>	Analysis Date: <b>4/19/2016 8:58:00 AM</b>	Prep Date: <b>4/19/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	10.0	0	10.00	0	100	99	101			
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Sample ID <b>CCV1-160419</b>	Batch ID: <b>R85305</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@22.1°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160419A</b>	Analysis Date: <b>4/19/2016 10:18:00 AM</b>	Prep Date: <b>4/19/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	7.01	0	7.000	0	100	97.1	102.9			
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Sample ID <b>CCV2-160419</b>	Batch ID: <b>R85305</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@22.3°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160419A</b>	Analysis Date: <b>4/19/2016 10:51:00 AM</b>	Prep Date: <b>4/19/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	7.02	0	7.000	0	100	97.1	102.9			
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Sample ID <b>CCV3-160419</b>	Batch ID: <b>R85305</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@22°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160419A</b>	Analysis Date: <b>4/19/2016 10:55:00 AM</b>	Prep Date: <b>4/19/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	7.02	0	7.000	0	100	97.1	102.9			
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<b>Qualifiers:</b>	<p><b>B</b> Analyte detected in the associated Method Blank</p> <p><b>J</b> Analyte detected between MDL and RL</p> <p><b>ND</b> Not Detected at the Method Detection Limit</p> <p><b>RL</b> Reporting Limit</p> <p><b>J</b> Analyte detected between SDL and RL</p>	<p><b>DF</b> Dilution Factor</p> <p><b>MDL</b> Method Detection Limit</p> <p><b>R</b> RPD outside accepted control limits</p> <p><b>S</b> Spike Recovery outside control limits</p> <p><b>N</b> Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_160415A**

The QC data in batch 74626 applies to the following samples: 1604165-01D, 1604165-02D, 1604165-03D, 1604165-04D, 1604165-05D, 1604165-06D, 1604165-07D, 1604165-08D, 1604165-09D, 1604165-10D, 1604165-11D, 1604165-12D, 1604165-13D, 1604165-14D

Sample ID <b>MB-74626</b>	Batch ID: <b>74626</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_160415A</b>	Analysis Date: <b>4/16/2016 8:50:00 AM</b>	Prep Date: <b>4/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-74626</b>	Batch ID: <b>74626</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_160415A</b>	Analysis Date: <b>4/16/2016 8:50:00 AM</b>	Prep Date: <b>4/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	752	10.0	745.6	0	101	90	113			

Sample ID <b>1604148-01C-DUP</b>	Batch ID: <b>74626</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160415A</b>	Analysis Date: <b>4/16/2016 8:50:00 AM</b>	Prep Date: <b>4/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	437	10.0	0	433.0				0.920	5	

Sample ID <b>1604148-05C-DUP</b>	Batch ID: <b>74626</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160415A</b>	Analysis Date: <b>4/16/2016 8:50:00 AM</b>	Prep Date: <b>4/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	1450	50.0	0	1500				3.39	5	

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1604165  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_160416A**

The QC data in batch 74631 applies to the following samples: 1604165-15D, 1604165-16D, 1604165-17D

Sample ID <b>MB-74631</b>	Batch ID: <b>74631</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>								
SampType: <b>MBLK</b>	Run ID: <b>WC_160416A</b>	Analysis Date: <b>4/18/2016 8:40:00 AM</b>	Prep Date: <b>4/16/2016</b>								
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids (Residue, Filtera		<10.0	10.0								

Sample ID <b>LCS-74631</b>	Batch ID: <b>74631</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_160416A</b>	Analysis Date: <b>4/18/2016 8:40:00 AM</b>	Prep Date: <b>4/16/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		748	10.0	745.6	0	100	90	113		

Sample ID <b>1604150-01B-DUP</b>	Batch ID: <b>74631</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160416A</b>	Analysis Date: <b>4/18/2016 8:40:00 AM</b>	Prep Date: <b>4/16/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		793	10.0	0	802.0			1.13	5	

Sample ID <b>1604150-12B-DUP</b>	Batch ID: <b>74631</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160416A</b>	Analysis Date: <b>4/18/2016 8:40:00 AM</b>	Prep Date: <b>4/16/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		349	10.0	0	353.0			1.14	5	

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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## Case Narrative

### Lab No: 20160368

This report contains the analytical results for the 17 sample(s) received under chain of custody by ESC Lab Sciences on 04/19/16 11:12:23. These samples are associated with your 1604165 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

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Client : DHL Analytical, Inc.  
 Client Project : 1604165  
 Lab Number : 20160368  
 Date Reported : 05/12/16  
 Date Received : 04/19/16  
 Page Number : 2 of 6

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20160368-01  
**Client ID** : AMW-13  
**Date Sampled** : 04/12/16 12:00:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.807 +/- 0.779	1.05	pCi/l				
Radium-226	SM 7500 Ra B M*	0.061 +/- 0.090	0.143	pCi/l	04/22/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.746 +/- 0.689	0.909	pCi/l	05/05/16	05/09/16	JR

**Lab ID** : 20160368-02  
**Client ID** : AMW-14  
**Date Sampled** : 04/12/16 12:50:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.895 +/- 1.04	1.22	pCi/l				
Radium-226	SM 7500 Ra B M*	0.513 +/- 0.181	0.165	pCi/l	04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.382 +/- 0.859	1.05	pCi/l	05/05/16	05/09/16	JR

**Lab ID** : 20160368-03  
**Client ID** : AMW-23  
**Date Sampled** : 04/12/16 01:50:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	1.13 +/- 1.16	1.61	pCi/l				
Radium-226	SM 7500 Ra B M*	0.308 +/- 0.408	0.619	pCi/l	04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.822 +/- 0.747	0.992	pCi/l	05/05/16	05/09/16	JR

**Lab ID** : 20160368-04  
**Client ID** : AMW-22  
**Date Sampled** : 04/12/16 14:50:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	1.94 +/- 1.01	1.67	pCi/l				
Radium-226	SM 7500 Ra B M*	0.530 +/- 0.194	0.208	pCi/l	04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	1.41 +/- 0.815	1.46	pCi/l	05/05/16	05/09/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1604165  
 Lab Number : 20160368  
 Date Reported : 05/12/16  
 Date Received : 04/19/16  
 Page Number : 3 of 6

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20160368-05  
**Client ID** : AMW-20  
**Date Sampled** : 04/12/16 15:40:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.61 +/- 0.951	1.05	pCi/l				
Radium-226	SM 7500 Ra B M*	0.515 +/- 0.196	0.149	pCi/l		04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	2.10 +/- 0.755	0.905	pCi/l		05/05/16	05/09/16	JR

**Lab ID** : 20160368-06  
**Client ID** : AMW-10  
**Date Sampled** : 04/12/16 16:40:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		3.21 +/- 1.53	1.67	pCi/l				
Radium-226	SM 7500 Ra B M*	2.40 +/- 0.368	0.218	pCi/l		04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.811 +/- 1.17	1.46	pCi/l		05/05/16	05/09/16	JR

**Lab ID** : 20160368-07  
**Client ID** : AMW-21  
**Date Sampled** : 04/12/16 17:40:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.48 +/- 1.10	1.04	pCi/l				
Radium-226	SM 7500 Ra B M*	1.78 +/- 0.309	0.118	pCi/l		04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.698 +/- 0.795	0.92	pCi/l		05/05/16	05/09/16	JR

**Lab ID** : 20160368-08  
**Client ID** : BAP-63  
**Date Sampled** : 04/13/16 09:00:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.903 +/- 1.09	1.35	pCi/l				
Radium-226	SM 7500 Ra B M*	0.351 +/- 0.202	0.234	pCi/l		04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.551 +/- 0.891	1.12	pCi/l		05/05/16	05/09/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1604165  
 Lab Number : 20160368  
 Date Reported : 05/12/16  
 Date Received : 04/19/16  
 Page Number : 4 of 6

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20160368-09  
**Client ID** : DUP-1  
**Date Sampled** : 04/13/16 09:00:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.353 +/- 0.797	0.962	pCi/l				
Radium-226	SM 7500 Ra B M*	0.329 +/- 0.163	0.151	pCi/l		04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.024 +/- 0.634	0.811	pCi/l		05/05/16	05/09/16	JR

**Lab ID** : 20160368-10  
**Client ID** : EB-1  
**Date Sampled** : 04/13/16 07:35:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.07 +/- 1.03	1.33	pCi/l				
Radium-226	SM 7500 Ra B M*	0.305 +/- 0.299	0.422	pCi/l		04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.763 +/- 0.728	0.904	pCi/l		05/05/16	05/09/16	JR

**Lab ID** : 20160368-11  
**Client ID** : BAP-62  
**Date Sampled** : 04/13/16 09:50:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.108 +/- 1.07	1.35	pCi/l				
Radium-226	SM 7500 Ra B M*	0.108 +/- 0.113	0.156	pCi/l		04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	-0.479 +/- 0.953	1.20	pCi/l		05/05/16	05/09/16	JR

**Lab ID** : 20160368-12  
**Client ID** : BAP-61  
**Date Sampled** : 04/13/16 10:35:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.45 +/- 1.25	1.60	pCi/l				
Radium-226	SM 7500 Ra B M*	0.329 +/- 0.379	0.560	pCi/l		04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	1.12 +/- 0.868	1.04	pCi/l		05/05/16	05/09/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1604165  
 Lab Number : 20160368  
 Date Reported : 05/12/16  
 Date Received : 04/19/16  
 Page Number : 5 of 6

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20160368-13  
**Client ID** : BAP-60  
**Date Sampled** : 04/13/16 11:20:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	1.45 +/- 1.00	1.27	pCi/l				
Radium-226	SM 7500 Ra B M*	0.070 +/- 0.164	0.280	pCi/l	04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	1.68 +/- 0.835	0.987	pCi/l	05/05/16	05/09/16	JR

**Lab ID** : 20160368-14  
**Client ID** : BAP-59  
**Date Sampled** : 04/13/16 12:10:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.117 +/- 1.18	1.89	pCi/l				
Radium-226	SM 7500 Ra B M*	0.117 +/- 0.58	0.245	pCi/l	04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	-0.068 +/- 1.02	1.65	pCi/l	05/05/16	05/09/16	JR

**Lab ID** : 20160368-15  
**Client ID** : BAP-58  
**Date Sampled** : 04/13/16 13:10:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.920 +/- 0.731	1.12	pCi/l				
Radium-226	SM 7500 Ra B M*	0.024 +/- 0.091	0.167	pCi/l	04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.896 +/- 0.640	0.954	pCi/l	05/05/16	05/10/16	JR

**Lab ID** : 20160368-16  
**Client ID** : BAP-57  
**Date Sampled** : 04/13/16 14:00:00  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium	0.627 +/- 1.18	1.59	pCi/l				
Radium-226	SM 7500 Ra B M*	0.278 +/- 0.362	0.555	pCi/l	04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	0.348 +/- 0.823	1.04	pCi/l	05/05/16	05/10/16	JR

\*NELAC Certified Parameter

BDL = Below Detection Limit



Client : DHL Analytical, Inc.  
 Client Project : 1604165  
 Lab Number : 20160368  
 Date Reported : 05/12/16  
 Date Received : 04/19/16  
 Page Number : 6 of 6

### Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID</b> : 20160368-17							
<b>Client ID</b> : FMW-4R							
<b>Date Sampled</b> : 04/13/16 15:15:00							
<b>Matrix</b> : NPW							

### Radiochemical Analyses

Combined Radium	1.28 +/- 0.716	0.93	pCi/l				
Radium-226	SM 7500 Ra B M*	0.228 +/- 0.143	0.158	pCi/l	04/25/16	04/27/16	AK
Radium-228	EPA 904*/9320*	1.05 +/- 0.574	0.773	pCi/l	05/05/16	05/10/16	JR

### QC Report

Parameter	Blank	LCS %REC	LCS %REC	LCS RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	MSD RPD	Date
Radium-226	0.021	110.0			NC	1.140	104.0	95.6	8.4	
Radium-228	-0.053	108.0			NC	0.482	86.5	82.4	4.8	05/11/16

Lab Approval: \_\_\_\_\_

DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1604165

**Subcontractor:**

ESC Laboratory  
 311 North Aspen  
 Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515  
 FAX:  
 Acct #: DHLRRTX

15-Apr-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests				
					E904.0	SM7500Ra-B M			
AMW-13	Aqueous	-01B	04/12/16 12:00 PM	500HDPEHNO3	1				
AMW-13	Aqueous	-01C	04/12/16 12:00 PM	500HDPEHNO3		1			
AMW-14	Aqueous	-02B	04/12/16 12:50 PM	500HDPEHNO3	1				
AMW-14	Aqueous	-02C	04/12/16 12:50 PM	500HDPEHNO3		1			
AMW-23	Aqueous	-03B	04/12/16 01:50 PM	500HDPEHNO3	1				
AMW-23	Aqueous	-03C	04/12/16 01:50 PM	500HDPEHNO3		1			
AMW-22	Aqueous	-04B	04/12/16 02:50 PM	500HDPEHNO3	1				
AMW-22	Aqueous	-04C	04/12/16 02:50 PM	500HDPEHNO3		1			
AMW-20	Aqueous	-05B	04/12/16 03:40 PM	500HDPEHNO3	1				
AMW-20	Aqueous	-05C	04/12/16 03:40 PM	500HDPEHNO3		1			
AMW-10	Aqueous	-06B	04/12/16 04:40 PM	500HDPEHNO3	1				
AMW-10	Aqueous	-06C	04/12/16 04:40 PM	500HDPEHNO3		1			
AMW-21	Aqueous	-07B	04/12/16 05:40 PM	500HDPEHNO3	1				
AMW-21	Aqueous	-07C	04/12/16 05:40 PM	500HDPEHNO3		1			
BAP-63	Aqueous	-08B	04/13/16 09:00 AM	500HDPEHNO3	1				
BAP-63	Aqueous	-08C	04/13/16 09:00 AM	500HDPEHNO3		1			
DUP-1	Aqueous	-09B	04/13/16 09:00 AM	500HDPEHNO3	1				
DUP-1	Aqueous	-09C	04/13/16 09:00 AM	500HDPEHNO3		1			

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
 Report RA-226, Ra-228 & Combined per Specs DHLRRTX033116S.  
 Quality Control Package Needed: Standard - NELAC Rad Test compliant  
 Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

	<b>Date/Time</b>		<b>Date/Time</b>
Relinquished by: <i>Homer</i>	<i>4/15/16 17:30</i>	Received by: <i>Jonestar</i>	<i>4/15/16 17:30</i>
Relinquished by: _____	_____	Received by: <i>Antony</i>	<i>4/19/16 11:12</i>

*20160368-1 L830737*



DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222 FAX: (512) 388-8229  
 Work Order: 1604165

**Subcontractor:**

ESC Laboratory  
 311 North Aspen  
 Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515  
 FAX:  
 Acct #: DHLRRTX

15-Apr-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
EB-1	Aqueous	-10B	04/13/16 07:35 AM	500HDPEHNO3	1					
EB-1	Aqueous	-10C	04/13/16 07:35 AM	500HDPEHNO3		1				
BAP-62	Aqueous	-11B	04/13/16 09:50 AM	500HDPEHNO3	1					
BAP-62	Aqueous	-11C	04/13/16 09:50 AM	500HDPEHNO3		1				
BAP-61	Aqueous	-12B	04/13/16 10:35 AM	500HDPEHNO3	1					
BAP-61	Aqueous	-12C	04/13/16 10:35 AM	500HDPEHNO3		1				
BAP-60	Aqueous	-13B	04/13/16 11:20 AM	500HDPEHNO3	1					
BAP-60	Aqueous	-13C	04/13/16 11:20 AM	500HDPEHNO3		1				
BAP-59	Aqueous	-14B	04/13/16 12:10 PM	500HDPEHNO3	1					
BAP-59	Aqueous	-14C	04/13/16 12:10 PM	500HDPEHNO3		1				
BAP-58	Aqueous	-15B	04/13/16 01:10 PM	500HDPEHNO3	1					
BAP-58	Aqueous	-15C	04/13/16 01:10 PM	500HDPEHNO3		1				
BAP-57	Aqueous	-16B	04/13/16 02:00 PM	500HDPEHNO3	1					
BAP-57	Aqueous	-16C	04/13/16 02:00 PM	500HDPEHNO3		1				
FMW-4R	Aqueous	-17B	04/13/16 03:15 PM	500HDPEHNO3	1					
FMW-4R	Aqueous	-17C	04/13/16 03:15 PM	500HDPEHNO3		1				

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
 Report RA-226, Ra-228 & Combined per Specs DHLRRTX033116S.  
 Quality Control Package Needed: Standard - NELAC Rad Test compliant  
 Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

<p>Relinquished by: <u>Intorner</u> <u>4/15/16</u> <u>17:30</u></p> <p>Relinquished by: _____</p>	<p>Received by: <u>Locestar</u> <u>4/15/16</u> <u>17:30</u></p> <p>Received by: <u>Antony</u> <u>4/19/16</u> <u>11:12</u></p>
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20160368-2

### SAMPLE LOGIN

Date Received: 04/19/16 11:12:23

Lab Number: 20160368

Due: 05/17/16

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160368-01 B	AMW-13	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-01 A	AMW-13	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20160368-02 A	AMW-14	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-02 B	AMW-14	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20160368-03 A	AMW-23	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-03 B	AMW-23	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20160368-04 B	AMW-22	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-04 A	AMW-22	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20160368-05 A	AMW-20	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-05 B	AMW-20	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20160368-06 A	AMW-10	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-06 B	AMW-10	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20160368-07 A	AMW-21	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-07 B	AMW-21	NPW	04/12/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						

20160368-08 A	BAP-63	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-08 B	BAP-63	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226					SM 7500 Ra B M*			
	Radium-228					EPA 904*/9320*			
20160368-09 B	DUP-1	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-09 A	DUP-1	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226					SM 7500 Ra B M*			
	Radium-228					EPA 904*/9320*			
20160368-10 A	EB-1	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-10 B	EB-1	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226					SM 7500 Ra B M*			
	Radium-228					EPA 904*/9320*			
20160368-11 A	BAP-62	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-11 B	BAP-62	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226					SM 7500 Ra B M*			
	Radium-228					EPA 904*/9320*			
20160368-12 A	BAP-61	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-12 B	BAP-61	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226					SM 7500 Ra B M*			
	Radium-228					EPA 904*/9320*			
20160368-13 A	BAP-60	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-13 B	BAP-60	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226					SM 7500 Ra B M*			
	Radium-228					EPA 904*/9320*			
20160368-14 B	BAP-59	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-14 A	BAP-59	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226					SM 7500 Ra B M*			
	Radium-228					EPA 904*/9320*			
20160368-15 A	BAP-58	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-15 B	BAP-58	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226					SM 7500 Ra B M*			
	Radium-228					EPA 904*/9320*			
20160368-16 A	BAP-57	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160368-16 B	BAP-57	NPW	04/13/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes

Radium-226

SM 7500 Ra B M\*

Radium-228

EPA 904\*/9320\*

20160368-17 B

FMW-4R

NPW

04/13/16

Plastic

500 ml

HNO3, pH < 2



Yes

Yes

20160368-17 A

FMW-4R

NPW

04/13/16

Plastic

500 ml

HNO3, pH < 2

Yes

Yes

Radium-226

SM 7500 Ra B M\*

Radium-228

EPA 904\*/9320\*

CONTAINER INSPECTION

# Coolers 1

Custody Seals Broken

*NO*

Temperature:

*C*

Ice

*NA*

Radiation Survey: <300 cpm

*NA*

SAMPLE INSPECTION

Sample Seal Broken No

Chain of Custody Record

Labels in Tact

Radiation Survey Complete

Anomalies

Inspected By:

*[Signature]*

DATE

*4/19/16*

QA or Designee Review:

*[Signature]*

DATE

*04/19/16*

Sample Custodian Review:

DATE

LUMINANT

Project Notes:



August 03, 2016

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant - Big Brown

Order No.: 1606160

Dear Will Vienne:

DHL Analytical, Inc. received 10 sample(s) on 6/15/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read "John DuPont", is written over a large, light grey watermark that says "LUMINANT" diagonally across the page.

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-16-16



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LUMINANT



2300 Double Creek Dr. ■ Round Rock, TX 78664  
 Phone (512) 388-8222 ■ FAX (512) 388-8229  
 Web: [www.dhlanalytical.com](http://www.dhlanalytical.com)  
 E-Mail: [login@dhlanalytical.com](mailto:login@dhlanalytical.com)



No 71511  
**CHAIN-OF-CUSTODY**

CLIENT: FBW  
 ADDRESS: 2201 DOUBLE CREEK DR ROUND ROCK TX 78664  
 PHONE: 512-671-3434 FAX/E-MAIL: 512-671-3446  
 DATA REPORTED TO: WILL VIENNE  
 ADDITIONAL REPORT COPIES TO: \_\_\_\_\_

DATE: 6-14-16 PAGE 1 OF 1  
 PO #: 5164-A DHL WORK ORDER #: 13 13 1606160  
 PROJECT LOCATION OR NAME: LUMINENT - ~~WATER~~ BROWN  
 CLIENT PROJECT #: 5164-A COLLECTOR: J. BRAYTON

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION				ANALYSES	FIELD NOTES		
							HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> □ NaOH □	UNPRESERVED				
BAP-61	01	6-13-16	0835	W	P	4			X					
BAP-62	02		0925	W	P	4			X					
BAP-60	03		1015	W	P	4			X					
BAP-63	04		1120	W	P	4			X					
BAP-59	05		1210	W	P	4			X					
BAP-58	06		1300	W	P	4			X					
FMW-4R	07		1400	W	P	4			X					
BAP-57	08		1450	W	P	4			X					
EB-1	05		1530	W	P	4			X					
DWP-1	10	6-13-16	1120	W	P	4			X					per John P. Kestler

- ANALYSES
- BTX  MIBP  [METHOD 8021]
  - TPH 1005  TPH 1006  HOLD 1006
  - GRO [METHOD 8015]  DRO [METHOD 8105]
  - VOC 8260  VOC 624  VOC 8260/5035
  - SVOC 8270  PAH 8270  HOLD PAH  SVOC 6251
  - 8270 PEST  PAH 8270  625 PEST/PCB  698 PCB
  - 8270 O-P PEST  8082 PCB  8270 PCB
  - 8321 HERB  T PHOS. AMMONIA
  - METALS 6020  METALS 2008  DISS. METALS
  - RCRA  TX 17
  - PH  HEX CHROM  ALKALINITY  COD
  - CHLORIDE  ANIONS
  - TCLP-SVOC  VOC  PEST  HERB
  - RCRA METALS  RCRA 80 TX 17  Pb
  - TDS  TSS  % MOISTURE  CYANIDE
- SEE ATTACHED**

RELINQUISHED BY: (Signature) [Signature] DATE/TIME 6-14-16 1830 RECEIVED BY: (Signature) Fedex  
 RELINQUISHED BY: (Signature) Fedex DATE/TIME 6/15/16 10:25 RECEIVED BY: (Signature) [Signature]  
 RELINQUISHED BY: (Signature) \_\_\_\_\_ DATE/TIME \_\_\_\_\_ RECEIVED BY: (Signature) \_\_\_\_\_

DHL DISPOSAL @ \$5.00 each     Return    **3**

**TURN AROUND TIME**  
 RUSH  CALL FIRST  
 1 DAY  CALL FIRST  
 2 DAY   
 NORMAL   
 OTHER

**LABORATORY USE ONLY:**  
 RECEIVING TEMP: 5.7 THERM #: 78  
 CUSTODY SEALS:  BROKEN  INTACT  NOT USED  
 CARRIER:  LONE STAR  FEDEX  UPS  OTHER  
 COURIER DELIVERY  
 HAND DELIVERED

John Dupont

---

From: Sara Taube [Sara.Taube@pbwlic.com]  
Sent: Wednesday, July 22, 2015 12:06 PM  
To: John Dupont  
Subject: CCR Appendix III and IV  
Follow Up Flag: Follow up  
Flag Status: Completed

Hi John,

Here are the Appendix III and Appendix IV constituents that we will need to have analyzed under the CCR Rule.

Appendix III

Boron  
Calcium  
Chloride  
Fluoride  
pH  
sulfate  
TDS

Appendix IV

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Fluoride  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Radium 226 and 228

We are looking to have approximately 74 wells sampled 8 times over the course of the next two years. Please let me know if there is any more information you might need.

Cheers,

Sara

10/26/2015



ORIGIN ID:ACTA (512) 671-3434  
JOHN BRAYTON  
PBW  
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 14JUN16  
ACTWGT: 52.40 LB  
CAD: 006993649/SSFE1704  
DIMS: 23x14x14 IN

BILL THIRD PARTY

Part # 156297V-445241001EXPT 04517

TO

DHL  
2300 DOUBLE CREEK DR

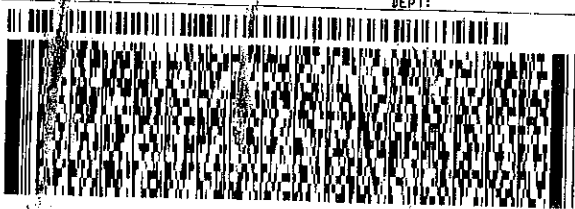
ROUND ROCK TX 78664

(512) 388-8222

REF:

INU:  
PO:

DEPT:



FedEx  
Express



7833 5869 9207

WED - 15 JUN 10:30  
PRIORITY OVERNIGHT

44 BSMA

786  
TX US A



ORIGIN ID:ACTA (512) 671-3434  
JOHN BRAYTON  
PBW  
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 14JUN16  
ACTWGT: 48.90 LB  
CAD: 006993649/SSFE1704  
DIMS: 20x15x15 IN

BILL THIRD PARTY

Part # 156297V-445241001EXPT 04517

TO

DHL  
2300 DOUBLE CREEK DR

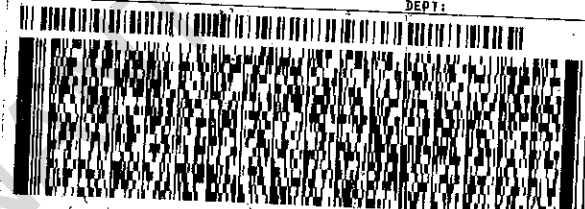
ROUND ROCK TX 78664

(512) 388-8222

REF:

INU:  
PO:

DEPT:



FedEx  
Express

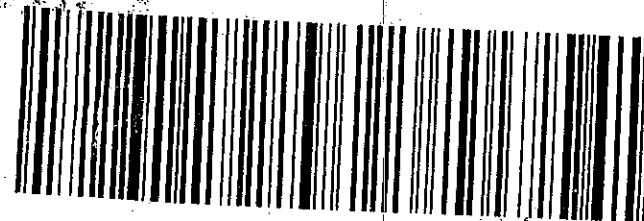


TRK# 7833 5871 0547  
0201

WED - 15 JUN 10:30  
PRIORITY OVERNIGHT

44 BSMA

78664  
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 6/15/2016

Work Order Number 1606160

Received by JT

Checklist completed by: [Signature] 6/15/2016  
Signature Date

Reviewed by [Initials] 6/15/2016  
Initials Date

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  5.7 °C
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 8086
- Adjusted? no Checked by [Signature]
- Water - pH>9 (S) or pH>12 (CN) acceptable upon receipt? Yes  No  NA  LOT #
- Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1606160

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

- Method SW6020A - Metals Analysis
  - Method SW7470A - Mercury Analysis
  - Method E300 - Anions Analysis
  - Method M4500-H+ B - pH of a Water Analysis
  - Method M2540C - TDS Analysis
  - Sub-contract - Radium-228 and Radium-226 analyses by methods E904/9320 and SM 7500 Ra B M.
- Analyzed at ESC Lab Sciences.

**LOG IN**

The samples were received and log-in performed on 6/15/16. A total of 10 samples were received. The samples arrived in good condition and were properly packaged.

**METALS ANALYSIS**

For Metals analysis performed on 6/20/16, 6/24/16 and 6/28/16 (batches 75715 & 75973) the matrix spikes and matrix spike duplicate recoveries were out of control limits for Calcium and/or Boron. These are flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate (batch 75715) was from this work order. The sample selected for the matrix spike and matrix spike duplicate (batch 75973) was not from this work order. The LCSs were within control limits for these analytes. No further corrective actions were taken.

For Metals analysis performed on 6/24/16 and 6/27/16 (batches 75715 & 75973) the RPDs for the serial dilutions were above control limits for Boron or Lithium. These are flagged accordingly. The PDSs were within control limits for these analytes. No further corrective actions were taken.

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**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1606160

**Work Order Sample Summary**

---

<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
1606160-01	BAP-61		06/13/16 08:35 AM	6/15/2016
1606160-02	BAP-62		06/13/16 09:25 AM	6/15/2016
1606160-03	BAP-60		06/13/16 10:15 AM	6/15/2016
1606160-04	BAP-63		06/13/16 11:20 AM	6/15/2016
1606160-05	BAP-59		06/13/16 12:10 PM	6/15/2016
1606160-06	BAP-58		06/13/16 01:00 PM	6/15/2016
1606160-07	FMW-4R		06/13/16 02:00 PM	6/15/2016
1606160-08	BAP-57		06/13/16 02:50 PM	6/15/2016
1606160-09	EB-1		06/13/16 03:30 PM	6/15/2016
1606160-10	DUP-1		06/13/16 11:20 AM	6/15/2016

LUMINANT

**Lab Order:** 1606160  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1606160-01A	BAP-61	06/13/16 08:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/17/16 10:42 AM	75715
	BAP-61	06/13/16 08:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/17/16 10:42 AM	75715
	BAP-61	06/13/16 08:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/17/16 10:42 AM	75715
	BAP-61	06/13/16 08:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/15/16 08:44 AM	75654
1606160-01D	BAP-61	06/13/16 08:35 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-61	06/13/16 08:35 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-61	06/13/16 08:35 AM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	BAP-61	06/13/16 08:35 AM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-02A	BAP-62	06/13/16 09:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/17/16 10:42 AM	75715
	BAP-62	06/13/16 09:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/17/16 10:42 AM	75715
	BAP-62	06/13/16 09:25 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/15/16 08:44 AM	75654
1606160-02D	BAP-62	06/13/16 09:25 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-62	06/13/16 09:25 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-62	06/13/16 09:25 AM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	BAP-62	06/13/16 09:25 AM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-03A	BAP-60	06/13/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/17/16 10:42 AM	75715
	BAP-60	06/13/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/17/16 10:42 AM	75715
	BAP-60	06/13/16 10:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/15/16 08:44 AM	75654
1606160-03D	BAP-60	06/13/16 10:15 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-60	06/13/16 10:15 AM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	BAP-60	06/13/16 10:15 AM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-04A	BAP-63	06/13/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-63	06/13/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-63	06/13/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-63	06/13/16 11:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/15/16 08:44 AM	75654
1606160-04D	BAP-63	06/13/16 11:20 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-63	06/13/16 11:20 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-63	06/13/16 11:20 AM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648

Lab Order: 1606160  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1606160-04D	BAP-63	06/13/16 11:20 AM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-05A	BAP-59	06/13/16 12:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-59	06/13/16 12:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-59	06/13/16 12:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/15/16 08:44 AM	75654
1606160-05D	BAP-59	06/13/16 12:10 PM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-59	06/13/16 12:10 PM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-59	06/13/16 12:10 PM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	BAP-59	06/13/16 12:10 PM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-06A	BAP-58	06/13/16 01:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-58	06/13/16 01:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-58	06/13/16 01:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/21/16 09:19 AM	75769
1606160-06D	BAP-58	06/13/16 01:00 PM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-58	06/13/16 01:00 PM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	BAP-58	06/13/16 01:00 PM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-07A	FMW-4R	06/13/16 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	FMW-4R	06/13/16 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	FMW-4R	06/13/16 02:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/21/16 09:19 AM	75769
1606160-07D	FMW-4R	06/13/16 02:00 PM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	FMW-4R	06/13/16 02:00 PM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	FMW-4R	06/13/16 02:00 PM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	FMW-4R	06/13/16 02:00 PM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-08A	BAP-57	06/13/16 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-57	06/13/16 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	BAP-57	06/13/16 02:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/21/16 09:19 AM	75769
1606160-08D	BAP-57	06/13/16 02:50 PM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	BAP-57	06/13/16 02:50 PM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	BAP-57	06/13/16 02:50 PM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-09A	EB-1	06/13/16 03:30 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793

Lab Order: 1606160  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1606160-09A	EB-1	06/13/16 03:30 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	EB-1	06/13/16 03:30 PM	Equip Blank	SW7470A	Mercury Aq Prep, Total	06/21/16 09:19 AM	75769
1606160-09D	EB-1	06/13/16 03:30 PM	Equip Blank	E300	Anion Preparation	06/22/16 10:22 AM	75798
	EB-1	06/13/16 03:30 PM	Equip Blank	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	EB-1	06/13/16 03:30 PM	Equip Blank	M2540C	TDS Preparation	06/17/16 11:15 AM	75699
1606160-10A	DUP-1	06/13/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	DUP-1	06/13/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	DUP-1	06/13/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/22/16 09:23 AM	75793
	DUP-1	06/13/16 11:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/21/16 09:19 AM	75769
1606160-10D	DUP-1	06/13/16 11:20 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	DUP-1	06/13/16 11:20 AM	Aqueous	E300	Anion Preparation	06/22/16 10:22 AM	75798
	DUP-1	06/13/16 11:20 AM	Aqueous	M4500-H+ B	pH Preparation	06/15/16 11:40 AM	75648
	DUP-1	06/13/16 11:20 AM	Aqueous	M2540C	TDS Preparation	06/17/16 11:15 AM	75699

Lab Order: 1606160  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1606160-01A	BAP-61	Aqueous	SW7470A	Mercury Total: Aqueous	75654	1	06/23/16 12:12 PM	CETAC2_HG_160623 A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75715	1	06/20/16 03:09 PM	ICP-MS4_160620B
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75715	10	06/24/16 11:53 AM	ICP-MS4_160624A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75715	1	06/24/16 11:55 AM	ICP-MS4_160624A
1606160-01D	BAP-61	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 12:08 PM	IC4_160622A
	BAP-61	Aqueous	E300	Anions by IC method - Water	75798	10	06/22/16 03:54 PM	IC4_160622A
	BAP-61	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:08 PM	TITRATOR_160615A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-02A	BAP-62	Aqueous	SW7470A	Mercury Total: Aqueous	75654	1	06/23/16 12:15 PM	CETAC2_HG_160623 A
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75715	10	06/24/16 11:39 AM	ICP-MS4_160624A
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75715	1	06/20/16 02:59 PM	ICP-MS4_160620B
1606160-02D	BAP-62	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 12:23 PM	IC4_160622A
	BAP-62	Aqueous	E300	Anions by IC method - Water	75798	10	06/22/16 04:09 PM	IC4_160622A
	BAP-62	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:12 PM	TITRATOR_160615A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-03A	BAP-60	Aqueous	SW7470A	Mercury Total: Aqueous	75654	1	06/23/16 12:17 PM	CETAC2_HG_160623 A
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75715	1	06/20/16 03:11 PM	ICP-MS4_160620B
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75715	1	06/24/16 11:57 AM	ICP-MS4_160624A
1606160-03D	BAP-60	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 12:38 PM	IC4_160622A
	BAP-60	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:15 PM	TITRATOR_160615A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-04A	BAP-63	Aqueous	SW7470A	Mercury Total: Aqueous	75654	1	06/23/16 12:19 PM	CETAC2_HG_160623 A
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	10	06/28/16 01:27 PM	ICP-MS4_160628C
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	1	06/27/16 05:52 PM	ICP-MS4_160627C
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	100	06/28/16 01:25 PM	ICP-MS4_160628C
1606160-04D	BAP-63	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 12:53 PM	IC4_160622A



Lab Order: 1606160  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1606160-04D	BAP-63	Aqueous	E300	Anions by IC method - Water	75798	10	06/22/16 04:24 PM	IC4_160622A
	BAP-63	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:17 PM	TITRATOR_160615A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-05A	BAP-59	Aqueous	SW7470A	Mercury Total: Aqueous	75654	1	06/23/16 12:21 PM	CETAC2_HG_160623 A
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	1	06/27/16 05:54 PM	ICP-MS4_160627C
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	10	06/28/16 01:29 PM	ICP-MS4_160628C
1606160-05D	BAP-59	Aqueous	E300	Anions by IC method - Water	75798	10	06/22/16 04:39 PM	IC4_160622A
	BAP-59	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 01:08 PM	IC4_160622A
	BAP-59	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:20 PM	TITRATOR_160615A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-06A	BAP-58	Aqueous	SW7470A	Mercury Total: Aqueous	75769	1	06/23/16 12:40 PM	CETAC2_HG_160623 A
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	1	06/27/16 05:56 PM	ICP-MS4_160627C
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	10	06/28/16 01:31 PM	ICP-MS4_160628C
1606160-06D	BAP-58	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 01:23 PM	IC4_160622A
	BAP-58	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:23 PM	TITRATOR_160615A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-07A	FMW-4R	Aqueous	SW7470A	Mercury Total: Aqueous	75769	1	06/23/16 12:51 PM	CETAC2_HG_160623 A
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	10	06/28/16 01:33 PM	ICP-MS4_160628C
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	1	06/27/16 05:58 PM	ICP-MS4_160627C
1606160-07D	FMW-4R	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 01:38 PM	IC4_160622A
	FMW-4R	Aqueous	E300	Anions by IC method - Water	75798	10	06/22/16 04:54 PM	IC4_160622A
	FMW-4R	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:25 PM	TITRATOR_160615A
	FMW-4R	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-08A	BAP-57	Aqueous	SW7470A	Mercury Total: Aqueous	75769	1	06/23/16 12:54 PM	CETAC2_HG_160623 A
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	1	06/27/16 06:29 PM	ICP-MS4_160627C
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	10	06/28/16 01:35 PM	ICP-MS4_160628C

**Lab Order:** 1606160  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1606160-08D	BAP-57	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 01:53 PM	IC4_160622A
	BAP-57	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:28 PM	TITRATOR_160615A
	BAP-57	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-09A	EB-1	Equip Blank	SW7470A	Mercury Total: Aqueous	75769	1	06/23/16 12:56 PM	CETAC2_HG_160623 A
	EB-1	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75793	1	06/27/16 06:31 PM	ICP-MS4_160627C
	EB-1	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	75793	10	06/28/16 01:37 PM	ICP-MS4_160628C
1606160-09D	EB-1	Equip Blank	E300	Anions by IC method - Water	75798	1	06/22/16 02:23 PM	IC4_160622A
	EB-1	Equip Blank	M4500-H+ B	pH	75648	1	06/15/16 02:31 PM	TITRATOR_160615A
	EB-1	Equip Blank	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A
1606160-10A	DUP-1	Aqueous	SW7470A	Mercury Total: Aqueous	75769	1	06/23/16 12:58 PM	CETAC2_HG_160623 A
	DUP-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	1	06/27/16 06:33 PM	ICP-MS4_160627C
	DUP-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	50	06/28/16 01:39 PM	ICP-MS4_160628C
	DUP-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75793	10	06/28/16 01:41 PM	ICP-MS4_160628C
1606160-10D	DUP-1	Aqueous	E300	Anions by IC method - Water	75798	1	06/22/16 02:38 PM	IC4_160622A
	DUP-1	Aqueous	E300	Anions by IC method - Water	75798	10	06/22/16 05:39 PM	IC4_160622A
	DUP-1	Aqueous	M4500-H+ B	pH	75648	1	06/15/16 02:35 PM	TITRATOR_160615A
	DUP-1	Aqueous	M2540C	Total Dissolved Solids	75699	1	06/20/16 08:45 AM	WC_160617A

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** BAP-61  
**Lab ID:** 1606160-01  
**Collection Date:** 06/13/16 08:35 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/23/16 12:12 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/20/16 03:09 PM
Arsenic	0.0184	0.00200	0.00500		mg/L	1	06/20/16 03:09 PM
Barium	0.131	0.00300	0.0100		mg/L	1	06/20/16 03:09 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/20/16 03:09 PM
Boron	0.754	0.0100	0.0300		mg/L	1	06/24/16 11:55 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/20/16 03:09 PM
Calcium	65.6	1.00	3.00		mg/L	10	06/24/16 11:53 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/20/16 03:09 PM
Cobalt	0.00589	0.00300	0.00500		mg/L	1	06/20/16 03:09 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/20/16 03:09 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	06/20/16 03:09 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/20/16 03:09 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/20/16 03:09 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/20/16 03:09 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	209	3.00	10.0		mg/L	10	06/22/16 03:54 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/16 12:08 PM
Sulfate	116	1.00	3.00		mg/L	1	06/22/16 12:08 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.71	0	0		pH Units@18.6°C	1	06/15/16 02:08 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	670	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** BAP-62  
**Lab ID:** 1606160-02  
**Collection Date:** 06/13/16 09:25 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/23/16 12:15 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/20/16 02:59 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/20/16 02:59 PM
Barium	0.0652	0.00300	0.0100		mg/L	1	06/20/16 02:59 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/20/16 02:59 PM
Boron	1.45	0.100	0.300		mg/L	10	06/24/16 11:39 AM
Cadmium	0.000386	0.000300	0.00100	J	mg/L	1	06/20/16 02:59 PM
Calcium	87.0	1.00	3.00		mg/L	10	06/24/16 11:39 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/20/16 02:59 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/20/16 02:59 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/20/16 02:59 PM
Lithium	0.0451	0.00500	0.0100		mg/L	1	06/20/16 02:59 PM
Molybdenum	0.00481	0.00200	0.00500	J	mg/L	1	06/20/16 02:59 PM
Selenium	0.0462	0.00200	0.00500		mg/L	1	06/20/16 02:59 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/20/16 02:59 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	14.6	0.300	1.00		mg/L	1	06/22/16 12:23 PM
Fluoride	0.256	0.100	0.400	J	mg/L	1	06/22/16 12:23 PM
Sulfate	158	10.0	30.0		mg/L	10	06/22/16 04:09 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.17	0	0		pH Units@18.1°C	1	06/15/16 02:12 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	562	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** BAP-60  
**Lab ID:** 1606160-03  
**Collection Date:** 06/13/16 10:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/23/16 12:17 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/20/16 03:11 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/20/16 03:11 PM
Barium	0.0773	0.00300	0.0100		mg/L	1	06/20/16 03:11 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/20/16 03:11 PM
Boron	0.478	0.0100	0.0300		mg/L	1	06/24/16 11:57 AM
Cadmium	0.000304	0.000300	0.00100	J	mg/L	1	06/20/16 03:11 PM
Calcium	12.8	0.100	0.300		mg/L	1	06/20/16 03:11 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/20/16 03:11 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/20/16 03:11 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/20/16 03:11 PM
Lithium	0.0101	0.00500	0.0100		mg/L	1	06/20/16 03:11 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/20/16 03:11 PM
Selenium	0.00219	0.00200	0.00500	J	mg/L	1	06/20/16 03:11 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/20/16 03:11 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	48.4	0.300	1.00		mg/L	1	06/22/16 12:38 PM
Fluoride	0.123	0.100	0.400	J	mg/L	1	06/22/16 12:38 PM
Sulfate	68.6	1.00	3.00		mg/L	1	06/22/16 12:38 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.89	0	0		pH Units@18.3°C	1	06/15/16 02:15 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	357	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** BAP-63  
**Lab ID:** 1606160-04  
**Collection Date:** 06/13/16 11:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.000800	0.000800	0.000200		mg/L	1	06/23/16 12:19 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/27/16 05:52 PM
Arsenic	0.0176	0.00200	0.00500		mg/L	1	06/27/16 05:52 PM
Barium	0.230	0.00300	0.0100		mg/L	1	06/27/16 05:52 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:52 PM
Boron	1.38	0.100	0.300		mg/L	10	06/28/16 01:27 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:52 PM
Calcium	121	10.0	30.0		mg/L	100	06/28/16 01:25 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:52 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/27/16 05:52 PM
Lead	0.000649	0.000300	0.00100	J	mg/L	1	06/27/16 05:52 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	06/27/16 05:52 PM
Molybdenum	0.00972	0.00200	0.00500		mg/L	1	06/27/16 05:52 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:52 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/27/16 05:52 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	56.2	3.00	10.0		mg/L	10	06/22/16 04:24 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/16 12:53 PM
Sulfate	112	1.00	3.00		mg/L	1	06/22/16 12:53 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.06	0	0		pH Units@18.9°C	1	06/15/16 02:17 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	674	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** BAP-59  
**Lab ID:** 1606160-05  
**Collection Date:** 06/13/16 12:10 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>KL</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/23/16 12:21 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>RO</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/27/16 05:54 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:54 PM
Barium	0.0983	0.00300	0.0100		mg/L	1	06/27/16 05:54 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:54 PM
Boron	2.85	0.100	0.300		mg/L	10	06/28/16 01:29 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:54 PM
Calcium	52.5	1.00	3.00		mg/L	10	06/28/16 01:29 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:54 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/27/16 05:54 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:54 PM
Lithium	0.00889	0.00500	0.0100	J	mg/L	1	06/27/16 05:54 PM
Molybdenum	0.00376	0.00200	0.00500	J	mg/L	1	06/27/16 05:54 PM
Selenium	0.00285	0.00200	0.00500	J	mg/L	1	06/27/16 05:54 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/27/16 05:54 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	117	3.00	10.0		mg/L	10	06/22/16 04:39 PM
Fluoride	0.175	0.100	0.400	J	mg/L	1	06/22/16 01:08 PM
Sulfate	244	10.0	30.0		mg/L	10	06/22/16 04:39 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	7.36	0	0		pH Units@19.1°C	1	06/15/16 02:20 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	745	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** BAP-58  
**Lab ID:** 1606160-06  
**Collection Date:** 06/13/16 01:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/23/16 12:40 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/27/16 05:56 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:56 PM
Barium	0.0466	0.00300	0.0100		mg/L	1	06/27/16 05:56 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:56 PM
Boron	1.23	0.100	0.300		mg/L	10	06/28/16 01:31 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:56 PM
Calcium	16.3	1.00	3.00		mg/L	10	06/28/16 01:31 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:56 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/27/16 05:56 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:56 PM
Lithium	0.00683	0.00500	0.0100	J	mg/L	1	06/27/16 05:56 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:56 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:56 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/27/16 05:56 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	32.6	0.300	1.00		mg/L	1	06/22/16 01:23 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/16 01:23 PM
Sulfate	90.1	1.00	3.00		mg/L	1	06/22/16 01:23 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.82	0	0		pH Units@19.3°C	1	06/15/16 02:23 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	332	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** FMW-4R  
**Lab ID:** 1606160-07  
**Collection Date:** 06/13/16 02:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/23/16 12:51 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/27/16 05:58 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:58 PM
Barium	0.0320	0.00300	0.0100		mg/L	1	06/27/16 05:58 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:58 PM
Boron	3.24	0.100	0.300		mg/L	10	06/28/16 01:33 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 05:58 PM
Calcium	47.8	1.00	3.00		mg/L	10	06/28/16 01:33 PM
Chromium	0.00389	0.00200	0.00500	J	mg/L	1	06/27/16 05:58 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/27/16 05:58 PM
Lead	0.000527	0.000300	0.00100	J	mg/L	1	06/27/16 05:58 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	06/27/16 05:58 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:58 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 05:58 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/27/16 05:58 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	92.9	3.00	10.0		mg/L	10	06/22/16 04:54 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/16 01:38 PM
Sulfate	198	10.0	30.0		mg/L	10	06/22/16 04:54 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.66	0	0		pH Units@19.3°C	1	06/15/16 02:25 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	574	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** BAP-57  
**Lab ID:** 1606160-08  
**Collection Date:** 06/13/16 02:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/23/16 12:54 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/27/16 06:29 PM
Arsenic	0.00966	0.00200	0.00500		mg/L	1	06/27/16 06:29 PM
Barium	0.282	0.00300	0.0100		mg/L	1	06/27/16 06:29 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 06:29 PM
Boron	0.459	0.100	0.300		mg/L	10	06/28/16 01:35 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 06:29 PM
Calcium	48.9	1.00	3.00		mg/L	10	06/28/16 01:35 PM
Chromium	0.00208	0.00200	0.00500	J	mg/L	1	06/27/16 06:29 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/27/16 06:29 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 06:29 PM
Lithium	0.0861	0.00500	0.0100		mg/L	1	06/27/16 06:29 PM
Molybdenum	0.00384	0.00200	0.00500	J	mg/L	1	06/27/16 06:29 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 06:29 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/27/16 06:29 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	38.5	0.300	1.00		mg/L	1	06/22/16 01:53 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/16 01:53 PM
Sulfate	62.3	1.00	3.00		mg/L	1	06/22/16 01:53 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.93	0	0		pH Units@19.8°C	1	06/15/16 02:28 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	418	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** EB-1  
**Lab ID:** 1606160-09  
**Collection Date:** 06/13/16 03:30 PM  
**Matrix:** EQUIP BLANK

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/23/16 12:56 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/27/16 06:31 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 06:31 PM
Barium	<0.00300	0.00300	0.0100		mg/L	1	06/27/16 06:31 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 06:31 PM
Boron	0.793	0.100	0.300		mg/L	10	06/28/16 01:37 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 06:31 PM
Calcium	0.111	0.100	0.300	J	mg/L	1	06/27/16 06:31 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 06:31 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/27/16 06:31 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 06:31 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	06/27/16 06:31 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 06:31 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 06:31 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/27/16 06:31 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	1.08	0.300	1.00		mg/L	1	06/22/16 02:23 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/16 02:23 PM
Sulfate	<1.00	1.00	3.00		mg/L	1	06/22/16 02:23 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.46	0	0		pH Units@19.8°C	1	06/15/16 02:31 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	<10.0	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 03-Aug-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1606160

**Client Sample ID:** DUP-1  
**Lab ID:** 1606160-10  
**Collection Date:** 06/13/16 11:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>KL</b>			
Mercury	<0.000800	0.000800	0.000200		mg/L	1	06/23/16 12:58 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/27/16 06:33 PM
Arsenic	0.0224	0.00200	0.00500		mg/L	1	06/27/16 06:33 PM
Barium	0.242	0.00300	0.0100		mg/L	1	06/27/16 06:33 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 06:33 PM
Boron	0.562	0.100	0.300		mg/L	10	06/28/16 01:41 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/27/16 06:33 PM
Calcium	123	5.00	15.0		mg/L	50	06/28/16 01:39 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 06:33 PM
Cobalt	0.00354	0.00300	0.00500	J	mg/L	1	06/27/16 06:33 PM
Lead	0.00118	0.000300	0.00100		mg/L	1	06/27/16 06:33 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	06/27/16 06:33 PM
Molybdenum	0.00961	0.00200	0.00500		mg/L	1	06/27/16 06:33 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/27/16 06:33 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/27/16 06:33 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	56.2	3.00	10.0		mg/L	10	06/22/16 05:39 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/22/16 02:38 PM
Sulfate	112	1.00	3.00		mg/L	1	06/22/16 02:38 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.06	0	0		pH Units@20°C	1	06/15/16 02:35 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	678	10.0	10.0		mg/L	1	06/20/16 08:45 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**CLIENT:** Pastor, Behling & Wheeler

**Work Order:** 1606160

**Project:** Luminant - Big Brown

**ANALYTICAL QC SUMMARY REPORT**

**RunID:** CETAC2\_HG\_160623A

The QC data in batch 75654 applies to the following samples: 1606160-01A, 1606160-02A, 1606160-03A, 1606160-04A, 1606160-05A

Sample ID <b>MB-75654</b>	Batch ID: <b>75654</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:18:18 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.0000800	0.000200								

Sample ID <b>LCS-75654</b>	Batch ID: <b>75654</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:20:34 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00202	0.000200	0.00200	0	101	85	115			

Sample ID <b>LCSD-75654</b>	Batch ID: <b>75654</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:22:50 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00199	0.000200	0.00200	0	99.5	85	115	1.50	15	

Sample ID <b>1606121-06A SD</b>	Batch ID: <b>75654</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:38:42 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.000400	0.00100	0	0				0	10	

Sample ID <b>1606121-06A PDS</b>	Batch ID: <b>75654</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:40:57 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00244	0.000200	0.00250	0	97.6	85	115			

Sample ID <b>1606121-06A MS</b>	Batch ID: <b>75654</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:43:13 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	80	120			

Sample ID <b>1606121-06A MSD</b>	Batch ID: <b>75654</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:45:29 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00200	0.000200	0.00200	0	100	80	120	0.499	15	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: CETAC2\_HG\_160623A**

The QC data in batch 75769 applies to the following samples: 1606160-06A, 1606160-07A, 1606160-08A, 1606160-09A, 1606160-10A

Sample ID <b>MB-75769</b>	Batch ID: <b>75769</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 12:33:39 PM</b>	Prep Date: <b>6/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.0000800	0.000200								

Sample ID <b>LCS-75769</b>	Batch ID: <b>75769</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 12:35:55 PM</b>	Prep Date: <b>6/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00196	0.000200	0.00200	0	98.0	85	115			

Sample ID <b>LCSD-75769</b>	Batch ID: <b>75769</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 12:38:11 PM</b>	Prep Date: <b>6/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	85	115	2.52	15	

Sample ID <b>1606160-06A SD</b>	Batch ID: <b>75769</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 12:42:44 PM</b>	Prep Date: <b>6/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	<0.000400	0.00100	0	0				0	10	

Sample ID <b>1606160-06A PDS</b>	Batch ID: <b>75769</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 12:44:59 PM</b>	Prep Date: <b>6/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00243	0.000200	0.00250	0	97.2	85	115			

Sample ID <b>1606160-06A MS</b>	Batch ID: <b>75769</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 12:47:15 PM</b>	Prep Date: <b>6/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00206	0.000200	0.00200	0	103	80	120			

Sample ID <b>1606160-06A MSD</b>	Batch ID: <b>75769</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 12:49:30 PM</b>	Prep Date: <b>6/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00205	0.000200	0.00200	0	103	80	120	0.487	15	

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_160623A

Sample ID <b>ICV-160623</b>	Batch ID: <b>R86503</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 10:03:19 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00399	0.000200	0.00400	0	99.8	90	110
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Sample ID <b>CCV2-160623</b>	Batch ID: <b>R86503</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:13:45 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00197	0.000200	0.00200	0	98.5	90	110
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Sample ID <b>CCV3-160623</b>	Batch ID: <b>R86503</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 11:56:51 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00196	0.000200	0.00200	0	98.0	90	110
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Sample ID <b>CCV4-160623</b>	Batch ID: <b>R86503</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 12:24:10 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00197	0.000200	0.00200	0	98.5	90	110
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Sample ID <b>CCV5-160623</b>	Batch ID: <b>R86503</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160623A</b>	Analysis Date: <b>6/23/2016 1:12:12 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00198	0.000200	0.00200	0	99.0	90	110
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<b>Qualifiers:</b> B Analyte detected in the associated Method Blank J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit RL Reporting Limit J Analyte detected between SDL and RL	DF Dilution Factor MDL Method Detection Limit R RPD outside accepted control limits S Spike Recovery outside control limits N Parameter not NELAC certified
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160620B**

The QC data in batch 75715 applies to the following samples: 1606160-01A, 1606160-02A, 1606160-03A

Sample ID: <b>MB-75715</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 2:51:00 PM</b>	Prep Date: <b>6/17/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID: <b>LCS-75715</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 2:53:00 PM</b>	Prep Date: <b>6/17/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.192	0.00250	0.200	0	96.0	80	120			
Arsenic	0.201	0.00500	0.200	0	100	80	120			
Barium	0.196	0.0100	0.200	0	98.0	80	120			
Beryllium	0.196	0.00100	0.200	0	98.1	80	120			
Cadmium	0.195	0.00100	0.200	0	97.4	80	120			
Calcium	4.73	0.300	5.00	0	94.5	80	120			
Chromium	0.199	0.00500	0.200	0	99.5	80	120			
Cobalt	0.209	0.00500	0.200	0	105	80	120			
Lead	0.195	0.00100	0.200	0	97.6	80	120			
Lithium	0.205	0.0100	0.200	0	102	80	120			
Molybdenum	0.188	0.00500	0.200	0	94.2	80	120			
Selenium	0.206	0.00500	0.200	0	103	80	120			
Thallium	0.196	0.00150	0.200	0	98.2	80	120			

Sample ID: <b>LCSD-75715</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 2:55:00 PM</b>	Prep Date: <b>6/17/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.192	0.00250	0.200	0	95.8	80	120	0.217	15	
Arsenic	0.199	0.00500	0.200	0	99.4	80	120	0.835	15	
Barium	0.193	0.0100	0.200	0	96.7	80	120	1.32	15	
Beryllium	0.199	0.00100	0.200	0	99.3	80	120	1.18	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160620B**

Sample ID: <b>LCSD-75715</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 2:55:00 PM</b>	Prep Date: <b>6/17/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.195	0.00100	0.200	0	97.6	80	120	0.161	15	
Calcium	4.72	0.300	5.00	0	94.5	80	120	0.015	15	
Chromium	0.200	0.00500	0.200	0	99.8	80	120	0.305	15	
Cobalt	0.207	0.00500	0.200	0	103	80	120	1.17	15	
Lead	0.195	0.00100	0.200	0	97.5	80	120	0.124	15	
Lithium	0.199	0.0100	0.200	0	99.3	80	120	3.03	15	
Molybdenum	0.189	0.00500	0.200	0	94.6	80	120	0.372	15	
Selenium	0.203	0.00500	0.200	0	102	80	120	1.45	15	
Thallium	0.195	0.00150	0.200	0	97.5	80	120	0.713	15	

Sample ID: <b>1606160-02A SD</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 3:01:00 PM</b>	Prep Date: <b>6/17/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	<0.0100	0.0250	0	0				0	10	
Barium	0.0639	0.0500	0	0.0652				2.09	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0.000386				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	0.0421	0.0500	0	0.0451				6.82	10	
Molybdenum	<0.0100	0.0250	0	0.00481				0	10	
Selenium	0.0475	0.0250	0	0.0462				2.77	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID: <b>1606160-02A PDS</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 3:21:00 PM</b>	Prep Date: <b>6/17/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.187	0.00250	0.200	0	93.6	80	120			
Arsenic	0.199	0.00500	0.200	0	99.6	80	120			
Barium	0.259	0.0100	0.200	0.0652	97.0	80	120			
Beryllium	0.190	0.00100	0.200	0	94.9	80	120			
Cadmium	0.192	0.00100	0.200	0.000386	95.7	80	120			
Chromium	0.201	0.00500	0.200	0	100	80	120			
Cobalt	0.205	0.00500	0.200	0	102	80	120			
Lead	0.197	0.00100	0.200	0	98.7	80	120			
Lithium	0.238	0.0100	0.200	0.0451	96.7	80	120			
Molybdenum	0.195	0.00500	0.200	0.00481	95.2	80	120			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160620B**

Sample ID <b>1606160-02A PDS</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 3:21:00 PM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.243	0.00500	0.200	0.0462	98.5	80	120			
Thallium	0.198	0.00150	0.200	0	98.8	80	120			

Sample ID <b>1606160-02A MS</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 3:23:00 PM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.198	0.00250	0.200	0	99.2	80	120			
Arsenic	0.198	0.00500	0.200	0	99.2	80	120			
Barium	0.262	0.0100	0.200	0.0652	98.4	80	120			
Beryllium	0.189	0.00100	0.200	0	94.5	80	120			
Cadmium	0.193	0.00100	0.200	0.000386	96.4	80	120			
Calcium	95.0	0.300	5.00	91.5	69.3	80	120			S
Chromium	0.195	0.00500	0.200	0	97.3	80	120			
Cobalt	0.202	0.00500	0.200	0	101	80	120			
Lead	0.192	0.00100	0.200	0	96.1	80	120			
Lithium	0.236	0.0100	0.200	0.0451	95.6	80	120			
Molybdenum	0.198	0.00500	0.200	0.00481	96.8	80	120			
Selenium	0.240	0.00500	0.200	0.0462	96.9	80	120			
Thallium	0.194	0.00150	0.200	0	97.0	80	120			

Sample ID <b>1606160-02A MSD</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 3:25:00 PM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.197	0.00250	0.200	0	98.6	80	120	0.627	15	
Arsenic	0.202	0.00500	0.200	0	101	80	120	1.88	15	
Barium	0.265	0.0100	0.200	0.0652	100	80	120	1.25	15	
Beryllium	0.194	0.00100	0.200	0	96.9	80	120	2.57	15	
Cadmium	0.194	0.00100	0.200	0.000386	96.6	80	120	0.193	15	
Calcium	98.3	0.300	5.00	91.5	136	80	120	3.45	15	S
Chromium	0.198	0.00500	0.200	0	99.0	80	120	1.74	15	
Cobalt	0.203	0.00500	0.200	0	102	80	120	0.702	15	
Lead	0.198	0.00100	0.200	0	98.9	80	120	2.90	15	
Lithium	0.244	0.0100	0.200	0.0451	99.4	80	120	3.21	15	
Molybdenum	0.199	0.00500	0.200	0.00481	97.3	80	120	0.497	15	
Selenium	0.246	0.00500	0.200	0.0462	99.8	80	120	2.38	15	
Thallium	0.201	0.00150	0.200	0	100	80	120	3.46	15	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
 J Analyte detected between MDL and RL      MDL Method Detection Limit  
 ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
 RL Reporting Limit      S Spike Recovery outside control limits  
 J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160620B**

Sample ID <b>ICV-160620</b>	Batch ID: <b>R86427</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 11:40:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.100	0.00250	0.100	0	100	90	110			
Arsenic	0.0988	0.00500	0.100	0	98.8	90	110			
Barium	0.0988	0.0100	0.100	0	98.8	90	110			
Beryllium	0.100	0.00100	0.100	0	100	90	110			
Cadmium	0.0978	0.00100	0.100	0	97.8	90	110			
Calcium	2.30	0.300	2.50	0	92.2	90	110			
Chromium	0.101	0.00500	0.100	0	101	90	110			
Cobalt	0.105	0.00500	0.100	0	105	90	110			
Lead	0.0982	0.00100	0.100	0	98.2	90	110			
Lithium	0.0971	0.0100	0.100	0	97.1	90	110			
Molybdenum	0.0936	0.00500	0.100	0	93.6	90	110			
Selenium	0.102	0.00500	0.100	0	102	90	110			
Thallium	0.0973	0.00150	0.100	0	97.3	90	110			

Sample ID <b>LCVL-160620</b>	Batch ID: <b>R86427</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 11:48:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00198	0.00250	0.00200	0	99.2	70	130			
Arsenic	0.00512	0.00500	0.00500	0	102	70	130			
Barium	0.00512	0.0100	0.00500	0	102	70	130			
Beryllium	0.000973	0.00100	0.00100	0	97.3	70	130			
Cadmium	0.000984	0.00100	0.00100	0	98.4	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Chromium	0.00518	0.00500	0.00500	0	104	70	130			
Cobalt	0.00529	0.00500	0.00500	0	106	70	130			
Lead	0.000914	0.00100	0.00100	0	91.4	70	130			
Lithium	0.0101	0.0100	0.0100	0	101	70	130			
Molybdenum	0.00477	0.00500	0.00500	0	95.4	70	130			
Selenium	0.00562	0.00500	0.00500	0	112	70	130			
Thallium	0.000990	0.00150	0.00100	0	99.0	70	130			

Sample ID <b>CCV4-160620</b>	Batch ID: <b>R86427</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 2:35:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.197	0.00250	0.200	0	98.6	90	110			
Arsenic	0.201	0.00500	0.200	0	100	90	110			
Barium	0.196	0.0100	0.200	0	98.1	90	110			
Beryllium	0.193	0.00100	0.200	0	96.7	90	110			
Cadmium	0.198	0.00100	0.200	0	98.8	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160620B**

Sample ID <b>CCV4-160620</b>	Batch ID: <b>R86427</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 2:35:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.72	0.300	5.00	0	94.5	90	110			
Chromium	0.199	0.00500	0.200	0	99.3	90	110			
Cobalt	0.209	0.00500	0.200	0	104	90	110			
Lead	0.197	0.00100	0.200	0	98.6	90	110			
Lithium	0.197	0.0100	0.200	0	98.3	90	110			
Molybdenum	0.188	0.00500	0.200	0	94.2	90	110			
Selenium	0.203	0.00500	0.200	0	101	90	110			
Thallium	0.199	0.00150	0.200	0	99.4	90	110			

Sample ID <b>LCVL4-160620</b>	Batch ID: <b>R86427</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 2:47:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00191	0.00250	0.00200	0	95.7	70	130			
Arsenic	0.00508	0.00500	0.00500	0	102	70	130			
Barium	0.00495	0.0100	0.00500	0	99.0	70	130			
Beryllium	0.000827	0.00100	0.00100	0	82.7	70	130			
Cadmium	0.000970	0.00100	0.00100	0	97.0	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Chromium	0.00513	0.00500	0.00500	0	103	70	130			
Cobalt	0.00533	0.00500	0.00500	0	107	70	130			
Lead	0.000880	0.00100	0.00100	0	88.0	70	130			
Lithium	0.00907	0.0100	0.0100	0	90.7	70	130			
Molybdenum	0.00472	0.00500	0.00500	0	94.4	70	130			
Selenium	0.00573	0.00500	0.00500	0	115	70	130			
Thallium	0.000975	0.00150	0.00100	0	97.5	70	130			

Sample ID <b>CCV5-160620</b>	Batch ID: <b>R86427</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 3:27:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.194	0.00250	0.200	0	96.8	90	110			
Arsenic	0.200	0.00500	0.200	0	99.8	90	110			
Barium	0.194	0.0100	0.200	0	97.0	90	110			
Beryllium	0.194	0.00100	0.200	0	96.9	90	110			
Cadmium	0.193	0.00100	0.200	0	96.6	90	110			
Calcium	4.74	0.300	5.00	0	94.9	90	110			
Chromium	0.199	0.00500	0.200	0	99.3	90	110			
Cobalt	0.207	0.00500	0.200	0	103	90	110			
Lead	0.194	0.00100	0.200	0	97.2	90	110			
Lithium	0.199	0.0100	0.200	0	99.7	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160620B**

Sample ID: <b>CCV5-160620</b>	Batch ID: <b>R86427</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 3:27:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.188	0.00500	0.200	0	94.2	90	110			
Selenium	0.202	0.00500	0.200	0	101	90	110			
Thallium	0.197	0.00150	0.200	0	98.6	90	110			

Sample ID: <b>LCVL5-160620</b>	Batch ID: <b>R86427</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160620B</b>	Analysis Date: <b>6/20/2016 3:37:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00205	0.00250	0.00200	0	102	70	130			
Arsenic	0.00507	0.00500	0.00500	0	101	70	130			
Barium	0.00495	0.0100	0.00500	0	99.0	70	130			
Beryllium	0.00103	0.00100	0.00100	0	103	70	130			
Cadmium	0.000972	0.00100	0.00100	0	97.2	70	130			
Calcium	0.0956	0.300	0.100	0	95.6	70	130			
Chromium	0.00514	0.00500	0.00500	0	103	70	130			
Cobalt	0.00531	0.00500	0.00500	0	106	70	130			
Lead	0.000882	0.00100	0.00100	0	88.2	70	130			
Lithium	0.0105	0.0100	0.0100	0	105	70	130			
Molybdenum	0.00475	0.00500	0.00500	0	95.1	70	130			
Selenium	0.00515	0.00500	0.00500	0	103	70	130			
Thallium	0.000981	0.00150	0.00100	0	98.1	70	130			

<b>Qualifiers:</b>	<p><b>B</b> Analyte detected in the associated Method Blank</p> <p><b>J</b> Analyte detected between MDL and RL</p> <p><b>ND</b> Not Detected at the Method Detection Limit</p> <p><b>RL</b> Reporting Limit</p> <p><b>J</b> Analyte detected between SDL and RL</p>	<p><b>DF</b> Dilution Factor</p> <p><b>MDL</b> Method Detection Limit</p> <p><b>R</b> RPD outside accepted control limits</p> <p><b>S</b> Spike Recovery outside control limits</p> <p><b>N</b> Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160624A**

The QC data in batch 75715 applies to the following samples: 1606160-01A, 1606160-02A, 1606160-03A

Sample ID <b>MB-75715</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 11:31:00 AM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	<0.0100	0.0300								
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Sample ID <b>LCS-75715</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 11:33:00 AM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.192	0.0300	0.200	0	96.0	80	120			
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Sample ID <b>LCSD-75715</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 11:35:00 AM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.194	0.0300	0.200	0	96.8	80	120	0.797	15	
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Sample ID <b>1606160-02A SD</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 11:41:00 AM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	1.83	1.50	0	1.45				23.3	10	R
Calcium	87.1	15.0	0	87.0				0.137	10	

Sample ID <b>1606160-02A PDS</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 12:01:00 PM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	3.52	0.300	2.00	1.45	103	80	120			
Calcium	129	3.00	50.0	87.0	83.4	80	120			

Sample ID <b>1606160-02A MS</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 12:03:00 PM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	1.85	0.300	0.200	1.45	199	80	120			S
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Sample ID <b>1606160-02A MSD</b>	Batch ID: <b>75715</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 12:05:00 PM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	1.77	0.300	0.200	1.45	161	80	120	4.14	15	S
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- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160624A**

Sample ID <b>ICV-160624</b>	Batch ID: <b>R86541</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 10:57:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.101	0.0300	0.100	0	101	90	110			
Calcium	2.26	0.300	2.50	0	90.3	90	110			

Sample ID <b>LCVL-160624</b>	Batch ID: <b>R86541</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 11:16:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0208	0.0300	0.0200	0	104	70	130			
Calcium	0.0919	0.300	0.100	0	91.9	70	130			

Sample ID <b>CCV1-160624</b>	Batch ID: <b>R86541</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 12:27:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.200	0.0300	0.200	0	100	90	110			
Calcium	4.56	0.300	5.00	0	91.2	90	110			

Sample ID <b>LCVL1-160624</b>	Batch ID: <b>R86541</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160624A</b>	Analysis Date: <b>6/24/2016 12:33:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0193	0.0300	0.0200	0	96.6	70	130			
Calcium	0.0946	0.300	0.100	0	94.6	70	130			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160627C**

The QC data in batch 75793 applies to the following samples: 1606160-04A, 1606160-05A, 1606160-06A, 1606160-07A, 1606160-08A, 1606160-09A, 1606160-10A

Sample ID <b>MB-75793</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 5:30:00 PM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID <b>LCS-75793</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 5:32:00 PM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.198	0.00250	0.200	0	99.0	80	120			
Arsenic	0.200	0.00500	0.200	0	99.9	80	120			
Barium	0.200	0.0100	0.200	0	99.9	80	120			
Beryllium	0.206	0.00100	0.200	0	103	80	120			
Cadmium	0.202	0.00100	0.200	0	101	80	120			
Calcium	4.71	0.300	5.00	0	94.3	80	120			
Chromium	0.203	0.00500	0.200	0	102	80	120			
Cobalt	0.207	0.00500	0.200	0	103	80	120			
Lead	0.202	0.00100	0.200	0	101	80	120			
Lithium	0.199	0.0100	0.200	0	99.6	80	120			
Molybdenum	0.192	0.00500	0.200	0	95.9	80	120			
Selenium	0.203	0.00500	0.200	0	102	80	120			
Thallium	0.204	0.00150	0.200	0	102	80	120			

Sample ID <b>LCSD-75793</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 5:34:00 PM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	99.8	80	120	0.810	15	
Arsenic	0.198	0.00500	0.200	0	99.2	80	120	0.626	15	
Barium	0.202	0.0100	0.200	0	101	80	120	1.26	15	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_160627C

Sample ID: <b>LCSD-75793</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 5:34:00 PM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.203	0.00100	0.200	0	101	80	120	1.65	15	
Cadmium	0.204	0.00100	0.200	0	102	80	120	1.05	15	
Calcium	4.88	0.300	5.00	0	97.6	80	120	3.49	15	
Chromium	0.202	0.00500	0.200	0	101	80	120	0.483	15	
Cobalt	0.206	0.00500	0.200	0	103	80	120	0.610	15	
Lead	0.202	0.00100	0.200	0	101	80	120	0.407	15	
Lithium	0.198	0.0100	0.200	0	99.2	80	120	0.390	15	
Molybdenum	0.195	0.00500	0.200	0	97.7	80	120	1.79	15	
Selenium	0.200	0.00500	0.200	0	100	80	120	1.48	15	
Thallium	0.202	0.00150	0.200	0	101	80	120	0.520	15	

Sample ID: <b>1606229-01B SD</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 5:40:00 PM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	<0.0100	0.0250	0	0.00448				0	10	
Barium	0.0163	0.0500	0	0.0161				1.78	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	0.0133	0.0250	0	0.0128				3.64	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	0.0767	0.0500	0	0.0657				15.4	10	R
Molybdenum	<0.0100	0.0250	0	0.00296				0	10	
Selenium	0.0355	0.0250	0	0.0337				5.09	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID: <b>1606229-01B PDS</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:00:00 PM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.196	0.00250	0.200	0	98.1	80	120			
Arsenic	0.208	0.00500	0.200	0.00448	102	80	120			
Barium	0.222	0.0100	0.200	0.0160	103	80	120			
Beryllium	0.193	0.00100	0.200	0	96.4	80	120			
Cadmium	0.197	0.00100	0.200	0	98.5	80	120			
Chromium	0.213	0.00500	0.200	0.0128	100	80	120			
Cobalt	0.201	0.00500	0.200	0	100	80	120			
Lead	0.206	0.00100	0.200	0	103	80	120			
Lithium	0.247	0.0100	0.200	0.0657	90.8	80	120			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160627C**

Sample ID <b>1606229-01B PDS</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:00:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.198	0.00500	0.200	0.00296	97.6	80	120			
Selenium	0.234	0.00500	0.200	0.0337	99.9	80	120			
Thallium	0.205	0.00150	0.200	0	102	80	120			

Sample ID <b>1606229-01B MS</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:02:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.207	0.00250	0.200	0	104	80	120			
Arsenic	0.210	0.00500	0.200	0.00448	103	80	120			
Barium	0.220	0.0100	0.200	0.0160	102	80	120			
Beryllium	0.195	0.00100	0.200	0	97.5	80	120			
Cadmium	0.195	0.00100	0.200	0	97.5	80	120			
Calcium	242	0.300	5.00	237	108	80	120			
Chromium	0.213	0.00500	0.200	0.0128	100	80	120			
Cobalt	0.200	0.00500	0.200	0	100	80	120			
Lead	0.206	0.00100	0.200	0	103	80	120			
Lithium	0.269	0.0100	0.200	0.0657	101	80	120			
Molybdenum	0.201	0.00500	0.200	0.00296	99.2	80	120			
Selenium	0.235	0.00500	0.200	0.0337	101	80	120			
Thallium	0.208	0.00150	0.200	0	104	80	120			

Sample ID <b>1606229-01B MSD</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:04:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	102	80	120	1.89	15	
Arsenic	0.209	0.00500	0.200	0.00448	102	80	120	0.616	15	
Barium	0.220	0.0100	0.200	0.0160	102	80	120	0.317	15	
Beryllium	0.197	0.00100	0.200	0	98.6	80	120	1.18	15	
Cadmium	0.198	0.00100	0.200	0	98.9	80	120	1.46	15	
Calcium	236	0.300	5.00	237	-21.4	80	120	2.71	15	S
Chromium	0.212	0.00500	0.200	0.0128	99.5	80	120	0.699	15	
Cobalt	0.197	0.00500	0.200	0	98.4	80	120	1.66	15	
Lead	0.204	0.00100	0.200	0	102	80	120	0.636	15	
Lithium	0.267	0.0100	0.200	0.0657	101	80	120	0.688	15	
Molybdenum	0.200	0.00500	0.200	0.00296	98.3	80	120	0.892	15	
Selenium	0.233	0.00500	0.200	0.0337	99.8	80	120	0.594	15	
Thallium	0.204	0.00150	0.200	0	102	80	120	2.25	15	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160627C**

Sample ID <b>ICV2-160627</b>	Batch ID: <b>R86580</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 5:09:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.103	0.00250	0.100	0	103	90	110			
Arsenic	0.0991	0.00500	0.100	0	99.1	90	110			
Barium	0.102	0.0100	0.100	0	102	90	110			
Beryllium	0.102	0.00100	0.100	0	102	90	110			
Cadmium	0.101	0.00100	0.100	0	101	90	110			
Calcium	2.39	0.300	2.50	0	95.5	90	110			
Chromium	0.104	0.00500	0.100	0	104	90	110			
Cobalt	0.103	0.00500	0.100	0	103	90	110			
Lead	0.102	0.00100	0.100	0	102	90	110			
Lithium	0.0980	0.0100	0.100	0	98.0	90	110			
Molybdenum	0.0965	0.00500	0.100	0	96.5	90	110			
Selenium	0.0989	0.00500	0.100	0	98.9	90	110			
Thallium	0.101	0.00150	0.100	0	101	90	110			

Sample ID <b>ILCVL2-160627</b>	Batch ID: <b>R86580</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 5:15:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00204	0.00250	0.00200	0	102	70	130			
Arsenic	0.00512	0.00500	0.00500	0	102	70	130			
Barium	0.00518	0.0100	0.00500	0	104	70	130			
Beryllium	0.00120	0.00100	0.00100	0	120	70	130			
Cadmium	0.000994	0.00100	0.00100	0	99.4	70	130			
Calcium	0.110	0.300	0.100	0	110	70	130			
Chromium	0.00514	0.00500	0.00500	0	103	70	130			
Cobalt	0.00512	0.00500	0.00500	0	102	70	130			
Lead	0.00104	0.00100	0.00100	0	104	70	130			
Lithium	0.00973	0.0100	0.0100	0	97.3	70	130			
Molybdenum	0.00491	0.00500	0.00500	0	98.2	70	130			
Selenium	0.00513	0.00500	0.00500	0	103	70	130			
Thallium	0.000995	0.00150	0.00100	0	99.5	70	130			

Sample ID <b>CCV4-160627</b>	Batch ID: <b>R86580</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:14:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.206	0.00250	0.200	0	103	90	110			
Arsenic	0.200	0.00500	0.200	0	100	90	110			
Barium	0.206	0.0100	0.200	0	103	90	110			
Beryllium	0.202	0.00100	0.200	0	101	90	110			
Cadmium	0.205	0.00100	0.200	0	103	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_160627C

Sample ID <b>CCV4-160627</b>	Batch ID: <b>R86580</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:14:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.98	0.300	5.00	0	99.6	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			
Cobalt	0.205	0.00500	0.200	0	103	90	110			
Lead	0.204	0.00100	0.200	0	102	90	110			
Lithium	0.208	0.0100	0.200	0	104	90	110			
Molybdenum	0.197	0.00500	0.200	0	98.4	90	110			
Selenium	0.203	0.00500	0.200	0	102	90	110			
Thallium	0.206	0.00150	0.200	0	103	90	110			

Sample ID <b>LCVL4-160627</b>	Batch ID: <b>R86580</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:25:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00218	0.00250	0.00200	0	109	70	130			
Arsenic	0.00522	0.00500	0.00500	0	104	70	130			
Barium	0.00534	0.0100	0.00500	0	107	70	130			
Beryllium	0.000855	0.00100	0.00100	0	85.5	70	130			
Cadmium	0.00106	0.00100	0.00100	0	106	70	130			
Calcium	0.114	0.300	0.100	0	114	70	130			
Chromium	0.00527	0.00500	0.00500	0	105	70	130			
Cobalt	0.00523	0.00500	0.00500	0	105	70	130			
Lead	0.00105	0.00100	0.00100	0	105	70	130			
Lithium	0.00838	0.0100	0.0100	0	83.8	70	130			
Molybdenum	0.00484	0.00500	0.00500	0	96.8	70	130			
Selenium	0.00559	0.00500	0.00500	0	112	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID <b>CCV5-160627</b>	Batch ID: <b>R86580</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:55:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.204	0.00250	0.200	0	102	90	110			
Arsenic	0.202	0.00500	0.200	0	101	90	110			
Barium	0.203	0.0100	0.200	0	102	90	110			
Beryllium	0.204	0.00100	0.200	0	102	90	110			
Cadmium	0.204	0.00100	0.200	0	102	90	110			
Calcium	5.00	0.300	5.00	0	100	90	110			
Chromium	0.205	0.00500	0.200	0	103	90	110			
Cobalt	0.206	0.00500	0.200	0	103	90	110			
Lead	0.201	0.00100	0.200	0	101	90	110			
Lithium	0.205	0.0100	0.200	0	103	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160627C**

Sample ID: <b>CCV5-160627</b>	Batch ID: <b>R86580</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 6:55:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.195	0.00500	0.200	0	97.3	90	110			
Selenium	0.200	0.00500	0.200	0	99.9	90	110			
Thallium	0.202	0.00150	0.200	0	101	90	110			

Sample ID: <b>LCVL5-160627</b>	Batch ID: <b>R86580</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160627C</b>	Analysis Date: <b>6/27/2016 7:05:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00216	0.00250	0.00200	0	108	70	130			
Arsenic	0.00508	0.00500	0.00500	0	102	70	130			
Barium	0.00515	0.0100	0.00500	0	103	70	130			
Beryllium	0.00121	0.00100	0.00100	0	121	70	130			
Cadmium	0.000995	0.00100	0.00100	0	99.5	70	130			
Calcium	0.111	0.300	0.100	0	111	70	130			
Chromium	0.00513	0.00500	0.00500	0	103	70	130			
Cobalt	0.00523	0.00500	0.00500	0	105	70	130			
Lead	0.00104	0.00100	0.00100	0	104	70	130			
Lithium	0.0111	0.0100	0.0100	0	111	70	130			
Molybdenum	0.00475	0.00500	0.00500	0	95.1	70	130			
Selenium	0.00540	0.00500	0.00500	0	108	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160628C**

The QC data in batch 75793 applies to the following samples: 1606160-04A, 1606160-05A, 1606160-06A, 1606160-07A, 1606160-08A, 1606160-09A, 1606160-10A

Sample ID <b>MB-75793</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:13:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	<0.0100	0.0300								

Sample ID <b>LCS-75793</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:15:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.207	0.0300	0.200	0	103	80	120			

Sample ID <b>LCSD-75793</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:17:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.209	0.0300	0.200	0	104	80	120	1.07	15	

Sample ID <b>1606229-01B SD</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:23:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	<2.50	7.50	0	1.29				0	10	
Calcium	242	75.0	0	238				1.62	10	

Sample ID <b>1606229-01B PDS</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:43:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	12.0	1.50	10.0	1.29	107	80	120			
Calcium	472	15.0	250	238	93.3	80	120			

Sample ID <b>1606229-01B MS</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:45:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	1.70	1.50	0.200	1.29	206	80	120			S

Sample ID <b>1606229-01B MSD</b>	Batch ID: <b>75793</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:47:00 PM</b>	Prep Date: <b>6/22/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	1.65	1.50	0.200	1.29	182	80	120	2.82	15	S

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160628C**

Sample ID <b>ICV-160628</b>	Batch ID: <b>R86596</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 11:22:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0991	0.0300	0.100	0	99.1	90	110			
Calcium	2.43	0.300	2.50	0	97.1	90	110			

Sample ID <b>LCVL-160628</b>	Batch ID: <b>R86596</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 11:33:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0251	0.0300	0.0200	0	125	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			

Sample ID <b>CCV2-160628</b>	Batch ID: <b>R86596</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 12:51:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.201	0.0300	0.200	0	101	90	110			
Calcium	4.86	0.300	5.00	0	97.1	90	110			

Sample ID <b>LCVL2-160628</b>	Batch ID: <b>R86596</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:01:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0233	0.0300	0.0200	0	116	70	130			
Calcium	0.0976	0.300	0.100	0	97.6	70	130			

Sample ID <b>CCV3-160628</b>	Batch ID: <b>R86596</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 1:57:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.194	0.0300	0.200	0	97.0	90	110			
Calcium	4.85	0.300	5.00	0	97.0	90	110			

Sample ID <b>LCVL3-160628</b>	Batch ID: <b>R86596</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160628C</b>	Analysis Date: <b>6/28/2016 2:06:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0204	0.0300	0.0200	0	102	70	130			
Calcium	0.0989	0.300	0.100	0	98.9	70	130			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_160622A**

The QC data in batch 75798 applies to the following samples: 1606160-01D, 1606160-02D, 1606160-03D, 1606160-04D, 1606160-05D, 1606160-06D, 1606160-07D, 1606160-08D, 1606160-09D, 1606160-10D

Sample ID: <b>MB-75798</b>	Batch ID: <b>75798</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>IC4_160622A</b>	Analysis Date: <b>6/22/2016 11:03:22 AM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID: <b>LCS-75798</b>	Batch ID: <b>75798</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>IC4_160622A</b>	Analysis Date: <b>6/22/2016 11:18:22 AM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110			
Fluoride	3.93	0.400	4.000	0	98.2	90	110			
Sulfate	31.5	3.00	30.00	0	105	90	110			

Sample ID: <b>LCSD-75798</b>	Batch ID: <b>75798</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>IC4_160622A</b>	Analysis Date: <b>6/22/2016 11:33:22 AM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110	0.051	20	
Fluoride	3.97	0.400	4.000	0	99.1	90	110	0.939	20	
Sulfate	31.4	3.00	30.00	0	105	90	110	0.503	20	

Sample ID: <b>1606160-07DMS</b>	Batch ID: <b>75798</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>IC4_160622A</b>	Analysis Date: <b>6/22/2016 5:09:32 PM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	303	10.0	200.0	92.95	105	90	110			
Fluoride	203	4.00	200.0	0	102	90	110			
Sulfate	418	30.0	200.0	197.9	110	90	110			

Sample ID: <b>1606160-07DMSD</b>	Batch ID: <b>75798</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>IC4_160622A</b>	Analysis Date: <b>6/22/2016 5:24:32 PM</b>	Prep Date: <b>6/22/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	301	10.0	200.0	92.95	104	90	110	0.676	20	
Fluoride	202	4.00	200.0	0	101	90	110	0.640	20	
Sulfate	415	30.0	200.0	197.9	108	90	110	0.754	20	

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_160622A**

Sample ID <b>ICV-160622</b>	Batch ID: <b>R86487</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC4_160622A</b>	Analysis Date: <b>6/22/2016 10:18:36 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.8	1.00	25.00	0	103	90	110			
Fluoride	9.91	0.400	10.00	0	99.1	90	110			
Sulfate	79.2	3.00	75.00	0	106	90	110			

Sample ID <b>CCV1-160622</b>	Batch ID: <b>R86487</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_160622A</b>	Analysis Date: <b>6/22/2016 3:08:46 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110			
Fluoride	3.98	0.400	4.000	0	99.6	90	110			
Sulfate	31.5	3.00	30.00	0	105	90	110			

Sample ID <b>CCV2-160622</b>	Batch ID: <b>R86487</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_160622A</b>	Analysis Date: <b>6/22/2016 6:09:32 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110			
Fluoride	4.04	0.400	4.000	0	101	90	110			
Sulfate	31.9	3.00	30.00	0	106	90	110			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_160615A**

The QC data in batch 75648 applies to the following samples: 1606160-01D, 1606160-02D, 1606160-03D, 1606160-04D, 1606160-05D, 1606160-06D, 1606160-07D, 1606160-08D, 1606160-09D, 1606160-10D

Sample ID: <b>1606145-01D-DUP</b>	Batch ID: <b>75648</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@17.9°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_160615A</b>	Analysis Date: <b>6/15/2016 11:17:00 AM</b>	Prep Date: <b>6/15/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.35	0	0	6.360				0.157	5	

Sample ID: <b>1606160-01D-DUP</b>	Batch ID: <b>75648</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@18°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_160615A</b>	Analysis Date: <b>6/15/2016 2:10:00 PM</b>	Prep Date: <b>6/15/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.74	0	0	6.710				0.446	5	

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_160615A**

Sample ID <b>ICV-160615</b>	Batch ID: <b>R86335</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@22.2°C</b>							
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_160615A</b>	Analysis Date: <b>6/15/2016 8:24:00 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	9.93	0	10.00	0	99.3	99	101			
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Sample ID <b>CCV1-160615</b>	Batch ID: <b>R86335</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@22.2°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160615A</b>	Analysis Date: <b>6/15/2016 11:30:00 AM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	6.98	0	7.000	0	99.7	97.1	102.9			
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Sample ID <b>CCV2-160615</b>	Batch ID: <b>R86335</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.9°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160615A</b>	Analysis Date: <b>6/15/2016 2:32:00 PM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	6.98	0	7.000	0	99.7	97.1	102.9			
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Sample ID <b>CCV3-160615</b>	Batch ID: <b>R86335</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.8°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160615A</b>	Analysis Date: <b>6/15/2016 3:00:00 PM</b>	Prep Date: <b>6/15/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	6.99	0	7.000	0	99.9	97.1	102.9			
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<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1606160  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_160617A**

The QC data in batch 75699 applies to the following samples: 1606160-01D, 1606160-02D, 1606160-03D, 1606160-04D, 1606160-05D, 1606160-06D, 1606160-07D, 1606160-08D, 1606160-09D, 1606160-10D

Sample ID <b>MB-75699</b>	Batch ID: <b>75699</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_160617A</b>	Analysis Date: <b>6/20/2016 8:45:00 AM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-75699</b>	Batch ID: <b>75699</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_160617A</b>	Analysis Date: <b>6/20/2016 8:45:00 AM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	760	10.0	745.6	0	102	90	113			

Sample ID <b>1606145-04D-DUP</b>	Batch ID: <b>75699</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160617A</b>	Analysis Date: <b>6/20/2016 8:45:00 AM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	2300	50.0	0	2205				4.00	5	

Sample ID <b>1606168-01D-DUP</b>	Batch ID: <b>75699</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160617A</b>	Analysis Date: <b>6/20/2016 8:45:00 AM</b>	Prep Date: <b>6/17/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	3850	50.0	0	3780				1.83	5	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

## Case Narrative

### Lab No: 20160581

This report contains the analytical results for the 10 sample(s) received under chain of custody by ESC Lab Sciences on 6/17/2016 11:20:09 AM. These samples are associated with your 1606160 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

This report has been amended from the original. Sample #8 was recounted for Ra-228.



Client : DHL Analytical, Inc.  
 Client Project : 1606160  
 Lab Number : 20160581  
 Date Reported : 08/01/16  
 Date Received : 06/17/16  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20160581-01  
**Client ID** : BAP-61  
**Date Sampled** : 6/13/2016 8:35:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.45 +/- 1.14	1.67	pCi/l			
Radium-226	SM 7500 Ra B M*	0.700 +/- 0.238	0.199	pCi/l	07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	0.814 +/- 0.948	1.49	pCi/l	07/13/16	07/25/16	JR

**Lab ID** : 20160581-02  
**Client ID** : BAP-62  
**Date Sampled** : 6/13/2016 9:25:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.85 +/- 0.884	1.16	pCi/l			
Radium-226	SM 7500 Ra B M*	0.253 +/- 0.158	0.190	pCi/l	07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	1.60 +/- 0.726	0.965	pCi/l	07/13/16	07/19/16	JR

**Lab ID** : 20160581-03  
**Client ID** : BAP-60  
**Date Sampled** : 6/13/2016 10:15:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.000 +/- 0.954	1.82	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.137 +/- 0.194	0.414	pCi/l	07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	-0.027 +/- 0.760	1.41	pCi/l	07/13/16	07/19/16	JR

**Lab ID** : 20160581-04  
**Client ID** : BAP-63  
**Date Sampled** : 6/13/2016 11:20:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.94 +/- 0.807	1.14	pCi/l			
Radium-226	SM 7500 Ra B M*	0.227 +/- 0.126	0.147	pCi/l	07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	2.71 +/- 0.681	0.989	pCi/l	07/13/16	07/19/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1606160  
 Lab Number : 20160581  
 Date Reported : 08/01/16  
 Date Received : 06/17/16  
 Page Number : 3 of 4

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--	--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20160581-05  
**Client ID** : BAP-59  
**Date Sampled** : 6/13/2016 12:10:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.60 +/- 1.02	1.36	pCi/l				
Radium-226	SM 7500 Ra B M*	0.125 +/- 0.143	0.212	pCi/l		07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	1.47 +/- 0.880	1.15	pCi/l		07/13/16	07/19/16	JR

**Lab ID** : 20160581-06  
**Client ID** : BAP-58  
**Date Sampled** : 6/13/2016 1:00:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.835 +/- 0.883	1.23	pCi/l				
Radium-226	SM 7500 Ra B M*	0.044 +/- 0.106	0.177	pCi/l		07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	0.791 +/- 0.777	1.05	pCi/l		07/13/16	07/19/16	JR

**Lab ID** : 20160581-07  
**Client ID** : FMW-4R  
**Date Sampled** : 6/13/2016 2:00:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.12 +/- 1.05	1.75	pCi/l				
Radium-226	SM 7500 Ra B M*	0.369 +/- 0.145	0.106	pCi/l		07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	0.753 +/- 0.904	1.64	pCi/l		07/13/16	07/19/16	JR

**Lab ID** : 20160581-08  
**Client ID** : BAP-57  
**Date Sampled** : 6/13/2016 2:50:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.45 +/- 1.14	1.67	pCi/l				
Radium-226	SM 7500 Ra B M*	0.636 +/- 0.190	0.180	pCi/l		07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	0.814 +/- 0.948	1.49	pCi/l		07/13/16	07/25/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1606160  
 Lab Number : 20160581  
 Date Reported : 08/01/16  
 Date Received : 06/17/16  
 Page Number : 4 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID</b> : 20160581-09							
<b>Client ID</b> : EB-1							
<b>Date Sampled</b> : 6/13/2016 3:30:00 PM							
<b>Matrix</b> : NPW							

### Radiochemical Analyses

Combined Radium		1.07 +/- 0.646	0.857	pCi/l			
Radium-226	SM 7500 Ra B M*	0.057 +/- 0.069	0.101	pCi/l	07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	1.01 +/- 0.577	0.756	pCi/l	07/13/16	07/19/16	JR

**Lab ID** : 20160581-10  
**Client ID** : DUP-1  
**Date Sampled** : 6/13/2016 11:20:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.35 +/- 0.820	1.02	pCi/l			
Radium-226	SM 7500 Ra B M*	0.177 +/- 0.122	0.151	pCi/l	07/01/16	07/07/16	AK
Radium-228	EPA 904*/9320*	2.17 +/- 0.698	0.873	pCi/l	07/13/16	07/19/16	JR

## QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.003	104.0			NC	0.288	120.0	103.0	15.4	R1104
Radium-228	0.122	84.8			NC	0.013	76.1	84.4	9.1	R3831

Lab Approval: 



DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1606160

**Subcontractor:**

ESC Laboratory  
 311 North Aspen  
 Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515  
 FAX:  
 Acct #: DHLRRTX

15-Jun-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests				
					E904.0	SM7500Ra-B M			
BAP-61	Aqueous	-01B	06/13/16 08:35 AM	500HDPEHNO3	1				
BAP-61	Aqueous	-01C	06/13/16 08:35 AM	500HDPEHNO3		1			
BAP-62	Aqueous	-02B	06/13/16 09:25 AM	500HDPEHNO3	1				
BAP-62	Aqueous	-02C	06/13/16 09:25 AM	500HDPEHNO3		1			
BAP-60	Aqueous	-03B	06/13/16 10:15 AM	500HDPEHNO3	1				
BAP-60	Aqueous	-03C	06/13/16 10:15 AM	500HDPEHNO3		1			
BAP-63	Aqueous	-04B	06/13/16 11:20 AM	500HDPEHNO3	1				
BAP-63	Aqueous	-04C	06/13/16 11:20 AM	500HDPEHNO3		1			
BAP-59	Aqueous	-05B	06/13/16 12:10 PM	500HDPEHNO3	1				
BAP-59	Aqueous	-05C	06/13/16 12:10 PM	500HDPEHNO3		1			
BAP-58	Aqueous	-06B	06/13/16 01:00 PM	500HDPEHNO3	1				
BAP-58	Aqueous	-06C	06/13/16 01:00 PM	500HDPEHNO3		1			
FMW-4R	Aqueous	-07B	06/13/16 02:00 PM	500HDPEHNO3	1				
FMW-4R	Aqueous	-07C	06/13/16 02:00 PM	500HDPEHNO3		1			
BAP-57	Aqueous	-08B	06/13/16 02:50 PM	500HDPEHNO3	1				
BAP-57	Aqueous	-08C	06/13/16 02:50 PM	500HDPEHNO3		1			
EB-1	Equip Blank	-09B	06/13/16 03:30 PM	500HDPEHNO3	1				
EB-1	Equip Blank	-09C	06/13/16 03:30 PM	500HDPEHNO3		1			

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
 Report RA-226, Ra-228 & Combined per Specs DHLRRTX033116S.  
 Quality Control Package Needed: Standard - NELAC Rad Test compliant  
 Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

*C 812334*  
*2060581*

	Date/Time		Date/Time
Relinquished by: <i>[Signature]</i>	<i>6/15/16 1730</i>	Received by: <i>[Signature]</i>	<i>6/15/16 1730</i>
Relinquished by: _____	_____	Received by: <i>[Signature]</i>	<i>6/17/16 1120</i>

DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1606160

# CHAIN-OF-CUSTODY RECORD

**Subcontractor:**

ESC Laboratory  
 311 North Aspen  
 Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

Acct #: DHLRRTX

15-Jun-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests				
					E904.0	SM7500Ra-B M			
DUP-1	Aqueous	-10B	06/13/16 11:20 AM	500HDPEHNO3	1				
DUP-1	Aqueous	-10C	06/13/16 11:20 AM	500HDPEHNO3		1			

LUMINANT

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
 Report RA-226, Ra-228 & Combined per Specs DHLRRTX033116S.  
 Quality Control Package Needed: Standard - NELAC Rad Test compliant  
 Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

*2060581*

Relinquished by: <u><i>[Signature]</i></u>	Date/Time: <u>6/15/16 1730</u>	Received by: <u><i>[Signature]</i></u>	Date/Time: <u>6/15/16 1730</u>
Relinquished by: _____	Date/Time: _____	Received by: <u><i>[Signature]</i></u>	Date/Time: <u>6/17/16 1120</u>

### SAMPLE LOGIN

Date Received: 6/17/2016 11:20:0

Lab Number: 20160581

Due:

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160581-01 B	BAP-61	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-01 A	BAP-61	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160581-02 A	BAP-62	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-02 B	BAP-62	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160581-03 A	BAP-60	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-03 B	BAP-60	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160581-04 A	BAP-63	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-04 B	BAP-63	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160581-05 B	BAP-59	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-05 A	BAP-59	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160581-06 B	BAP-58	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-06 A	BAP-58	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160581-07 A	FMW-4R	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-07 B	FMW-4R	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						

20160581-08 A	BAP-57	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-08 B	BAP-57	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160581-09 A	EB-1	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-09 B	EB-1	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160581-10 B	DUP-1	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160581-10 A	DUP-1	NPW	06/13/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						

### CONTAINER INSPECTION

# Coolers 1 Custody Seals Broken  Temperature: NA Ice Radiation Survey: <300 cpm

### SAMPLE INSPECTION

Sample Seal Broken  Chain of Custody Record  Labels in Tact  Radiation Survey Complete

Anomalies

Inspected By: [Signature] DATE 6/17/16

QA or Designee Review: Raymond Thomas DATE 06/17/16

Sample Custodian Review: \_\_\_\_\_ DATE \_\_\_\_\_

Project Notes:



September 29, 2016

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant - Big Brown

Order No.: 1609037

Dear Will Vienne:

DHL Analytical, Inc. received 17 sample(s) on 9/3/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read "John DuPont".

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-16-16



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LUMINANT





2300 Double Creek Dr. ■ Round Rock, TX 78664  
 Phone (512) 388-8222 ■ FAX (512) 388-8229  
 Web: www.dhlanalytical.com  
 E-Mail: login@dhlanalytical.com



No 72311  
**CHAIN-OF-CUSTODY**

CLIENT: PBW  
 ADDRESS: 2201 DOUBLE CREEK DR ROUND ROCK, TX 78664  
 PHONE: 512-671-3434 FAX/E-MAIL: 512-671-3446  
 DATA REPORTED TO: WILL VIENNE  
 ADDITIONAL REPORT COPIES TO: \_\_\_\_\_

DATE: 9-2-16 PAGE 2 OF 2  
 PO #: 5164-A DHL WORK ORDER #: 11009037  
 PROJECT LOCATION OR NAME: LUMINANT-BIG BROWN  
 CLIENT PROJECT #: 5164-A COLLECTOR: J. BRAYDON

Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	PRESERVATION					FIELD NOTES	
							HCl	HNO <sub>3</sub>	H <sub>2</sub> SO <sub>4</sub> NaOH	ICE	UNPRESERVED		
FMW-4R	110	9-2-16	1250	W	P	4	X	X					
EB-1	17	9-2-16	1310	W	P	4	X	X					

- ANALYSES**
- BTEX  MTBE  [METHOD 8211]
  - TPH 1005  TPH 1006  HOLD 1006
  - GRO [METHOD 8015]  DRO [METHOD 8105]
  - VOC 8260  VOC 624  VOC 8260/5835
  - SVOC 8270  PAH 8270  HOLD PAH  SVOC 8250
  - 8270 PEST  625 PEST/PCB  808 PCB
  - 8270 O-P PEST  8082 PCB  8270 PCB
  - 8321 HERB  T PHOS, AMMONIA
  - METALS 6020  METALS 200 &  DISS. METALS
  - RCRA  TX11
  - PH  HEX CHROM  ALKALINITY
  - CHLORIDE  ANIONS
  - TCLP-SVOC  VOC  PEST  HERB
  - TCLP-METALS  RCRA 80  TX-11  Pb
  - RC10 FLASHPOINT  DGAS
  - TDS  TSS  % MOISTURE  CYANIDE
- SEARCHED**

RELINQUISHED BY: (Signature) <u>J. Braydon</u>	DATE/TIME <u>9-2-16 1730</u>	RECEIVED BY: (Signature) <u>Fedex</u>	<b>TURN AROUND TIME</b> RUSH <input type="checkbox"/> CALL FIRST 1 DAY <input type="checkbox"/> CALL FIRST 2 DAY <input type="checkbox"/> NORMAL <input checked="" type="checkbox"/> OTHER <input type="checkbox"/>	<b>LABORATORY USE ONLY:</b> RECEIVING TEMP <u>23/1.7</u> THERM #: <u>78</u> CUSTODY SEALS: <input type="checkbox"/> BROKEN <input checked="" type="checkbox"/> INTACT <input type="checkbox"/> NOT USED CARRIER: <input type="checkbox"/> LONE STAR <input checked="" type="checkbox"/> FEDEX <input type="checkbox"/> UPS <input type="checkbox"/> OTHER <input type="checkbox"/> COURIER DELIVERY <input type="checkbox"/> HAND DELIVERED
RELINQUISHED BY: (Signature) <u>Fedex</u>	DATE/TIME <u>9/3/16 1:30</u>	RECEIVED BY: (Signature) <u>Optimal</u>		
RELINQUISHED BY: (Signature) _____	DATE/TIME _____	RECEIVED BY: (Signature) _____		

DHL DISPOSAL @ \$5.00 each  Return



John Dupont

---

From: Sara Taube [Sara.Taube@pbwflc.com]  
Sent: Wednesday, July 22, 2015 12:05 PM  
To: John Dupont  
Subject: CCR Appendix III and IV  
Follow Up Flag: Follow up  
Flag Status: Completed

Hi John,

Here are the Appendix III and Appendix IV constituents that we will need to have analyzed under the CCR Rule.

Appendix III

Boron  
Calcium  
Chloride  
Fluoride  
pH  
sulfate  
TDS

Appendix IV

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Fluoride  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Radium 226 and 228

We are looking to have approximately 74 wells sampled 3 times over the course of the next two years. Please let me know if there is any more information you might need.

Cheers,

Sara

10/26/2015

ORIGIN ID:FWHA (512) 671-3434  
JOHN BRAYTON  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 02SEP16  
ACTWGT: 55.50 LB  
CAD: 6995323/SSFD1704  
DIMS: 24x14x14 IN  
BILL THIRD PARTY

TO DHL

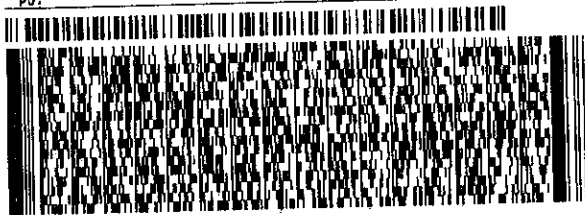
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222  
INU:  
PO:

REF:

DEPT:



J1620160705011V

2 of 3

MPS# 7839 9357 7436  
0263

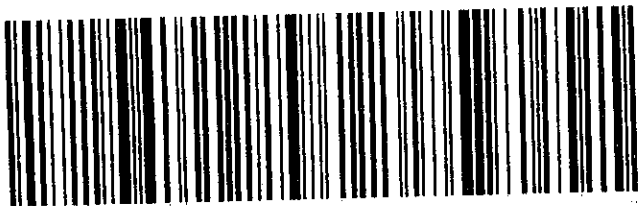
Mstr# 7839 9357 7425

0201

**XO BSMA**

**SATURDAY 12:00P  
PRIORITY OVERNIGHT**

**78664  
TX-US AUS**



ORIGIN ID:FWHA  
JOHN BRAYTON  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

ACTWGT: 55.50 LB  
CAD: 6995323/SSFD1704  
DIMS: 24x14x14 IN  
BILL THIRD PARTY

TO DHL

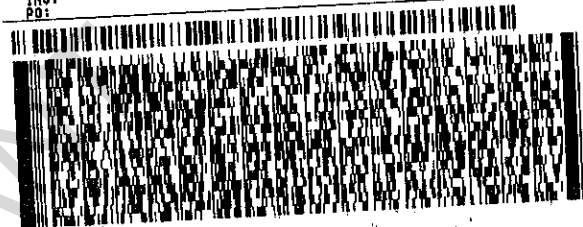
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222  
INU:  
PO:

REF:

DEPT:



AN 1099J091029JF

3 of 3

MPS# 7839 9357 7447  
0263

Mstr# 7839 9357 7425

0201

**XO BSMA**

**SATURDAY 12:00P  
PRIORITY OVERNIGHT**

**78664  
TX-US AUS**



ORIGIN ID:FWHA (512) 671-3434  
JOHN BRAYTON  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 02SEP16  
ACTWGT: 48.00 LB  
CAD: 6995329/SSFO1704  
DIMS: 24x14x14 IN  
BILL THIRD PARTY

1663074-88155547035 09/17

TO **DHL**

**2300 DOUBLE CREEK DR**

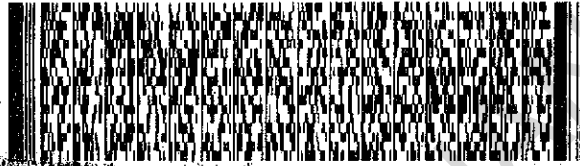
**ROUND ROCK TX 78664**

(512) 388-8222

REF:

INU:

DEPT:



**FedEx**  
Express



16201610010101

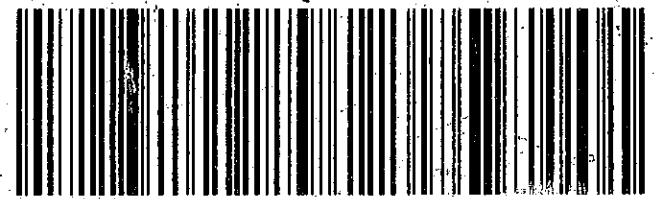
1 of 3

TRK# 7839 7425  
0201

**SATURDAY 12:00P**  
**PRIORITY OVERNIGHT**

## MASTER  
**XO BSMA**

78664  
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 9/3/2016

Work Order Number 1609037

Received by JT

Checklist completed by: [Signature] 9/6/2016  
Signature Date

Reviewed by [Initials] 9/6/2016  
Initials Date

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  2.3 °C
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 8086  
Adjusted? no Checked by [Signature]
- Water - pH>9 (S) or pH>12 (CN) acceptable upon receipt? Yes  No  NA  LOT #  
Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1609037

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

- Method SW6020A - Metals Analysis
- Method SW7470A - Mercury Analysis
- Method E300 - Anions Analysis
- Method M4500-H+ B - pH of a Water Analysis
- Method M2540C - TDS Analysis

Sub-contract - Radium-228 and Radium-226 analyses by methods E904/9320 and SM 7500 Ra B M. Analyzed at ESC Lab Sciences.

LOG IN

The samples were received and log-in performed on 9/3/16. A total of 17 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 9/14/16 (batches 77107 & 77163) the matrix spikes and matrix spike duplicate recoveries were out of control limits for a total of three analytes. These are flagged accordingly in the QC summary report. The samples selected for the matrix spikes and matrix spike duplicates were not from this work order. The LCSs were within control limits for these analytes. No further corrective actions were taken.

For Metals analysis performed on 9/13/16 and 9/14/16 (batches 77107 & 77163) the RPDs for the serial dilutions were slightly above control limits for Boron. These are flagged accordingly in the QC summary report. The PDSs were within control limits for this analyte. No further corrective actions were taken.

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Lab Order:** 1609037

**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1609037-01	BAP-61		09/01/16 10:05 AM	9/3/2016
1609037-02	BAP-60		09/01/16 10:55 AM	9/3/2016
1609037-03	BAP-59		09/01/16 11:45 AM	9/3/2016
1609037-04	BAP-62		09/01/16 12:40 PM	9/3/2016
1609037-05	BAP-63		09/01/16 01:45 PM	9/3/2016
1609037-06	DUP-01		09/01/16 01:45 PM	9/3/2016
1609037-07	BAP-58		09/01/16 02:40 PM	9/3/2016
1609037-08	BAP-57		09/01/16 03:35 PM	9/3/2016
1609037-09	AMW-13		09/01/16 05:40 PM	9/3/2016
1609037-10	AMW-14		09/02/16 07:55 AM	9/3/2016
1609037-11	AMW-23		09/02/16 08:50 AM	9/3/2016
1609037-12	AMW-22		09/02/16 09:40 AM	9/3/2016
1609037-13	AMW-20		09/02/16 10:30 AM	9/3/2016
1609037-14	AMW-10		09/02/16 11:15 AM	9/3/2016
1609037-15	AMW-21		09/02/16 12:05 PM	9/3/2016
1609037-16	FMW-4R		09/02/16 12:50 PM	9/3/2016
1609037-17	EB-1		09/02/16 01:10 PM	9/3/2016

LUMINANT

Lab Order: 1609037  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1609037-01A	BAP-61	09/01/16 10:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-61	09/01/16 10:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-61	09/01/16 10:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-61	09/01/16 10:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-61	09/01/16 10:05 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/08/16 09:31 AM	77131
1609037-01D	BAP-61	09/01/16 10:05 AM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	BAP-61	09/01/16 10:05 AM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	BAP-61	09/01/16 10:05 AM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	BAP-61	09/01/16 10:05 AM	Aqueous	M2540C	TDS Preparation	09/06/16 03:45 PM	77086
1609037-02A	BAP-60	09/01/16 10:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-60	09/01/16 10:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-60	09/01/16 10:55 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/08/16 09:31 AM	77131
1609037-02D	BAP-60	09/01/16 10:55 AM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	BAP-60	09/01/16 10:55 AM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	BAP-60	09/01/16 10:55 AM	Aqueous	M2540C	TDS Preparation	09/06/16 03:45 PM	77086
1609037-03A	BAP-59	09/01/16 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-59	09/01/16 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-59	09/01/16 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-59	09/01/16 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-59	09/01/16 11:45 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/08/16 09:31 AM	77131
1609037-03D	BAP-59	09/01/16 11:45 AM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	BAP-59	09/01/16 11:45 AM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	BAP-59	09/01/16 11:45 AM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	BAP-59	09/01/16 11:45 AM	Aqueous	M2540C	TDS Preparation	09/06/16 03:45 PM	77086
1609037-04A	BAP-62	09/01/16 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-62	09/01/16 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-62	09/01/16 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-62	09/01/16 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107

Lab Order: 1609037  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1609037-04A	BAP-62	09/01/16 12:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/08/16 09:31 AM	77131
1609037-04D	BAP-62	09/01/16 12:40 PM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	BAP-62	09/01/16 12:40 PM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	BAP-62	09/01/16 12:40 PM	Aqueous	M2540C	TDS Preparation	09/06/16 03:45 PM	77086
1609037-05A	BAP-63	09/01/16 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-63	09/01/16 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-63	09/01/16 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-63	09/01/16 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-63	09/01/16 01:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-05D	BAP-63	09/01/16 01:45 PM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	BAP-63	09/01/16 01:45 PM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	BAP-63	09/01/16 01:45 PM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	BAP-63	09/01/16 01:45 PM	Aqueous	M2540C	TDS Preparation	09/06/16 03:45 PM	77086
1609037-06A	DUP-01	09/01/16 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	DUP-01	09/01/16 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	DUP-01	09/01/16 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	DUP-01	09/01/16 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	DUP-01	09/01/16 01:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-06D	DUP-01	09/01/16 01:45 PM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	DUP-01	09/01/16 01:45 PM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133
	DUP-01	09/01/16 01:45 PM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	DUP-01	09/01/16 01:45 PM	Aqueous	M2540C	TDS Preparation	09/06/16 03:45 PM	77086
1609037-07A	BAP-58	09/01/16 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-58	09/01/16 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-58	09/01/16 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-58	09/01/16 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-58	09/01/16 02:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-07D	BAP-58	09/01/16 02:40 PM	Aqueous	E300	Anion Preparation	09/08/16 09:50 AM	77133



Lab Order: 1609037  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1609037-07D	BAP-58	09/01/16 02:40 PM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	BAP-58	09/01/16 02:40 PM	Aqueous	M2540C	TDS Preparation	09/06/16 03:45 PM	77086
1609037-08A	BAP-57	09/01/16 03:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-57	09/01/16 03:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-57	09/01/16 03:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-57	09/01/16 03:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	BAP-57	09/01/16 03:35 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-08D	BAP-57	09/01/16 03:35 PM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	BAP-57	09/01/16 03:35 PM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	BAP-57	09/01/16 03:35 PM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	BAP-57	09/01/16 03:35 PM	Aqueous	M2540C	TDS Preparation	09/06/16 03:45 PM	77086
1609037-09A	AMW-13	09/01/16 05:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-13	09/01/16 05:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-13	09/01/16 05:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-13	09/01/16 05:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-09D	AMW-13	09/01/16 05:40 PM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	AMW-13	09/01/16 05:40 PM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	AMW-13	09/01/16 05:40 PM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	AMW-13	09/01/16 05:40 PM	Aqueous	M2540C	TDS Preparation	09/08/16 03:55 PM	77136
1609037-10A	AMW-14	09/02/16 07:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-14	09/02/16 07:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-14	09/02/16 07:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-14	09/02/16 07:55 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-10D	AMW-14	09/02/16 07:55 AM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	AMW-14	09/02/16 07:55 AM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	AMW-14	09/02/16 07:55 AM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	AMW-14	09/02/16 07:55 AM	Aqueous	M2540C	TDS Preparation	09/08/16 03:55 PM	77136
1609037-11A	AMW-23	09/02/16 08:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107

**Lab Order:** 1609037  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1609037-11A	AMW-23	09/02/16 08:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-23	09/02/16 08:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-23	09/02/16 08:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-23	09/02/16 08:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-11D	AMW-23	09/02/16 08:50 AM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	AMW-23	09/02/16 08:50 AM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	AMW-23	09/02/16 08:50 AM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	AMW-23	09/02/16 08:50 AM	Aqueous	M2540C	TDS Preparation	09/08/16 03:55 PM	77136
1609037-12A	AMW-22	09/02/16 09:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-22	09/02/16 09:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-22	09/02/16 09:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-22	09/02/16 09:40 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-12D	AMW-22	09/02/16 09:40 AM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	AMW-22	09/02/16 09:40 AM	Aqueous	E300	Anion Preparation	09/08/16 09:11 AM	77128
	AMW-22	09/02/16 09:40 AM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	AMW-22	09/02/16 09:40 AM	Aqueous	M2540C	TDS Preparation	09/08/16 03:55 PM	77136
1609037-13A	AMW-20	09/02/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-20	09/02/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-20	09/02/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/07/16 08:05 AM	77107
	AMW-20	09/02/16 10:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-13D	AMW-20	09/02/16 10:30 AM	Aqueous	E300	Anion Preparation	09/12/16 09:08 AM	77165
	AMW-20	09/02/16 10:30 AM	Aqueous	E300	Anion Preparation	09/12/16 09:08 AM	77165
	AMW-20	09/02/16 10:30 AM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	AMW-20	09/02/16 10:30 AM	Aqueous	M2540C	TDS Preparation	09/08/16 03:55 PM	77136
1609037-14A	AMW-10	09/02/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	AMW-10	09/02/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	AMW-10	09/02/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	AMW-10	09/02/16 11:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155

**Lab Order:** 1609037  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1609037-14D	AMW-10	09/02/16 11:15 AM	Aqueous	E300	Anion Preparation	09/12/16 09:08 AM	77165
	AMW-10	09/02/16 11:15 AM	Aqueous	E300	Anion Preparation	09/12/16 09:08 AM	77165
	AMW-10	09/02/16 11:15 AM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	AMW-10	09/02/16 11:15 AM	Aqueous	M2540C	TDS Preparation	09/08/16 03:55 PM	77136
1609037-15A	AMW-21	09/02/16 12:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	AMW-21	09/02/16 12:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	AMW-21	09/02/16 12:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	AMW-21	09/02/16 12:05 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-15D	AMW-21	09/02/16 12:05 PM	Aqueous	E300	Anion Preparation	09/12/16 09:08 AM	77165
	AMW-21	09/02/16 12:05 PM	Aqueous	E300	Anion Preparation	09/12/16 09:08 AM	77165
	AMW-21	09/02/16 12:05 PM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	AMW-21	09/02/16 12:05 PM	Aqueous	M2540C	TDS Preparation	09/08/16 03:55 PM	77136
1609037-16A	FMW-4R	09/02/16 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	FMW-4R	09/02/16 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	FMW-4R	09/02/16 12:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-16D	FMW-4R	09/02/16 12:50 PM	Aqueous	E300	Anion Preparation	09/12/16 09:08 AM	77165
	FMW-4R	09/02/16 12:50 PM	Aqueous	E300	Anion Preparation	09/12/16 09:08 AM	77165
	FMW-4R	09/02/16 12:50 PM	Aqueous	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	FMW-4R	09/02/16 12:50 PM	Aqueous	M2540C	TDS Preparation	09/08/16 03:55 PM	77136
1609037-17A	EB-1	09/02/16 01:10 PM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	09/12/16 08:34 AM	77163
	EB-1	09/02/16 01:10 PM	Equip Blank	SW7470A	Mercury Aq Prep, Total	09/09/16 10:09 AM	77155
1609037-17D	EB-1	09/02/16 01:10 PM	Equip Blank	E300	Anion Preparation	09/12/16 09:08 AM	77165
	EB-1	09/02/16 01:10 PM	Equip Blank	M4500-H+ B	pH Preparation	09/06/16 12:02 PM	77103
	EB-1	09/02/16 01:10 PM	Equip Blank	M2540C	TDS Preparation	09/08/16 03:55 PM	77136

Lab Order: 1609037  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1609037-01A	BAP-61	Aqueous	SW7470A	Mercury Total: Aqueous	77131	1	09/09/16 09:33 AM	CETAC2_HG_160909 A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 04:05 PM	ICP-MS4_160912D
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 06:35 PM	ICP-MS4_160912D
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/15/16 01:48 PM	ICP-MS4_160915C
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/16/16 02:56 PM	ICP-MS4_160916C
1609037-01D	BAP-61	Aqueous	E300	Anions by IC method - Water	77133	1	09/08/16 12:34 PM	IC3_160908A
	BAP-61	Aqueous	E300	Anions by IC method - Water	77133	10	09/08/16 05:18 PM	IC3_160908A
	BAP-61	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:23 PM	TITRATOR_160906A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	77086	1	09/07/16 08:39 AM	WC_160906A
1609037-02A	BAP-60	Aqueous	SW7470A	Mercury Total: Aqueous	77131	1	09/09/16 09:44 AM	CETAC2_HG_160909 A
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/15/16 01:50 PM	ICP-MS4_160915C
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 04:08 PM	ICP-MS4_160912D
1609037-02D	BAP-60	Aqueous	E300	Anions by IC method - Water	77133	1	09/08/16 12:55 PM	IC3_160908A
	BAP-60	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:27 PM	TITRATOR_160906A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	77086	1	09/07/16 08:39 AM	WC_160906A
1609037-03A	BAP-59	Aqueous	SW7470A	Mercury Total: Aqueous	77131	1	09/09/16 09:47 AM	CETAC2_HG_160909 A
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/16/16 02:58 PM	ICP-MS4_160916C
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 04:11 PM	ICP-MS4_160912D
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 06:41 PM	ICP-MS4_160912D
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/15/16 01:52 PM	ICP-MS4_160915C
1609037-03D	BAP-59	Aqueous	E300	Anions by IC method - Water	77133	1	09/08/16 01:16 PM	IC3_160908A
	BAP-59	Aqueous	E300	Anions by IC method - Water	77133	10	09/08/16 05:39 PM	IC3_160908A
	BAP-59	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:30 PM	TITRATOR_160906A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	77086	1	09/07/16 08:39 AM	WC_160906A
1609037-04A	BAP-62	Aqueous	SW7470A	Mercury Total: Aqueous	77131	1	09/09/16 09:49 AM	CETAC2_HG_160909 A
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 04:14 PM	ICP-MS4_160912D

Lab Order: 1609037  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1609037-04A	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/16/16 03:00 PM	ICP-MS4_160916C
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 06:44 PM	ICP-MS4_160912D
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/15/16 01:54 PM	ICP-MS4_160915C
1609037-04D	BAP-62	Aqueous	E300	Anions by IC method - Water	77133	1	09/08/16 01:36 PM	IC3_160908A
	BAP-62	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:32 PM	TITRATOR_160906A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	77086	1	09/07/16 08:39 AM	WC_160906A
1609037-05A	BAP-63	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 09:56 AM	CETAC2_HG_160912 B
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/16/16 03:02 PM	ICP-MS4_160916C
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 04:20 PM	ICP-MS4_160912D
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 06:47 PM	ICP-MS4_160912D
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/15/16 01:56 PM	ICP-MS4_160915C
1609037-05D	BAP-63	Aqueous	E300	Anions by IC method - Water	77133	1	09/08/16 01:57 PM	IC3_160908A
	BAP-63	Aqueous	E300	Anions by IC method - Water	77133	10	09/08/16 05:59 PM	IC3_160908A
	BAP-63	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:35 PM	TITRATOR_160906A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	77086	1	09/07/16 08:39 AM	WC_160906A
1609037-06A	DUP-01	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 09:58 AM	CETAC2_HG_160912 B
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 07:10 PM	ICP-MS4_160912D
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/15/16 02:00 PM	ICP-MS4_160915C
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 04:23 PM	ICP-MS4_160912D
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/16/16 03:04 PM	ICP-MS4_160916C
1609037-06D	DUP-01	Aqueous	E300	Anions by IC method - Water	77133	1	09/08/16 02:18 PM	IC3_160908A
	DUP-01	Aqueous	E300	Anions by IC method - Water	77133	10	09/08/16 06:20 PM	IC3_160908A
	DUP-01	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:38 PM	TITRATOR_160906A
	DUP-01	Aqueous	M2540C	Total Dissolved Solids	77086	1	09/07/16 08:39 AM	WC_160906A
1609037-07A	BAP-58	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:00 AM	CETAC2_HG_160912 B
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/16/16 03:06 PM	ICP-MS4_160916C

Lab Order: 1609037  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1609037-07A	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/15/16 02:02 PM	ICP-MS4_160915C
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 05:44 PM	ICP-MS4_160912D
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 07:13 PM	ICP-MS4_160912D
1609037-07D	BAP-58	Aqueous	E300	Anions by IC method - Water	77133	1	09/08/16 02:38 PM	IC3_160908A
	BAP-58	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:41 PM	TITRATOR_160906A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	77086	1	09/07/16 08:39 AM	WC_160906A
1609037-08A	BAP-57	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 09:44 AM	CETAC2_HG_160912 B
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 05:47 PM	ICP-MS4_160912D
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 07:16 PM	ICP-MS4_160912D
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/15/16 02:04 PM	ICP-MS4_160915C
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/16/16 03:08 PM	ICP-MS4_160916C
1609037-08D	BAP-57	Aqueous	E300	Anions by IC method - Water	77128	1	09/08/16 12:22 PM	IC2_160908A
	BAP-57	Aqueous	E300	Anions by IC method - Water	77128	10	09/08/16 02:14 PM	IC2_160908A
	BAP-57	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:44 PM	TITRATOR_160906A
	BAP-57	Aqueous	M2540C	Total Dissolved Solids	77086	1	09/07/16 08:39 AM	WC_160906A
1609037-09A	AMW-13	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:02 AM	CETAC2_HG_160912 B
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 07:19 PM	ICP-MS4_160912D
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/15/16 02:06 PM	ICP-MS4_160915C
	AMW-13	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 05:50 PM	ICP-MS4_160912D
1609037-09D	AMW-13	Aqueous	E300	Anions by IC method - Water	77128	1	09/08/16 12:36 PM	IC2_160908A
	AMW-13	Aqueous	E300	Anions by IC method - Water	77128	10	09/08/16 02:28 PM	IC2_160908A
	AMW-13	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:47 PM	TITRATOR_160906A
	AMW-13	Aqueous	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A
1609037-10A	AMW-14	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:05 AM	CETAC2_HG_160912 B
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 05:53 PM	ICP-MS4_160912D
	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 07:22 PM	ICP-MS4_160912D

Lab Order: 1609037  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1609037-10A	AMW-14	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/15/16 02:08 PM	ICP-MS4_160915C
1609037-10D	AMW-14	Aqueous	E300	Anions by IC method - Water	77128	1	09/08/16 12:51 PM	IC2_160908A
	AMW-14	Aqueous	E300	Anions by IC method - Water	77128	100	09/08/16 02:43 PM	IC2_160908A
	AMW-14	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:51 PM	TITRATOR_160906A
	AMW-14	Aqueous	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A
1609037-11A	AMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:07 AM	CETAC2_HG_160912 B
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 05:56 PM	ICP-MS4_160912D
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/16/16 03:10 PM	ICP-MS4_160916C
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/15/16 02:21 PM	ICP-MS4_160915C
	AMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 07:25 PM	ICP-MS4_160912D
1609037-11D	AMW-23	Aqueous	E300	Anions by IC method - Water	77128	1	09/08/16 01:06 PM	IC2_160908A
	AMW-23	Aqueous	E300	Anions by IC method - Water	77128	100	09/08/16 02:57 PM	IC2_160908A
	AMW-23	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:52 PM	TITRATOR_160906A
	AMW-23	Aqueous	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A
1609037-12A	AMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:09 AM	CETAC2_HG_160912 B
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 05:59 PM	ICP-MS4_160912D
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 07:28 PM	ICP-MS4_160912D
	AMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/15/16 02:23 PM	ICP-MS4_160915C
1609037-12D	AMW-22	Aqueous	E300	Anions by IC method - Water	77128	1	09/08/16 01:20 PM	IC2_160908A
	AMW-22	Aqueous	E300	Anions by IC method - Water	77128	100	09/08/16 03:12 PM	IC2_160908A
	AMW-22	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:56 PM	TITRATOR_160906A
	AMW-22	Aqueous	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A
1609037-13A	AMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:12 AM	CETAC2_HG_160912 B
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	10	09/12/16 06:02 PM	ICP-MS4_160912D
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/15/16 02:25 PM	ICP-MS4_160915C
	AMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77107	1	09/12/16 07:31 PM	ICP-MS4_160912D

Lab Order: 1609037  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1609037-13D	AMW-20	Aqueous	E300	Anions by IC method - Water	77165	1	09/12/16 11:03 AM	IC2_160912A
	AMW-20	Aqueous	E300	Anions by IC method - Water	77165	100	09/12/16 01:24 PM	IC2_160912A
	AMW-20	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 12:59 PM	TITRATOR_160906A
	AMW-20	Aqueous	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A
1609037-14A	AMW-10	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:14 AM	CETAC2_HG_160912 B
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77163	50	09/14/16 03:14 PM	ICP-MS4_160914B
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77163	1	09/14/16 08:13 PM	ICP-MS4_160914B
	AMW-10	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77163	1	09/16/16 05:02 PM	ICP-MS4_160916C
1609037-14D	AMW-10	Aqueous	E300	Anions by IC method - Water	77165	1	09/12/16 11:18 AM	IC2_160912A
	AMW-10	Aqueous	E300	Anions by IC method - Water	77165	100	09/12/16 01:38 PM	IC2_160912A
	AMW-10	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 01:01 PM	TITRATOR_160906A
	AMW-10	Aqueous	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A
1609037-15A	AMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:21 AM	CETAC2_HG_160912 B
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77163	1	09/14/16 08:16 PM	ICP-MS4_160914B
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77163	1	09/16/16 05:04 PM	ICP-MS4_160916C
	AMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77163	50	09/14/16 03:17 PM	ICP-MS4_160914B
1609037-15D	AMW-21	Aqueous	E300	Anions by IC method - Water	77165	1	09/12/16 11:33 AM	IC2_160912A
	AMW-21	Aqueous	E300	Anions by IC method - Water	77165	100	09/12/16 01:53 PM	IC2_160912A
	AMW-21	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 01:03 PM	TITRATOR_160906A
	AMW-21	Aqueous	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A
1609037-16A	FMW-4R	Aqueous	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:23 AM	CETAC2_HG_160912 B
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77163	1	09/14/16 08:19 PM	ICP-MS4_160914B
	FMW-4R	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77163	10	09/14/16 03:20 PM	ICP-MS4_160914B
1609037-16D	FMW-4R	Aqueous	E300	Anions by IC method - Water	77165	1	09/12/16 11:47 AM	IC2_160912A
	FMW-4R	Aqueous	E300	Anions by IC method - Water	77165	10	09/12/16 02:08 PM	IC2_160912A
	FMW-4R	Aqueous	M4500-H+ B	pH	77103	1	09/06/16 01:04 PM	TITRATOR_160906A



**Lab Order:** 1609037  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1609037-16D	FMW-4R	Aqueous	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A
1609037-17A	EB-1	Equip Blank	SW7470A	Mercury Total: Aqueous	77155	1	09/12/16 10:25 AM	CETAC2_HG_160912 B
	EB-1	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	77163	1	09/14/16 03:23 PM	ICP-MS4_160914B
1609037-17D	EB-1	Equip Blank	E300	Anions by IC method - Water	77165	1	09/12/16 12:02 PM	IC2_160912A
	EB-1	Equip Blank	M4500-H+ B	pH	77103	1	09/06/16 01:08 PM	TITRATOR_160906A
	EB-1	Equip Blank	M2540C	Total Dissolved Solids	77136	1	09/09/16 08:46 AM	WC_160908A

LUMINANT

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** BAP-61  
**Lab ID:** 1609037-01  
**Collection Date:** 09/01/16 10:05 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/09/16 09:33 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 06:35 PM
Arsenic	0.0103	0.00200	0.00500		mg/L	1	09/12/16 06:35 PM
Barium	0.131	0.0300	0.100		mg/L	10	09/12/16 04:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/16/16 02:56 PM
Boron	0.759	0.100	0.300		mg/L	10	09/15/16 01:48 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 06:35 PM
Calcium	67.4	1.00	3.00		mg/L	10	09/12/16 04:05 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:35 PM
Cobalt	0.00618	0.00300	0.00500		mg/L	1	09/12/16 06:35 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 06:35 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	09/16/16 02:56 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:35 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:35 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 06:35 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	190	3.00	10.0		mg/L	10	09/08/16 05:18 PM
Fluoride	0.212	0.100	0.400	J	mg/L	1	09/08/16 12:34 PM
Sulfate	113	1.00	3.00		mg/L	1	09/08/16 12:34 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.54	0	0		pH Units@18.7°C	1	09/06/16 12:23 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	653	10.0	10.0		mg/L	1	09/07/16 08:39 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** BAP-60  
**Lab ID:** 1609037-02  
**Collection Date:** 09/01/16 10:55 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/09/16 09:44 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 04:08 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 04:08 PM
Barium	0.00748	0.00300	0.0100	J	mg/L	1	09/12/16 04:08 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/15/16 01:50 PM
Boron	0.423	0.0100	0.0300		mg/L	1	09/15/16 01:50 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 04:08 PM
Calcium	1.24	0.100	0.300		mg/L	1	09/12/16 04:08 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 04:08 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/12/16 04:08 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 04:08 PM
Lithium	0.00843	0.00500	0.0100	J	mg/L	1	09/15/16 01:50 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 04:08 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 04:08 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 04:08 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	19.4	0.300	1.00		mg/L	1	09/08/16 12:55 PM
Fluoride	0.226	0.100	0.400	J	mg/L	1	09/08/16 12:55 PM
Sulfate	81.4	1.00	3.00		mg/L	1	09/08/16 12:55 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.64	0	0		pH Units@18.6°C	1	09/06/16 12:27 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	373	10.0	10.0		mg/L	1	09/07/16 08:39 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** BAP-59  
**Lab ID:** 1609037-03  
**Collection Date:** 09/01/16 11:45 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	<0.000800	0.000800	0.00200		mg/L	1	09/09/16 09:47 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 06:41 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:41 PM
Barium	0.0727	0.00300	0.0100		mg/L	1	09/12/16 06:41 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/16/16 02:58 PM
Boron	2.54	0.100	0.300		mg/L	10	09/15/16 01:52 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 06:41 PM
Calcium	50.7	1.00	3.00		mg/L	10	09/12/16 04:11 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:41 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/12/16 06:41 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 06:41 PM
Lithium	0.00879	0.00500	0.0100	J	mg/L	1	09/16/16 02:58 PM
Molybdenum	0.00342	0.00200	0.00500	J	mg/L	1	09/12/16 06:41 PM
Selenium	0.00236	0.00200	0.00500	J	mg/L	1	09/12/16 06:41 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 06:41 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	109	3.00	10.0		mg/L	10	09/08/16 05:39 PM
Fluoride	0.314	0.100	0.400	J	mg/L	1	09/08/16 01:16 PM
Sulfate	234	10.0	30.0		mg/L	10	09/08/16 05:39 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.99	0	0		pH Units@18.5°C	1	09/06/16 12:30 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	670	10.0	10.0		mg/L	1	09/07/16 08:39 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** BAP-62  
**Lab ID:** 1609037-04  
**Collection Date:** 09/01/16 12:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/09/16 09:49 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 06:44 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:44 PM
Barium	0.0658	0.00300	0.0100		mg/L	1	09/12/16 06:44 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/16/16 03:00 PM
Boron	0.933	0.100	0.300		mg/L	10	09/15/16 01:54 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 06:44 PM
Calcium	84.2	1.00	3.00		mg/L	10	09/12/16 04:14 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:44 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/12/16 06:44 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 06:44 PM
Lithium	0.0416	0.00500	0.0100		mg/L	1	09/16/16 03:00 PM
Molybdenum	0.00285	0.00200	0.00500	J	mg/L	1	09/12/16 06:44 PM
Selenium	0.0271	0.00200	0.00500		mg/L	1	09/12/16 06:44 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 06:44 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	7.41	0.300	1.00		mg/L	1	09/08/16 01:36 PM
Fluoride	0.359	0.100	0.400	J	mg/L	1	09/08/16 01:36 PM
Sulfate	114	1.00	3.00		mg/L	1	09/08/16 01:36 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.09	0	0		pH Units@18.5°C	1	09/06/16 12:32 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	466	10.0	10.0		mg/L	1	09/07/16 08:39 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** BAP-63  
**Lab ID:** 1609037-05  
**Collection Date:** 09/01/16 01:45 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>RO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 09:56 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>CVD</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 06:47 PM
Arsenic	0.0177	0.00200	0.00500		mg/L	1	09/12/16 06:47 PM
Barium	0.213	0.00300	0.0100		mg/L	1	09/12/16 06:47 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/16/16 03:02 PM
Boron	1.74	0.100	0.300		mg/L	10	09/15/16 01:56 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 06:47 PM
Calcium	127	1.00	3.00		mg/L	10	09/12/16 04:20 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:47 PM
Cobalt	0.00320	0.00300	0.00500	J	mg/L	1	09/12/16 06:47 PM
Lead	0.000406	0.000300	0.00100	J	mg/L	1	09/12/16 06:47 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	09/16/16 03:02 PM
Molybdenum	0.00738	0.00200	0.00500		mg/L	1	09/12/16 06:47 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 06:47 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 06:47 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	68.2	3.00	10.0		mg/L	10	09/08/16 05:59 PM
Fluoride	0.188	0.100	0.400	J	mg/L	1	09/08/16 01:57 PM
Sulfate	134	1.00	3.00		mg/L	1	09/08/16 01:57 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	7.12	0	0		pH Units@18.8°C	1	09/06/16 12:35 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	710	10.0	10.0		mg/L	1	09/07/16 08:39 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** DUP-01  
**Lab ID:** 1609037-06  
**Collection Date:** 09/01/16 01:45 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>RO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 09:58 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>CVD</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 07:10 PM
Arsenic	0.0343	0.00200	0.00500		mg/L	1	09/12/16 07:10 PM
Barium	0.228	0.0300	0.100		mg/L	10	09/12/16 04:23 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/16/16 03:04 PM
Boron	1.73	0.100	0.300		mg/L	10	09/15/16 02:00 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:10 PM
Calcium	128	1.00	3.00		mg/L	10	09/12/16 04:23 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:10 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/12/16 07:10 PM
Lead	0.00108	0.000300	0.00100		mg/L	1	09/12/16 07:10 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	09/16/16 03:04 PM
Molybdenum	0.00976	0.00200	0.00500		mg/L	1	09/12/16 07:10 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:10 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 07:10 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	68.0	3.00	10.0		mg/L	10	09/08/16 06:20 PM
Fluoride	0.181	0.100	0.400	J	mg/L	1	09/08/16 02:18 PM
Sulfate	133	1.00	3.00		mg/L	1	09/08/16 02:18 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	7.11	0	0		pH Units@19.1°C	1	09/06/16 12:38 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	721	10.0	10.0		mg/L	1	09/07/16 08:39 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** BAP-58  
**Lab ID:** 1609037-07  
**Collection Date:** 09/01/16 02:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>RO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 10:00 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>CVD</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 07:13 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:13 PM
Barium	0.0509	0.00300	0.0100		mg/L	1	09/12/16 07:13 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/16/16 03:06 PM
Boron	1.10	0.100	0.300		mg/L	10	09/15/16 02:02 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:13 PM
Calcium	15.9	1.00	3.00		mg/L	10	09/12/16 05:44 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:13 PM
Cobalt	0.00582	0.00300	0.00500		mg/L	1	09/12/16 07:13 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:13 PM
Lithium	0.00691	0.00500	0.0100	J	mg/L	1	09/16/16 03:06 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:13 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:13 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 07:13 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	28.2	0.300	1.00		mg/L	1	09/08/16 02:38 PM
Fluoride	0.126	0.100	0.400	J	mg/L	1	09/08/16 02:38 PM
Sulfate	77.8	1.00	3.00		mg/L	1	09/08/16 02:38 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	6.86	0	0		pH Units@19.3°C	1	09/06/16 12:41 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	334	10.0	10.0		mg/L	1	09/07/16 08:39 AM

**Qualifiers:**

- \* Value exceeds TCLP Maximum Concentration Level
- C Sample Result or QC discussed in the Case Narrative
- E TPH pattern not Gas or Diesel Range Pattern
- MDL Method Detection Limit
- RL Reporting Limit
- N Parameter not NELAC certified
- B Analyte detected in the associated Method Blank
- DF Dilution Factor
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- S Spike Recovery outside control limits



**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** BAP-57  
**Lab ID:** 1609037-08  
**Collection Date:** 09/01/16 03:35 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 09:44 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 07:16 PM
Arsenic	0.00628	0.00200	0.00500		mg/L	1	09/12/16 07:16 PM
Barium	0.208	0.0300	0.100		mg/L	10	09/12/16 05:47 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/16/16 03:08 PM
Boron	0.451	0.100	0.300		mg/L	10	09/15/16 02:04 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:16 PM
Calcium	39.5	1.00	3.00		mg/L	10	09/12/16 05:47 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:16 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/12/16 07:16 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:16 PM
Lithium	0.0197	0.00500	0.0100		mg/L	1	09/16/16 03:08 PM
Molybdenum	0.00209	0.00200	0.00500	J	mg/L	1	09/12/16 07:16 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:16 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 07:16 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	60.6	3.00	10.0		mg/L	10	09/08/16 02:14 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/08/16 12:22 PM
Sulfate	51.9	1.00	3.00		mg/L	1	09/08/16 12:22 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.31	0	0		pH Units@19.6°C	1	09/06/16 12:44 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	449	10.0	10.0		mg/L	1	09/07/16 08:39 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** AMW-13  
**Lab ID:** 1609037-09  
**Collection Date:** 09/01/16 05:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>RO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 10:02 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>CVD</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 07:19 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:19 PM
Barium	0.0749	0.00300	0.0100		mg/L	1	09/12/16 07:19 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/15/16 02:06 PM
Boron	0.130	0.0100	0.0300		mg/L	1	09/15/16 02:06 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:19 PM
Calcium	42.5	1.00	3.00		mg/L	10	09/12/16 05:50 PM
Chromium	0.107	0.0200	0.0500		mg/L	10	09/12/16 05:50 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/12/16 07:19 PM
Lead	0.000933	0.000300	0.00100	J	mg/L	1	09/12/16 07:19 PM
Lithium	0.0118	0.00500	0.0100		mg/L	1	09/15/16 02:06 PM
Molybdenum	0.00710	0.00200	0.00500		mg/L	1	09/12/16 07:19 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:19 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 07:19 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	189	3.00	10.0		mg/L	10	09/08/16 02:28 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/08/16 12:36 PM
Sulfate	114	1.00	3.00		mg/L	1	09/08/16 12:36 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	6.52	0	0		pH Units@19.9°C	1	09/06/16 12:47 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	559	10.0	10.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** AMW-14  
**Lab ID:** 1609037-10  
**Collection Date:** 09/02/16 07:55 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	0.000102	0.0000800	0.000200	J	mg/L	1	09/12/16 10:05 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 07:22 PM
Arsenic	0.00473	0.00200	0.00500	J	mg/L	1	09/12/16 07:22 PM
Barium	0.211	0.0300	0.100		mg/L	10	09/12/16 05:53 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/15/16 02:08 PM
Boron	0.0656	0.0100	0.0300		mg/L	1	09/15/16 02:08 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:22 PM
Calcium	202	1.00	3.00		mg/L	10	09/12/16 05:53 PM
Chromium	0.0522	0.0200	0.0500		mg/L	10	09/12/16 05:53 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/12/16 07:22 PM
Lead	0.00329	0.000300	0.00100		mg/L	1	09/12/16 07:22 PM
Lithium	0.0341	0.00500	0.0100		mg/L	1	09/15/16 02:08 PM
Molybdenum	0.00294	0.00200	0.00500	J	mg/L	1	09/12/16 07:22 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:22 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 07:22 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	891	30.0	100		mg/L	100	09/08/16 02:43 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/08/16 12:51 PM
Sulfate	32.8	1.00	3.00		mg/L	1	09/08/16 12:51 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.19	0	0		pH Units@19.8°C	1	09/06/16 12:51 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	1480	50.0	50.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** AMW-23  
**Lab ID:** 1609037-11  
**Collection Date:** 09/02/16 08:50 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>RO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 10:07 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>CVD</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 07:25 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:25 PM
Barium	0.200	0.0300	0.100		mg/L	10	09/12/16 05:56 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/16/16 03:10 PM
Boron	2.30	0.100	0.300		mg/L	10	09/15/16 02:21 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:25 PM
Calcium	157	1.00	3.00		mg/L	10	09/12/16 05:56 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:25 PM
Cobalt	0.0133	0.00300	0.00500		mg/L	1	09/12/16 07:25 PM
Lead	0.000329	0.000300	0.00100	J	mg/L	1	09/12/16 07:25 PM
Lithium	0.0110	0.00500	0.0100		mg/L	1	09/16/16 03:10 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:25 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:25 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 07:25 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	500	30.0	100		mg/L	100	09/08/16 02:57 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/08/16 01:06 PM
Sulfate	102	1.00	3.00		mg/L	1	09/08/16 01:06 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	6.51	0	0		pH Units@19.8°C	1	09/06/16 12:52 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	1030	50.0	50.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

- \* Value exceeds TCLP Maximum Concentration Level
- C Sample Result or QC discussed in the Case Narrative
- E TPH pattern not Gas or Diesel Range Pattern
- MDL Method Detection Limit
- RL Reporting Limit
- N Parameter not NELAC certified
- B Analyte detected in the associated Method Blank
- DF Dilution Factor
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- S Spike Recovery outside control limits

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** AMW-22  
**Lab ID:** 1609037-12  
**Collection Date:** 09/02/16 09:40 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>RO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 10:09 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>CVD</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 07:28 PM
Arsenic	0.00300	0.00200	0.00500	J	mg/L	1	09/12/16 07:28 PM
Barium	0.292	0.0300	0.100		mg/L	10	09/12/16 05:59 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/15/16 02:23 PM
Boron	0.0453	0.0100	0.0300		mg/L	1	09/15/16 02:23 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:28 PM
Calcium	97.7	1.00	3.00		mg/L	10	09/12/16 05:59 PM
Chromium	0.00651	0.00200	0.00500		mg/L	1	09/12/16 07:28 PM
Cobalt	0.00821	0.00300	0.00500		mg/L	1	09/12/16 07:28 PM
Lead	0.00347	0.000300	0.00100		mg/L	1	09/12/16 07:28 PM
Lithium	0.0157	0.00500	0.0100		mg/L	1	09/15/16 02:23 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:28 PM
Selenium	0.00577	0.00200	0.00500		mg/L	1	09/12/16 07:28 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 07:28 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	405	30.0	100		mg/L	100	09/08/16 03:12 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/08/16 01:20 PM
Sulfate	21.6	1.00	3.00		mg/L	1	09/08/16 01:20 PM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	6.38	0	0		pH Units@19.7°C	1	09/06/16 12:56 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	1170	10.0	10.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** AMW-20  
**Lab ID:** 1609037-13  
**Collection Date:** 09/02/16 10:30 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 10:12 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/12/16 07:31 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:31 PM
Barium	0.336	0.0300	0.100		mg/L	10	09/12/16 06:02 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/15/16 02:25 PM
Boron	0.0517	0.0100	0.0300		mg/L	1	09/15/16 02:25 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/12/16 07:31 PM
Calcium	54.6	1.00	3.00		mg/L	10	09/12/16 06:02 PM
Chromium	0.00969	0.00200	0.00500		mg/L	1	09/12/16 07:31 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/12/16 07:31 PM
Lead	0.000665	0.000300	0.00100	J	mg/L	1	09/12/16 07:31 PM
Lithium	0.0167	0.00500	0.0100		mg/L	1	09/15/16 02:25 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/12/16 07:31 PM
Selenium	0.00278	0.00200	0.00500	J	mg/L	1	09/12/16 07:31 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/12/16 07:31 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	242	30.0	100		mg/L	100	09/12/16 01:24 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/12/16 11:03 AM
Sulfate	17.7	1.00	3.00		mg/L	1	09/12/16 11:03 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.39	0	0		pH Units@19.9°C	1	09/06/16 12:59 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	645	10.0	10.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** AMW-10  
**Lab ID:** 1609037-14  
**Collection Date:** 09/02/16 11:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>RO</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 10:14 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>CVD</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/14/16 08:13 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 08:13 PM
Barium	1.21	0.00300	0.0100		mg/L	1	09/14/16 08:13 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/14/16 08:13 PM
Boron	0.0443	0.0100	0.0300		mg/L	1	09/16/16 05:02 PM
Cadmium	0.000443	0.000300	0.00100	J	mg/L	1	09/14/16 08:13 PM
Calcium	124	5.00	15.0		mg/L	50	09/14/16 03:14 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 08:13 PM
Cobalt	0.00888	0.00300	0.00500		mg/L	1	09/14/16 08:13 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/14/16 08:13 PM
Lithium	0.0179	0.00500	0.0100		mg/L	1	09/14/16 08:13 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 08:13 PM
Selenium	0.135	0.00200	0.00500		mg/L	1	09/14/16 08:13 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/14/16 08:13 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	723	30.0	100		mg/L	100	09/12/16 01:38 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/12/16 11:18 AM
Sulfate	14.5	1.00	3.00		mg/L	1	09/12/16 11:18 AM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	6.12	0	0		pH Units@20°C	1	09/06/16 01:01 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	1990	50.0	50.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** AMW-21  
**Lab ID:** 1609037-15  
**Collection Date:** 09/02/16 12:05 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	0.0000858	0.0000800	0.000200	J	mg/L	1	09/12/16 10:21 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/14/16 08:16 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 08:16 PM
Barium	0.949	0.00300	0.0100		mg/L	1	09/14/16 08:16 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/14/16 08:16 PM
Boron	0.670	0.0100	0.0300		mg/L	1	09/16/16 05:04 PM
Cadmium	0.000370	0.000300	0.00100	J	mg/L	1	09/14/16 08:16 PM
Calcium	108	5.00	15.0		mg/L	50	09/14/16 03:17 PM
Chromium	0.00345	0.00200	0.00500	J	mg/L	1	09/14/16 08:16 PM
Cobalt	0.00641	0.00300	0.00500		mg/L	1	09/14/16 08:16 PM
Lead	0.00112	0.000300	0.00100		mg/L	1	09/14/16 08:16 PM
Lithium	0.0154	0.00500	0.0100		mg/L	1	09/14/16 08:16 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 08:16 PM
Selenium	0.114	0.00200	0.00500		mg/L	1	09/14/16 08:16 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/14/16 08:16 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	566	30.0	100		mg/L	100	09/12/16 01:53 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/12/16 11:33 AM
Sulfate	47.7	1.00	3.00		mg/L	1	09/12/16 11:33 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.39	0	0		pH Units@20.4°C	1	09/06/16 01:03 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	1260	50.0	50.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** FMW-4R  
**Lab ID:** 1609037-16  
**Collection Date:** 09/02/16 12:50 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 10:23 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/14/16 08:19 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 08:19 PM
Barium	0.0348	0.00300	0.0100		mg/L	1	09/14/16 08:19 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/14/16 08:19 PM
Boron	2.70	0.100	0.300		mg/L	10	09/14/16 03:20 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/14/16 08:19 PM
Calcium	37.2	1.00	3.00		mg/L	10	09/14/16 03:20 PM
Chromium	0.00530	0.00200	0.00500		mg/L	1	09/14/16 08:19 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/14/16 08:19 PM
Lead	0.000741	0.000300	0.00100	J	mg/L	1	09/14/16 08:19 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	09/14/16 08:19 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 08:19 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 08:19 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/14/16 08:19 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	76.2	3.00	10.0		mg/L	10	09/12/16 02:08 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/12/16 11:47 AM
Sulfate	144	1.00	3.00		mg/L	1	09/12/16 11:47 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.73	0	0		pH Units@20.6°C	1	09/06/16 01:04 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	467	10.0	10.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 29-Sep-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - Big Brown  
**Project No:** 5164-A  
**Lab Order:** 1609037

**Client Sample ID:** EB-1  
**Lab ID:** 1609037-17  
**Collection Date:** 09/02/16 01:10 PM  
**Matrix:** EQUIP BLANK

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>RO</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/12/16 10:25 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/14/16 03:23 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 03:23 PM
Barium	<0.00300	0.00300	0.0100		mg/L	1	09/14/16 03:23 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/14/16 03:23 PM
Boron	0.181	0.0100	0.0300		mg/L	1	09/14/16 03:23 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/14/16 03:23 PM
Calcium	<0.100	0.100	0.300		mg/L	1	09/14/16 03:23 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 03:23 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/14/16 03:23 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/14/16 03:23 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	09/14/16 03:23 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 03:23 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/14/16 03:23 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/14/16 03:23 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	0.888	0.300	1.00	J	mg/L	1	09/12/16 12:02 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/12/16 12:02 PM
Sulfate	<1.00	1.00	3.00		mg/L	1	09/12/16 12:02 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.23	0	0		pH Units@20.9°C	1	09/06/16 01:08 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	<10.0	10.0	10.0		mg/L	1	09/09/16 08:46 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

**ANALYTICAL QC SUMMARY REPORT**

**RunID: CETAC2\_HG\_160909A**

The QC data in batch 77131 applies to the following samples: 1609037-01A, 1609037-02A, 1609037-03A, 1609037-04A

Sample ID <b>MB-77131</b>	Batch ID: <b>77131</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:15:21 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID <b>LCS-77131</b>	Batch ID: <b>77131</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:19:53 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00194 0.000200 0.00200 0 97.0 85 115

Sample ID <b>LCS-77131</b>	Batch ID: <b>77131</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:22:09 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00194 0.000200 0.00200 0 97.0 85 115 0 15

Sample ID <b>1609037-01A SD</b>	Batch ID: <b>77131</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:35:44 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.000400 0.00100 0 0 97.0 85 115 0 10

Sample ID <b>1609037-01A PDS</b>	Batch ID: <b>77131</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:38:00 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00232 0.000200 0.00250 0 92.8 85 115

Sample ID <b>1609037-01A MS</b>	Batch ID: <b>77131</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:40:16 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00194 0.000200 0.00200 0 97.0 80 120

Sample ID <b>1609037-01A MSD</b>	Batch ID: <b>77131</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:42:31 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00192 0.000200 0.00200 0 96.0 80 120 1.04 15

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_160909A

Sample ID <b>ICV-160909</b>	Batch ID: <b>R88024</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:10:47 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00373	0.000200	0.00400	0	93.2	90	110			

Sample ID <b>CCV1-160909</b>	Batch ID: <b>R88024</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160909A</b>	Analysis Date: <b>9/9/2016 9:56:10 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00187	0.000200	0.00200	0	93.5	90	110			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: CETAC2\_HG\_160912B**

The QC data in batch 77155 applies to the following samples: 1609037-05A, 1609037-06A, 1609037-07A, 1609037-08A, 1609037-09A, 1609037-10A, 1609037-11A, 1609037-12A, 1609037-13A, 1609037-14A, 1609037-15A, 1609037-16A, 1609037-17A

Sample ID <b>MB-77155</b>	Batch ID: <b>77155</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 9:32:32 AM</b>	Prep Date: <b>9/9/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID <b>LCS-77155</b>	Batch ID: <b>77155</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 9:34:48 AM</b>	Prep Date: <b>9/9/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00207 0.000200 0.00200 0 104 85 115

Sample ID <b>LCSD-77155</b>	Batch ID: <b>77155</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 9:42:35 AM</b>	Prep Date: <b>9/9/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00206 0.000200 0.00200 0 103 85 115 0.484 15

Sample ID <b>1609037-08A SD</b>	Batch ID: <b>77155</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 9:47:08 AM</b>	Prep Date: <b>9/9/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.000400 0.00100 0 0 0 0 10

Sample ID <b>1609037-08A PDS</b>	Batch ID: <b>77155</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 9:49:24 AM</b>	Prep Date: <b>9/9/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00245 0.000200 0.00250 0 98.0 85 115

Sample ID <b>1609037-08A MS</b>	Batch ID: <b>77155</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 9:51:39 AM</b>	Prep Date: <b>9/9/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00209 0.000200 0.00200 0 104 80 120

Sample ID <b>1609037-08A MSD</b>	Batch ID: <b>77155</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 9:53:55 AM</b>	Prep Date: <b>9/9/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00205 0.000200 0.00200 0 103 80 120 1.93 15

**Qualifiers:** B Analyte detected in the associated Method Blank DF Dilution Factor  
 J Analyte detected between MDL and RL MDL Method Detection Limit  
 ND Not Detected at the Method Detection Limit R RPD outside accepted control limits  
 RL Reporting Limit S Spike Recovery outside control limits  
 J Analyte detected between SDL and RL N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_160912B

Sample ID <b>ICV-160912</b>	Batch ID: <b>R88046</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 9:27:57 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00382	0.000200	0.00400	0	95.5	90	110			
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Sample ID <b>CCV1-160912</b>	Batch ID: <b>R88046</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 10:16:37 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00205	0.000200	0.00200	0	103	90	110			
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Sample ID <b>CCV2-160912</b>	Batch ID: <b>R88046</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_160912B</b>	Analysis Date: <b>9/12/2016 10:37:06 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00204	0.000200	0.00200	0	102	90	110			
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LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160912D**

The QC data in batch 77107 applies to the following samples: 1609037-01A, 1609037-02A, 1609037-03A, 1609037-04A, 1609037-05A, 1609037-06A, 1609037-07A, 1609037-08A, 1609037-09A, 1609037-10A, 1609037-11A, 1609037-12A, 1609037-13A

Sample ID <b>MB-77107</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 3:37:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID <b>LCS-77107</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 3:40:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	80	120			
Arsenic	0.201	0.00500	0.200	0	101	80	120			
Barium	0.195	0.0100	0.200	0	97.3	80	120			
Cadmium	0.202	0.00100	0.200	0	101	80	120			
Calcium	4.76	0.300	5.00	0	95.2	80	120			
Chromium	0.209	0.00500	0.200	0	104	80	120			
Cobalt	0.208	0.00500	0.200	0	104	80	120			
Lead	0.196	0.00100	0.200	0	98.2	80	120			
Molybdenum	0.198	0.00500	0.200	0	99.2	80	120			
Selenium	0.197	0.00500	0.200	0	98.4	80	120			
Thallium	0.206	0.00150	0.200	0	103	80	120			

Sample ID <b>LCSD-77107</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 3:43:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.206	0.00250	0.200	0	103	80	120	2.09	15	
Arsenic	0.205	0.00500	0.200	0	102	80	120	1.75	15	
Barium	0.197	0.0100	0.200	0	98.4	80	120	1.08	15	
Cadmium	0.203	0.00100	0.200	0	101	80	120	0.423	15	
Calcium	4.86	0.300	5.00	0	97.2	80	120	2.11	15	
Chromium	0.209	0.00500	0.200	0	104	80	120	0.002	15	
Cobalt	0.210	0.00500	0.200	0	105	80	120	0.920	15	

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160912D**

Sample ID <b>LCSD-77107</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 3:43:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.198	0.00100	0.200	0	98.8	80	120	0.629	15	
Molybdenum	0.199	0.00500	0.200	0	99.5	80	120	0.277	15	
Selenium	0.201	0.00500	0.200	0	100	80	120	2.05	15	
Thallium	0.210	0.00150	0.200	0	105	80	120	2.35	15	

Sample ID <b>1609036-02A SD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 3:52:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.410	0.500	0	0.402				1.93	10	
Calcium	72.4	15.0	0	70.5				2.67	10	
Molybdenum	<0.100	0.250	0	0.0541				0	10	
Selenium	<0.100	0.250	0	0				0	10	

Sample ID <b>1609036-02A PDS</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 4:26:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	2.33	0.100	2.00	0.402	96.3	80	120			
Calcium	115	3.00	50.0	70.5	89.2	80	120			
Molybdenum	1.93	0.0500	2.00	0.0541	94.0	80	120			
Selenium	1.91	0.0500	2.00	0	95.4	80	120			

Sample ID <b>1609036-02A MS</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 4:29:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	75.9	3.00	5.00	70.5	107	80	120			

Sample ID <b>1609036-02A MSD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 4:34:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	76.4	3.00	5.00	70.5	117	80	120	0.652	15	

Sample ID <b>1609036-02A SD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:20:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0.00227				0	10	
Arsenic	<0.0100	0.0250	0	0.00847				0	10	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160912D**

Sample ID <b>1609036-02A SD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:20:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	0.0105	0.0250	0	0.00968				8.57	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID <b>1609036-02A PDS</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:50:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.210	0.00250	0.200	0.00227	104	80	120			
Arsenic	0.211	0.00500	0.200	0.00847	101	80	120			
Cadmium	0.196	0.00100	0.200	0	97.9	80	120			
Chromium	0.224	0.00500	0.200	0.00968	107	80	120			
Cobalt	0.206	0.00500	0.200	0	103	80	120			
Lead	0.194	0.00100	0.200	0	97.1	80	120			
Thallium	0.192	0.00150	0.200	0	95.9	80	120			

Sample ID <b>1609036-02A MS</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:52:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.215	0.00250	0.200	0.00227	106	80	120			
Arsenic	0.212	0.00500	0.200	0.00847	102	80	120			
Barium	0.633	0.0100	0.200	0.397	118	80	120			
Cadmium	0.201	0.00100	0.200	0	101	80	120			
Chromium	0.212	0.00500	0.200	0.00968	101	80	120			
Cobalt	0.201	0.00500	0.200	0	100	80	120			
Lead	0.198	0.00100	0.200	0	99.0	80	120			
Molybdenum	0.261	0.00500	0.200	0.0509	105	80	120			
Selenium	0.203	0.00500	0.200	0.00707	97.9	80	120			
Thallium	0.198	0.00150	0.200	0	98.9	80	120			

Sample ID <b>1609036-02A MSD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:55:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.207	0.00250	0.200	0.00227	102	80	120	3.63	15	
Arsenic	0.210	0.00500	0.200	0.00847	101	80	120	0.896	15	
Barium	0.609	0.0100	0.200	0.397	106	80	120	3.87	15	
Cadmium	0.195	0.00100	0.200	0	97.3	80	120	3.46	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160912D**

Sample ID: <b>1609036-02A MSD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:55:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.215	0.00500	0.200	0.00968	103	80	120	1.59	15	
Cobalt	0.200	0.00500	0.200	0	100	80	120	0.464	15	
Lead	0.194	0.00100	0.200	0	96.8	80	120	2.20	15	
Molybdenum	0.249	0.00500	0.200	0.0509	99.0	80	120	4.91	15	
Selenium	0.198	0.00500	0.200	0.00707	95.7	80	120	2.20	15	
Thallium	0.193	0.00150	0.200	0	96.7	80	120	2.25	15	

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_160912D

Sample ID <b>ICV-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 11:48:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.107	0.00250	0.100	0	107	90	110			
Arsenic	0.100	0.00500	0.100	0	100	90	110			
Barium	0.0986	0.0100	0.100	0	98.6	90	110			
Cadmium	0.101	0.00100	0.100	0	101	90	110			
Calcium	2.39	0.300	2.50	0	95.5	90	110			
Chromium	0.107	0.00500	0.100	0	107	90	110			
Cobalt	0.102	0.00500	0.100	0	102	90	110			
Lead	0.0994	0.00100	0.100	0	99.4	90	110			
Molybdenum	0.0969	0.00500	0.100	0	96.9	90	110			
Selenium	0.0990	0.00500	0.100	0	99.0	90	110			
Thallium	0.0979	0.00150	0.100	0	97.9	90	110			

Sample ID <b>LCVL-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 11:54:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00216	0.00250	0.00200	0	108	70	130			
Arsenic	0.00526	0.00500	0.00500	0	105	70	130			
Barium	0.00504	0.0100	0.00500	0	101	70	130			
Cadmium	0.00107	0.00100	0.00100	0	107	70	130			
Calcium	0.0817	0.300	0.100	0	81.7	70	130			
Chromium	0.00522	0.00500	0.00500	0	104	70	130			
Cobalt	0.00524	0.00500	0.00500	0	105	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Molybdenum	0.00509	0.00500	0.00500	0	102	70	130			
Selenium	0.00498	0.00500	0.00500	0	99.7	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID <b>CCV3-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 3:21:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.212	0.00250	0.200	0	106	90	110			
Arsenic	0.204	0.00500	0.200	0	102	90	110			
Barium	0.203	0.0100	0.200	0	101	90	110			
Cadmium	0.208	0.00100	0.200	0	104	90	110			
Calcium	4.95	0.300	5.00	0	99.0	90	110			
Chromium	0.212	0.00500	0.200	0	106	90	110			
Cobalt	0.211	0.00500	0.200	0	105	90	110			
Lead	0.204	0.00100	0.200	0	102	90	110			
Molybdenum	0.206	0.00500	0.200	0	103	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160912D**

Sample ID <b>CCV3-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 3:21:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.201	0.00500	0.200	0	101	90	110			
Thallium	0.211	0.00150	0.200	0	106	90	110			

Sample ID <b>LCVL3-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 3:30:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00210	0.00250	0.00200	0	105	70	130			
Arsenic	0.00522	0.00500	0.00500	0	104	70	130			
Barium	0.00495	0.0100	0.00500	0	99.0	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.0859	0.300	0.100	0	85.9	70	130			
Chromium	0.00536	0.00500	0.00500	0	107	70	130			
Cobalt	0.00538	0.00500	0.00500	0	108	70	130			
Lead	0.00104	0.00100	0.00100	0	104	70	130			
Molybdenum	0.00496	0.00500	0.00500	0	99.1	70	130			
Selenium	0.00514	0.00500	0.00500	0	103	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

Sample ID <b>CCV4-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 4:59:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.208	0.00250	0.200	0	104	90	110			
Arsenic	0.207	0.00500	0.200	0	104	90	110			
Barium	0.200	0.0100	0.200	0	99.8	90	110			
Cadmium	0.206	0.00100	0.200	0	103	90	110			
Calcium	4.97	0.300	5.00	0	99.4	90	110			
Chromium	0.214	0.00500	0.200	0	107	90	110			
Cobalt	0.213	0.00500	0.200	0	106	90	110			
Lead	0.202	0.00100	0.200	0	101	90	110			
Molybdenum	0.202	0.00500	0.200	0	101	90	110			
Selenium	0.205	0.00500	0.200	0	103	90	110			
Thallium	0.211	0.00150	0.200	0	106	90	110			

Sample ID <b>LCVL4-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 5:08:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00207	0.00250	0.00200	0	103	70	130			
Arsenic	0.00510	0.00500	0.00500	0	102	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_160912D

Sample ID: <b>LCVL4-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 5:08:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00487	0.0100	0.00500	0	97.5	70	130			
Cadmium	0.000997	0.00100	0.00100	0	99.7	70	130			
Calcium	0.0786	0.300	0.100	0	78.6	70	130			
Chromium	0.00523	0.00500	0.00500	0	105	70	130			
Cobalt	0.00538	0.00500	0.00500	0	108	70	130			
Lead	0.000953	0.00100	0.00100	0	95.3	70	130			
Molybdenum	0.00476	0.00500	0.00500	0	95.3	70	130			
Selenium	0.00534	0.00500	0.00500	0	107	70	130			
Thallium	0.000970	0.00150	0.00100	0	97.0	70	130			

Sample ID: <b>CCV5-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:05:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.204	0.00250	0.200	0	102	90	110			
Arsenic	0.205	0.00500	0.200	0	102	90	110			
Barium	0.197	0.0100	0.200	0	98.5	90	110			
Cadmium	0.203	0.00100	0.200	0	102	90	110			
Calcium	4.95	0.300	5.00	0	99.0	90	110			
Chromium	0.211	0.00500	0.200	0	106	90	110			
Cobalt	0.212	0.00500	0.200	0	106	90	110			
Lead	0.200	0.00100	0.200	0	99.8	90	110			
Molybdenum	0.198	0.00500	0.200	0	99.2	90	110			
Selenium	0.201	0.00500	0.200	0	100	90	110			
Thallium	0.213	0.00150	0.200	0	107	90	110			

Sample ID: <b>LCVL5-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:11:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00208	0.00250	0.00200	0	104	70	130			
Arsenic	0.00508	0.00500	0.00500	0	102	70	130			
Barium	0.00490	0.0100	0.00500	0	97.9	70	130			
Cadmium	0.000941	0.00100	0.00100	0	94.1	70	130			
Calcium	0.0829	0.300	0.100	0	82.9	70	130			
Chromium	0.00536	0.00500	0.00500	0	107	70	130			
Cobalt	0.00531	0.00500	0.00500	0	106	70	130			
Lead	0.000965	0.00100	0.00100	0	96.5	70	130			
Molybdenum	0.00470	0.00500	0.00500	0	94.0	70	130			
Selenium	0.00533	0.00500	0.00500	0	107	70	130			
Thallium	0.000983	0.00150	0.00100	0	98.3	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160912D**

Sample ID: <b>CCV6-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 6:58:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.207	0.00250	0.200	0	103	90	110			
Arsenic	0.206	0.00500	0.200	0	103	90	110			
Barium	0.201	0.0100	0.200	0	100	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Chromium	0.212	0.00500	0.200	0	106	90	110			
Cobalt	0.214	0.00500	0.200	0	107	90	110			
Lead	0.199	0.00100	0.200	0	99.5	90	110			
Molybdenum	0.200	0.00500	0.200	0	100	90	110			
Selenium	0.199	0.00500	0.200	0	99.3	90	110			
Thallium	0.211	0.00150	0.200	0	106	90	110			

Sample ID: <b>LCVL6-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 7:04:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00223	0.00250	0.00200	0	112	70	130			
Arsenic	0.00519	0.00500	0.00500	0	104	70	130			
Barium	0.00493	0.0100	0.00500	0	98.6	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Chromium	0.00530	0.00500	0.00500	0	106	70	130			
Cobalt	0.00535	0.00500	0.00500	0	107	70	130			
Lead	0.000958	0.00100	0.00100	0	95.8	70	130			
Molybdenum	0.00479	0.00500	0.00500	0	95.8	70	130			
Selenium	0.00503	0.00500	0.00500	0	101	70	130			
Thallium	0.000982	0.00150	0.00100	0	98.2	70	130			

Sample ID: <b>CCV7-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 7:40:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.207	0.00250	0.200	0	104	90	110			
Arsenic	0.206	0.00500	0.200	0	103	90	110			
Barium	0.198	0.0100	0.200	0	98.8	90	110			
Cadmium	0.205	0.00100	0.200	0	103	90	110			
Chromium	0.213	0.00500	0.200	0	107	90	110			
Cobalt	0.214	0.00500	0.200	0	107	90	110			
Lead	0.200	0.00100	0.200	0	100	90	110			
Molybdenum	0.202	0.00500	0.200	0	101	90	110			
Selenium	0.203	0.00500	0.200	0	101	90	110			
Thallium	0.216	0.00150	0.200	0	108	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160912D**

Sample ID: <b>LCVL7-160912</b>	Batch ID: <b>R88068</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160912D</b>	Analysis Date: <b>9/12/2016 7:46:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00206	0.00250	0.00200	0	103	70	130			
Arsenic	0.00522	0.00500	0.00500	0	104	70	130			
Barium	0.00485	0.0100	0.00500	0	97.0	70	130			
Cadmium	0.000960	0.00100	0.00100	0	96.0	70	130			
Chromium	0.00536	0.00500	0.00500	0	107	70	130			
Cobalt	0.00530	0.00500	0.00500	0	106	70	130			
Lead	0.000931	0.00100	0.00100	0	93.1	70	130			
Molybdenum	0.00493	0.00500	0.00500	0	98.6	70	130			
Selenium	0.00514	0.00500	0.00500	0	103	70	130			
Thallium	0.000955	0.00150	0.00100	0	95.5	70	130			

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	DF Dilution Factor	
	J Analyte detected between MDL and RL	MDL Method Detection Limit	
	ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits	
	RL Reporting Limit	S Spike Recovery outside control limits	
	J Analyte detected between SDL and RL	N Parameter not NELAC certified	

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160913B**

The QC data in batch 77107 applies to the following samples: 1609037-01A, 1609037-02A, 1609037-03A, 1609037-04A, 1609037-05A, 1609037-06A, 1609037-07A, 1609037-08A, 1609037-09A, 1609037-10A, 1609037-11A, 1609037-12A, 1609037-13A

Sample ID <b>MB-77107</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 12:56:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	<0.000300	0.00100								
Boron	<0.0100	0.0300								
Lithium	<0.00500	0.0100								

Sample ID <b>LCS-77107</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 12:59:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.194	0.00100	0.200	0	97.1	80	120			
Boron	0.187	0.0300	0.200	0	93.3	80	120			
Lithium	0.192	0.0100	0.200	0	96.1	80	120			

Sample ID <b>LCSD-77107</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 1:02:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.191	0.00100	0.200	0	95.6	80	120	1.53	15	
Boron	0.197	0.0300	0.200	0	98.6	80	120	5.56	15	
Lithium	0.198	0.0100	0.200	0	99.0	80	120	2.92	15	

Sample ID <b>1609036-02A SD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 1:11:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	3.56	1.50	0	3.08				14.4	10	R

Sample ID <b>1609036-02A PDS</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 1:32:00 PM</b>	Prep Date: <b>9/7/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	4.95	0.300	2.00	3.08	93.2	80	120			

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160913B**

Sample ID <b>ICV-160913</b>	Batch ID: <b>R88090</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 12:41:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Boron	0.0986	0.0300	0.100	0	98.6	90	110			
Lithium	0.0972	0.0100	0.100	0	97.2	90	110			

Sample ID <b>LCVL-160913</b>	Batch ID: <b>R88090</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 12:47:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.00107	0.00100	0.00100	0	107	70	130			
Boron	0.0250	0.0300	0.0200	0	125	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	70	130			

Sample ID <b>CCV1-160913</b>	Batch ID: <b>R88090</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 2:16:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.200	0.00100	0.200	0	99.8	90	110			
Boron	0.209	0.0300	0.200	0	105	90	110			
Lithium	0.207	0.0100	0.200	0	103	90	110			

Sample ID <b>LCVL1-160913</b>	Batch ID: <b>R88090</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160913B</b>	Analysis Date: <b>9/13/2016 2:32:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.00116	0.00100	0.00100	0	116	70	130			
Boron	0.0248	0.0300	0.0200	0	124	70	130			
Lithium	0.0105	0.0100	0.0100	0	105	70	130			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160913E**

The QC data in batch 77107 applies to the following samples: 1609037-01A, 1609037-02A, 1609037-03A, 1609037-04A, 1609037-05A, 1609037-06A, 1609037-07A, 1609037-08A, 1609037-09A, 1609037-10A, 1609037-11A, 1609037-12A, 1609037-13A

Sample ID <b>1609036-02A SD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 5:26:00 PM</b>	Prep Date: <b>9/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	<0.00150	0.00500	0	0				0	10	
Lithium	<0.0250	0.0500	0	0.0151				0	10	

Sample ID <b>1609036-02A PDS</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 5:38:00 PM</b>	Prep Date: <b>9/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.192	0.00100	0.200	0	96.2	80	120			
Lithium	0.200	0.0100	0.200	0.0151	92.4	80	120			

Sample ID <b>1609036-02A MS</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 5:41:00 PM</b>	Prep Date: <b>9/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.187	0.00100	0.200	0	93.3	80	120			
Lithium	0.207	0.0100	0.200	0.0151	96.2	80	120			

Sample ID <b>1609036-02A MSD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 5:44:00 PM</b>	Prep Date: <b>9/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.188	0.00100	0.200	0	94.1	80	120	0.828	15	
Lithium	0.210	0.0100	0.200	0.0151	97.4	80	120	1.14	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160913E**

Sample ID <b>ICV-160913</b>	Batch ID: <b>R88097</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 12:41:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Lithium	0.0972	0.0100	0.100	0	97.2	90	110			

Sample ID <b>LCVL-160913</b>	Batch ID: <b>R88097</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 12:47:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.00107	0.00100	0.00100	0	107	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	70	130			

Sample ID <b>CCV3-160913</b>	Batch ID: <b>R88097</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 4:47:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.195	0.00100	0.200	0	97.5	90	110			
Lithium	0.197	0.0100	0.200	0	98.3	90	110			

Sample ID <b>LCVL3-160913</b>	Batch ID: <b>R88097</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 5:03:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.00118	0.00100	0.00100	0	118	70	130			
Lithium	0.0103	0.0100	0.0100	0	103	70	130			

Sample ID <b>CCV4-160913</b>	Batch ID: <b>R88097</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 5:50:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.194	0.00100	0.200	0	96.8	90	110			
Lithium	0.206	0.0100	0.200	0	103	90	110			

Sample ID <b>LCVL4-160913</b>	Batch ID: <b>R88097</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160913E</b>	Analysis Date: <b>9/13/2016 5:59:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.00123	0.00100	0.00100	0	123	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914A**

The QC data in batch 77107 applies to the following samples: 1609037-01A, 1609037-02A, 1609037-03A, 1609037-04A, 1609037-05A, 1609037-06A, 1609037-07A, 1609037-08A, 1609037-09A, 1609037-10A, 1609037-11A, 1609037-12A, 1609037-13A

Sample ID <b>1609036-02A MS</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160914A</b>	Analysis Date: <b>9/14/2016 12:38:00 PM</b>	Prep Date: <b>9/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	3.72	0.300	0.200	3.32	203	80	120			S

Sample ID <b>1609036-02A MSD</b>	Batch ID: <b>77107</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160914A</b>	Analysis Date: <b>9/14/2016 12:41:00 PM</b>	Prep Date: <b>9/7/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	3.62	0.300	0.200	3.32	153	80	120	2.71	15	S

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914A**

Sample ID <b>ICV-160914</b>	Batch ID: <b>R88114</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160914A</b>	Analysis Date: <b>9/14/2016 12:03:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0984	0.0300	0.100	0	98.4	90	110			
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Sample ID <b>LCVL-160914</b>	Batch ID: <b>R88114</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160914A</b>	Analysis Date: <b>9/14/2016 12:09:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0238	0.0300	0.0200	0	119	70	130			
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Sample ID <b>CCV1-160914</b>	Batch ID: <b>R88114</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160914A</b>	Analysis Date: <b>9/14/2016 1:29:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.214	0.0300	0.200	0	107	90	110			
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Sample ID <b>LCVL1-160914</b>	Batch ID: <b>R88114</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160914A</b>	Analysis Date: <b>9/14/2016 1:47:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0217	0.0300	0.0200	0	108	70	130			
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**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

The QC data in batch 77163 applies to the following samples: 1609037-14A, 1609037-15A, 1609037-16A, 1609037-17A

Sample ID <b>MB-77163</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 2:56:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Boron	<0.0100	0.0300								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID <b>LCS-77163</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 2:59:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.194	0.00250	0.200	0	96.8	80	120			
Arsenic	0.197	0.00500	0.200	0	98.5	80	120			
Barium	0.190	0.0100	0.200	0	95.2	80	120			
Beryllium	0.199	0.00100	0.200	0	99.4	80	120			
Boron	0.200	0.0300	0.200	0	100	80	120			
Cadmium	0.191	0.00100	0.200	0	95.3	80	120			
Calcium	4.69	0.300	5.00	0	93.8	80	120			
Chromium	0.197	0.00500	0.200	0	98.3	80	120			
Cobalt	0.203	0.00500	0.200	0	102	80	120			
Lead	0.189	0.00100	0.200	0	94.3	80	120			
Lithium	0.199	0.0100	0.200	0	99.3	80	120			
Molybdenum	0.183	0.00500	0.200	0	91.3	80	120			
Selenium	0.197	0.00500	0.200	0	98.3	80	120			
Thallium	0.191	0.00150	0.200	0	95.3	80	120			

Sample ID <b>LCSD-77163</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:02:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.197	0.00250	0.200	0	98.4	80	120	1.62	15	
Arsenic	0.196	0.00500	0.200	0	97.9	80	120	0.685	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

Sample ID: <b>LCSD-77163</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:02:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.193	0.0100	0.200	0	96.6	80	120	1.47	15	
Beryllium	0.196	0.00100	0.200	0	98.2	80	120	1.19	15	
Boron	0.201	0.0300	0.200	0	101	80	120	0.673	15	
Cadmium	0.192	0.00100	0.200	0	96.1	80	120	0.824	15	
Calcium	4.71	0.300	5.00	0	94.1	80	120	0.367	15	
Chromium	0.197	0.00500	0.200	0	98.4	80	120	0.073	15	
Cobalt	0.203	0.00500	0.200	0	101	80	120	0.287	15	
Lead	0.191	0.00100	0.200	0	95.4	80	120	1.12	15	
Lithium	0.200	0.0100	0.200	0	100	80	120	0.741	15	
Molybdenum	0.186	0.00500	0.200	0	93.0	80	120	1.88	15	
Selenium	0.200	0.00500	0.200	0	99.8	80	120	1.56	15	
Thallium	0.192	0.00150	0.200	0	95.8	80	120	0.608	15	

Sample ID: <b>1609053-02A SD</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:11:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.0400	0.125	0	0				0	10	
Arsenic	<0.100	0.250	0	0				0	10	
Barium	<0.150	0.500	0	0.0574				0	10	
Beryllium	<0.0150	0.0500	0	0.00767				0	10	
Boron	0.588	1.50	0	0.524				11.4	10	R
Cadmium	0.0247	0.0500	0	0.0238				3.54	10	
Calcium	201	15.0	0	199				0.854	10	
Chromium	<0.100	0.250	0	0				0	10	
Cobalt	<0.150	0.250	0	0.144				0	10	
Lead	<0.0150	0.0500	0	0				0	10	
Lithium	0.351	0.500	0	0.378				7.35	10	
Molybdenum	<0.100	0.250	0	0				0	10	
Selenium	<0.100	0.250	0	0				0	10	
Thallium	<0.0250	0.0750	0	0				0	10	

Sample ID: <b>1609053-02A PDS</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:41:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	1.92	0.0250	2.00	0	96.0	80	120			
Arsenic	1.99	0.0500	2.00	0	99.6	80	120			
Barium	2.00	0.100	2.00	0.0574	96.9	80	120			
Beryllium	1.90	0.0100	2.00	0.00767	94.7	80	120			
Boron	2.41	0.300	2.00	0.524	94.3	80	120			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

Sample ID <b>1609053-02A PDS</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:41:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	1.91	0.0100	2.00	0.0238	94.1	80	120			
Calcium	244	3.00	50.0	199	89.3	80	120			
Chromium	2.01	0.0500	2.00	0	100	80	120			
Cobalt	2.14	0.0500	2.00	0.144	99.7	80	120			
Lead	1.93	0.0100	2.00	0	96.6	80	120			
Lithium	2.24	0.100	2.00	0.378	93.2	80	120			
Molybdenum	1.78	0.0500	2.00	0	89.1	80	120			
Selenium	1.98	0.0500	2.00	0	98.9	80	120			
Thallium	1.92	0.0150	2.00	0	96.1	80	120			

Sample ID <b>1609053-02A MS</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:44:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	101	80	120			
Arsenic	0.196	0.00500	0.200	0	97.9	80	120			
Barium	0.251	0.0100	0.200	0.0574	97.0	80	120			
Beryllium	0.193	0.00100	0.200	0.00767	92.6	80	120			
Boron	0.736	0.0300	0.200	0.524	106	80	120			
Cadmium	0.209	0.00100	0.200	0.0238	92.7	80	120			
Calcium	200	0.300	5.00	199	4.66	80	120			S
Chromium	0.190	0.00500	0.200	0	95.2	80	120			
Cobalt	0.322	0.00500	0.200	0.144	88.9	80	120			
Lead	0.192	0.00100	0.200	0	95.9	80	120			
Lithium	0.532	0.0100	0.200	0.378	77.1	80	120			S
Molybdenum	0.191	0.00500	0.200	0	95.5	80	120			
Selenium	0.209	0.00500	0.200	0	105	80	120			
Thallium	0.194	0.00150	0.200	0	96.9	80	120			

Sample ID <b>1609053-02A MSD</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:47:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	80	120	0.480	15	
Arsenic	0.197	0.00500	0.200	0	98.4	80	120	0.536	15	
Barium	0.252	0.0100	0.200	0.0574	97.5	80	120	0.395	15	
Beryllium	0.189	0.00100	0.200	0.00767	90.6	80	120	2.05	15	
Boron	0.733	0.0300	0.200	0.524	104	80	120	0.385	15	
Cadmium	0.210	0.00100	0.200	0.0238	92.9	80	120	0.244	15	
Calcium	201	0.300	5.00	199	31.4	80	120	0.667	15	S
Chromium	0.191	0.00500	0.200	0	95.5	80	120	0.225	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

Sample ID <b>1609053-02A MSD</b>	Batch ID: <b>77163</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:47:00 PM</b>	Prep Date: <b>9/12/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.327	0.00500	0.200	0.144	91.4	80	120	1.54	15	
Lead	0.191	0.00100	0.200	0	95.5	80	120	0.395	15	
Lithium	0.537	0.0100	0.200	0.378	79.6	80	120	0.950	15	
Molybdenum	0.194	0.00500	0.200	0	96.9	80	120	1.44	15	
Selenium	0.213	0.00500	0.200	0	106	80	120	1.68	15	
Thallium	0.194	0.00150	0.200	0	97.1	80	120	0.231	15	

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	DF Dilution Factor	
	J Analyte detected between MDL and RL	MDL Method Detection Limit	
	ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits	
	RL Reporting Limit	S Spike Recovery outside control limits	
	J Analyte detected between SDL and RL	N Parameter not NELAC certified	

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

Sample ID <b>ICV-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 12:03:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.106	0.00250	0.100	0	106	90	110			
Arsenic	0.101	0.00500	0.100	0	101	90	110			
Barium	0.0999	0.0100	0.100	0	99.9	90	110			
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Boron	0.0984	0.0300	0.100	0	98.4	90	110			
Cadmium	0.0991	0.00100	0.100	0	99.1	90	110			
Calcium	2.38	0.300	2.50	0	95.4	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.105	0.00500	0.100	0	105	90	110			
Lead	0.0983	0.00100	0.100	0	98.3	90	110			
Lithium	0.0970	0.0100	0.100	0	97.0	90	110			
Molybdenum	0.0942	0.00500	0.100	0	94.2	90	110			
Selenium	0.102	0.00500	0.100	0	102	90	110			
Thallium	0.0980	0.00150	0.100	0	98.0	90	110			

Sample ID <b>LCVL-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 12:09:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00211	0.00250	0.00200	0	105	70	130			
Arsenic	0.00516	0.00500	0.00500	0	103	70	130			
Barium	0.00516	0.0100	0.00500	0	103	70	130			
Beryllium	0.000873	0.00100	0.00100	0	87.3	70	130			
Boron	0.0238	0.0300	0.0200	0	119	70	130			
Cadmium	0.000993	0.00100	0.00100	0	99.3	70	130			
Calcium	0.0948	0.300	0.100	0	94.8	70	130			
Chromium	0.00521	0.00500	0.00500	0	104	70	130			
Cobalt	0.00543	0.00500	0.00500	0	109	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.0104	0.0100	0.0100	0	104	70	130			
Molybdenum	0.00493	0.00500	0.00500	0	98.6	70	130			
Selenium	0.00586	0.00500	0.00500	0	117	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

Sample ID <b>CCV2-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 2:44:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	90	110			
Arsenic	0.201	0.00500	0.200	0	100	90	110			
Barium	0.199	0.0100	0.200	0	99.6	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

Sample ID <b>CCV2-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 2:44:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.202	0.00100	0.200	0	101	90	110			
Boron	0.203	0.0300	0.200	0	101	90	110			
Cadmium	0.198	0.00100	0.200	0	99.0	90	110			
Calcium	4.85	0.300	5.00	0	96.9	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			
Cobalt	0.207	0.00500	0.200	0	104	90	110			
Lead	0.195	0.00100	0.200	0	97.4	90	110			
Lithium	0.205	0.0100	0.200	0	102	90	110			
Molybdenum	0.190	0.00500	0.200	0	95.2	90	110			
Selenium	0.200	0.00500	0.200	0	99.9	90	110			
Thallium	0.196	0.00150	0.200	0	97.8	90	110			

Sample ID <b>LCVL2-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 2:50:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00218	0.00250	0.00200	0	109	70	130			
Arsenic	0.00535	0.00500	0.00500	0	107	70	130			
Barium	0.00514	0.0100	0.00500	0	103	70	130			
Beryllium	0.00108	0.00100	0.00100	0	108	70	130			
Boron	0.0248	0.0300	0.0200	0	124	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Calcium	0.0976	0.300	0.100	0	97.6	70	130			
Chromium	0.00544	0.00500	0.00500	0	109	70	130			
Cobalt	0.00551	0.00500	0.00500	0	110	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.00978	0.0100	0.0100	0	97.8	70	130			
Molybdenum	0.00483	0.00500	0.00500	0	96.5	70	130			
Selenium	0.00585	0.00500	0.00500	0	117	70	130			
Thallium	0.00100	0.00150	0.00100	0	100	70	130			

Sample ID <b>CCV3-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:50:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	90	110			
Arsenic	0.204	0.00500	0.200	0	102	90	110			
Barium	0.197	0.0100	0.200	0	98.3	90	110			
Beryllium	0.201	0.00100	0.200	0	100	90	110			
Boron	0.218	0.0300	0.200	0	109	90	110			
Cadmium	0.198	0.00100	0.200	0	99.0	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

Sample ID <b>CCV3-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:50:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.91	0.300	5.00	0	98.2	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			
Cobalt	0.210	0.00500	0.200	0	105	90	110			
Lead	0.197	0.00100	0.200	0	98.4	90	110			
Lithium	0.207	0.0100	0.200	0	104	90	110			
Molybdenum	0.190	0.00500	0.200	0	95.0	90	110			
Selenium	0.203	0.00500	0.200	0	102	90	110			
Thallium	0.199	0.00150	0.200	0	99.4	90	110			

Sample ID <b>LCVL3-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 3:56:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00226	0.00250	0.00200	0	113	70	130			
Arsenic	0.00520	0.00500	0.00500	0	104	70	130			
Barium	0.00476	0.0100	0.00500	0	95.1	70	130			
Beryllium	0.000874	0.00100	0.00100	0	87.4	70	130			
Boron	0.0256	0.0300	0.0200	0	128	70	130			
Cadmium	0.000932	0.00100	0.00100	0	93.2	70	130			
Calcium	0.0991	0.300	0.100	0	99.1	70	130			
Chromium	0.00514	0.00500	0.00500	0	103	70	130			
Cobalt	0.00536	0.00500	0.00500	0	107	70	130			
Lead	0.000952	0.00100	0.00100	0	95.2	70	130			
Lithium	0.0113	0.0100	0.0100	0	113	70	130			
Molybdenum	0.00474	0.00500	0.00500	0	94.8	70	130			
Selenium	0.00537	0.00500	0.00500	0	107	70	130			
Thallium	0.000980	0.00150	0.00100	0	98.0	70	130			

Sample ID <b>CCV6-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 7:34:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.5	90	110			
Arsenic	0.203	0.00500	0.200	0	101	90	110			
Barium	0.195	0.0100	0.200	0	97.7	90	110			
Beryllium	0.208	0.00100	0.200	0	104	90	110			
Cadmium	0.195	0.00100	0.200	0	97.5	90	110			
Chromium	0.208	0.00500	0.200	0	104	90	110			
Cobalt	0.208	0.00500	0.200	0	104	90	110			
Lead	0.192	0.00100	0.200	0	96.2	90	110			
Lithium	0.217	0.0100	0.200	0	109	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

Sample ID <b>CCV6-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 7:34:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.189	0.00500	0.200	0	94.3	90	110			
Selenium	0.202	0.00500	0.200	0	101	90	110			
Thallium	0.194	0.00150	0.200	0	97.0	90	110			

Sample ID <b>LCVL6-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 7:40:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00238	0.00250	0.00200	0	119	70	130			
Arsenic	0.00522	0.00500	0.00500	0	104	70	130			
Barium	0.00491	0.0100	0.00500	0	98.2	70	130			
Beryllium	0.000876	0.00100	0.00100	0	87.6	70	130			
Cadmium	0.000974	0.00100	0.00100	0	97.4	70	130			
Chromium	0.00522	0.00500	0.00500	0	104	70	130			
Cobalt	0.00543	0.00500	0.00500	0	109	70	130			
Lead	0.000973	0.00100	0.00100	0	97.3	70	130			
Lithium	0.0103	0.0100	0.0100	0	103	70	130			
Molybdenum	0.00466	0.00500	0.00500	0	93.3	70	130			
Selenium	0.00552	0.00500	0.00500	0	110	70	130			
Thallium	0.000987	0.00150	0.00100	0	98.7	70	130			

Sample ID <b>CCV7-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 8:22:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	99.9	90	110			
Arsenic	0.204	0.00500	0.200	0	102	90	110			
Barium	0.195	0.0100	0.200	0	97.4	90	110			
Beryllium	0.211	0.00100	0.200	0	106	90	110			
Cadmium	0.196	0.00100	0.200	0	97.8	90	110			
Chromium	0.208	0.00500	0.200	0	104	90	110			
Cobalt	0.212	0.00500	0.200	0	106	90	110			
Lead	0.194	0.00100	0.200	0	96.9	90	110			
Lithium	0.218	0.0100	0.200	0	109	90	110			
Molybdenum	0.189	0.00500	0.200	0	94.5	90	110			
Selenium	0.204	0.00500	0.200	0	102	90	110			
Thallium	0.195	0.00150	0.200	0	97.5	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160914B**

Sample ID: <b>LCVL7-160914</b>	Batch ID: <b>R88119</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160914B</b>	Analysis Date: <b>9/14/2016 8:28:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00207	0.00250	0.00200	0	103	70	130			
Arsenic	0.00520	0.00500	0.00500	0	104	70	130			
Barium	0.00501	0.0100	0.00500	0	100	70	130			
Beryllium	0.00123	0.00100	0.00100	0	123	70	130			
Cadmium	0.000978	0.00100	0.00100	0	97.8	70	130			
Chromium	0.00521	0.00500	0.00500	0	104	70	130			
Cobalt	0.00544	0.00500	0.00500	0	109	70	130			
Lead	0.000924	0.00100	0.00100	0	92.4	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	70	130			
Molybdenum	0.00465	0.00500	0.00500	0	93.0	70	130			
Selenium	0.00493	0.00500	0.00500	0	98.6	70	130			
Thallium	0.000962	0.00150	0.00100	0	96.2	70	130			

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	DF Dilution Factor
	J Analyte detected between MDL and RL	MDL Method Detection Limit
	ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
	RL Reporting Limit	S Spike Recovery outside control limits
	J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_160915C

Sample ID <b>ICV-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 11:14:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Boron	0.0955	0.0300	0.100	0	95.5	90	110			
Lithium	0.0966	0.0100	0.100	0	96.6	90	110			

Sample ID <b>LCVL-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 11:18:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.000896	0.00100	0.00100	0	89.6	70	130			
Boron	0.0176	0.0300	0.0200	0	88.1	70	130			
Lithium	0.0105	0.0100	0.0100	0	105	70	130			

Sample ID <b>CCV2-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 1:25:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.197	0.00100	0.200	0	98.3	90	110			
Boron	0.201	0.0300	0.200	0	101	90	110			
Lithium	0.200	0.0100	0.200	0	99.8	90	110			

Sample ID <b>LCVL2-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 1:30:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.00112	0.00100	0.00100	0	112	70	130			
Boron	0.0233	0.0300	0.0200	0	117	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			

Sample ID <b>CCV3-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 2:10:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.196	0.00100	0.200	0	98.2	90	110			
Boron	0.202	0.0300	0.200	0	101	90	110			
Lithium	0.202	0.0100	0.200	0	101	90	110			

Sample ID <b>LCVL3-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 2:14:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.000916	0.00100	0.00100	0	91.6	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_160915C

Sample ID: <b>LCVL3-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 2:14:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0216	0.0300	0.0200	0	108	70	130			
Lithium	0.00983	0.0100	0.0100	0	98.3	70	130			

Sample ID: <b>CCV4-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 2:51:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.197	0.00100	0.200	0	98.4	90	110			
Boron	0.198	0.0300	0.200	0	98.8	90	110			
Lithium	0.202	0.0100	0.200	0	101	90	110			

Sample ID: <b>LCVL4-160915</b>	Batch ID: <b>R88158</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160915C</b>	Analysis Date: <b>9/15/2016 3:04:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.000857	0.00100	0.00100	0	85.7	70	130			
Boron	0.0176	0.0300	0.0200	0	87.9	70	130			
Lithium	0.00938	0.0100	0.0100	0	93.8	70	130			

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160916C**

Sample ID <b>ICV-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 12:03:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.101	0.00100	0.100	0	101	90	110			
Boron	0.101	0.0300	0.100	0	101	90	110			
Lithium	0.0972	0.0100	0.100	0	97.2	90	110			

Sample ID <b>LCVL-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 12:07:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00104	0.00100	0.00100	0	104	70	130			
Boron	0.0213	0.0300	0.0200	0	107	70	130			
Lithium	0.0100	0.0100	0.0100	0	100	70	130			

Sample ID <b>CCV4-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 2:48:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.204	0.00100	0.200	0	102	90	110			
Lithium	0.207	0.0100	0.200	0	104	90	110			

Sample ID <b>LCVL4-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 2:52:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.000964	0.00100	0.00100	0	96.4	70	130			
Lithium	0.0102	0.0100	0.0100	0	102	70	130			

Sample ID <b>CCV5-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 3:12:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.204	0.00100	0.200	0	102	90	110			
Lithium	0.200	0.0100	0.200	0	100	90	110			

Sample ID <b>LCVL5-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 3:16:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.00935	0.0100	0.0100	0	93.5	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_160916C**

Sample ID <b>CCV7-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 4:19:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.212	0.0300	0.200	0	106	90	110			
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Sample ID <b>LCVL7-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 4:42:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0261	0.0300	0.0200	0	130	70	130			
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Sample ID <b>CCV8-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 5:14:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.218	0.0300	0.200	0	109	90	110			
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Sample ID <b>LCVL8-160916</b>	Batch ID: <b>R88178</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_160916C</b>	Analysis Date: <b>9/16/2016 5:27:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0253	0.0300	0.0200	0	126	70	130			
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**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_160908A**

The QC data in batch 77128 applies to the following samples: 1609037-08D, 1609037-09D, 1609037-10D, 1609037-11D, 1609037-12D

Sample ID <b>MB-77128</b>	Batch ID: <b>77128</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC2_160908A</b>	Analysis Date: <b>9/8/2016 9:47:08 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-77128</b>	Batch ID: <b>77128</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC2_160908A</b>	Analysis Date: <b>9/8/2016 10:01:45 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	1.00	10.00	0	100	90	110			
Fluoride	3.90	0.400	4.000	0	97.5	90	110			
Sulfate	29.9	3.00	30.00	0	99.8	90	110			

Sample ID <b>LCSD-77128</b>	Batch ID: <b>77128</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>IC2_160908A</b>	Analysis Date: <b>9/8/2016 10:16:21 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	1.00	10.00	0	100	90	110	0.116	20	
Fluoride	3.91	0.400	4.000	0	97.7	90	110	0.176	20	
Sulfate	29.6	3.00	30.00	0	98.7	90	110	1.06	20	

Sample ID <b>1609045-01CMS</b>	Batch ID: <b>77128</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC2_160908A</b>	Analysis Date: <b>9/8/2016 11:53:07 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	3260	100	2000	1327	96.6	90	110			
Fluoride	2040	40.0	2000	0	102	90	110			
Sulfate	3220	300	2000	1106	105	90	110			

Sample ID <b>1609045-01CMSD</b>	Batch ID: <b>77128</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC2_160908A</b>	Analysis Date: <b>9/8/2016 12:07:44 PM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	3280	100	2000	1327	97.9	90	110	0.761	20	
Fluoride	2070	40.0	2000	0	104	90	110	1.50	20	
Sulfate	3250	300	2000	1106	107	90	110	0.935	20	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_160908A**

Sample ID <b>ICV-160908</b>	Batch ID: <b>R88012</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC2_160908A</b>	Analysis Date: <b>9/8/2016 9:10:11 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.0	1.00	25.00	0	95.9	90	110			
Fluoride	9.56	0.400	10.00	0	95.6	90	110			
Sulfate	74.9	3.00	75.00	0	99.8	90	110			

Sample ID <b>CCV1-160908</b>	Batch ID: <b>R88012</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_160908A</b>	Analysis Date: <b>9/8/2016 1:38:38 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Fluoride	4.04	0.400	4.000	0	101	90	110			
Sulfate	30.0	3.00	30.00	0	100	90	110			

Sample ID <b>CCV2-160908</b>	Batch ID: <b>R88012</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_160908A</b>	Analysis Date: <b>9/8/2016 3:28:24 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Fluoride	4.04	0.400	4.000	0	101	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_160912A**

The QC data in batch 77165 applies to the following samples: 1609037-13D, 1609037-14D, 1609037-15D, 1609037-16D, 1609037-17D

Sample ID <b>MB-77165</b>	Batch ID: <b>77165</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC2_160912A</b>	Analysis Date: <b>9/12/2016 9:45:14 AM</b>	Prep Date: <b>9/12/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-77165</b>	Batch ID: <b>77165</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC2_160912A</b>	Analysis Date: <b>9/12/2016 10:14:27 AM</b>	Prep Date: <b>9/12/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Fluoride	3.89	0.400	4.000	0	97.3	90	110			
Sulfate	30.0	3.00	30.00	0	100	90	110			

Sample ID <b>LCSD-77165</b>	Batch ID: <b>77165</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCSD</b>	Run ID: <b>IC2_160912A</b>	Analysis Date: <b>9/12/2016 10:29:03 AM</b>	Prep Date: <b>9/12/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110	0.648	20	
Fluoride	3.91	0.400	4.000	0	97.7	90	110	0.418	20	
Sulfate	29.9	3.00	30.00	0	99.6	90	110	0.517	20	

Sample ID <b>1609037-16DMS</b>	Batch ID: <b>77165</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC2_160912A</b>	Analysis Date: <b>9/12/2016 2:22:41 PM</b>	Prep Date: <b>9/12/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	280	10.0	200.0	76.20	102	90	110			
Fluoride	204	4.00	200.0	0	102	90	110			
Sulfate	344	30.0	200.0	142.5	101	90	110			

Sample ID <b>1609037-16DMSD</b>	Batch ID: <b>77165</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC2_160912A</b>	Analysis Date: <b>9/12/2016 2:46:18 PM</b>	Prep Date: <b>9/12/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	280	10.0	200.0	76.20	102	90	110	0.182	20	
Fluoride	207	4.00	200.0	0	103	90	110	1.12	20	
Sulfate	349	30.0	200.0	142.5	103	90	110	1.45	20	

**Qualifiers:** B Analyte detected in the associated Method Blank      DF Dilution Factor  
J Analyte detected between MDL and RL      MDL Method Detection Limit  
ND Not Detected at the Method Detection Limit      R RPD outside accepted control limits  
RL Reporting Limit      S Spike Recovery outside control limits  
J Analyte detected between SDL and RL      N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_160912A**

Sample ID <b>ICV-160912</b>	Batch ID: <b>R88061</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>IC2_160912A</b>	Analysis Date: <b>9/12/2016 9:05:51 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.7	1.00	25.00	0	98.8	90	110			
Fluoride	9.54	0.400	10.00	0	95.4	90	110			
Sulfate	75.6	3.00	75.00	0	101	90	110			

Sample ID <b>CCV1-160912</b>	Batch ID: <b>R88061</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_160912A</b>	Analysis Date: <b>9/12/2016 12:51:33 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110			
Fluoride	4.27	0.400	4.000	0	107	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

Sample ID <b>CCV2-160912</b>	Batch ID: <b>R88061</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_160912A</b>	Analysis Date: <b>9/12/2016 3:18:19 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Fluoride	4.07	0.400	4.000	0	102	90	110			
Sulfate	30.3	3.00	30.00	0	101	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC3\_160908A**

The QC data in batch 77133 applies to the following samples: 1609037-01D, 1609037-02D, 1609037-03D, 1609037-04D, 1609037-05D, 1609037-06D, 1609037-07D

Sample ID <b>MB-77133</b>	Batch ID: <b>77133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC3_160908A</b>	Analysis Date: <b>9/8/2016 10:21:45 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-77133</b>	Batch ID: <b>77133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC3_160908A</b>	Analysis Date: <b>9/8/2016 10:42:22 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.64	1.00	10.00	0	96.4	90	110			
Fluoride	4.23	0.400	4.000	0	106	90	110			
Sulfate	29.7	3.00	30.00	0	99.0	90	110			

Sample ID <b>LCS-77133</b>	Batch ID: <b>77133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC3_160908A</b>	Analysis Date: <b>9/8/2016 11:03:01 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.65	1.00	10.00	0	96.5	90	110	0.135	20	
Fluoride	4.06	0.400	4.000	0	102	90	110	4.15	20	
Sulfate	29.7	3.00	30.00	0	98.9	90	110	0.091	20	

Sample ID <b>1609055-01JMS</b>	Batch ID: <b>77133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC3_160908A</b>	Analysis Date: <b>9/8/2016 4:37:06 PM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	247	10.0	200.0	52.37	97.3	90	110			
Fluoride	189	4.00	200.0	0	94.4	90	110			
Sulfate	310	30.0	200.0	116.4	96.9	90	110			

Sample ID <b>1609055-01JMSD</b>	Batch ID: <b>77133</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC3_160908A</b>	Analysis Date: <b>9/8/2016 4:57:45 PM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	248	10.0	200.0	52.37	97.9	90	110	0.493	20	
Fluoride	191	4.00	200.0	0	95.4	90	110	1.03	20	
Sulfate	314	30.0	200.0	116.4	98.9	90	110	1.25	20	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC3\_160908A**

Sample ID <b>ICV-160908</b>	Batch ID: <b>R88019</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC3_160908A</b>	Analysis Date: <b>9/8/2016 9:27:19 AM</b>	Prep Date:

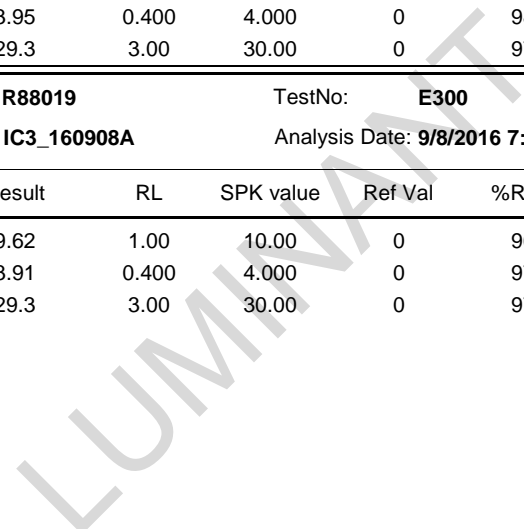
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.3	1.00	25.00	0	97.1	90	110			
Fluoride	9.90	0.400	10.00	0	99.0	90	110			
Sulfate	72.6	3.00	75.00	0	96.8	90	110			

Sample ID <b>CCV1-160908</b>	Batch ID: <b>R88019</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC3_160908A</b>	Analysis Date: <b>9/8/2016 3:26:56 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.70	1.00	10.00	0	97.0	90	110			
Fluoride	3.95	0.400	4.000	0	98.6	90	110			
Sulfate	29.3	3.00	30.00	0	97.6	90	110			

Sample ID <b>CCV2-160908</b>	Batch ID: <b>R88019</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC3_160908A</b>	Analysis Date: <b>9/8/2016 7:01:35 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.62	1.00	10.00	0	96.2	90	110			
Fluoride	3.91	0.400	4.000	0	97.7	90	110			
Sulfate	29.3	3.00	30.00	0	97.6	90	110			



**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_160906A**

The QC data in batch 77103 applies to the following samples: 1609037-01D, 1609037-02D, 1609037-03D, 1609037-04D, 1609037-05D, 1609037-06D, 1609037-07D, 1609037-08D, 1609037-09D, 1609037-10D, 1609037-11D, 1609037-12D, 1609037-13D, 1609037-14D, 1609037-15D, 1609037-16D, 1609037-17D

Sample ID <b>1609037-01D-DUP</b>	Batch ID: <b>77103</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@18.4°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_160906A</b>	Analysis Date: <b>9/6/2016 12:24:00 PM</b>	Prep Date: <b>9/6/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.64	0	0	6.540				1.52		5

Sample ID <b>1609037-11D-DUP</b>	Batch ID: <b>77103</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@19.5°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_160906A</b>	Analysis Date: <b>9/6/2016 12:54:00 PM</b>	Prep Date: <b>9/6/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.56	0	0	6.510				0.765		5

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_160906A**

Sample ID <b>ICV-160906</b>	Batch ID: <b>R87971</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.1°C</b>							
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_160906A</b>	Analysis Date: <b>9/6/2016 11:47:00 AM</b>	Prep Date: <b>9/6/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	9.90	0	10.00	0	99.0	99	101				
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Sample ID <b>CCV1-160906</b>	Batch ID: <b>R87971</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@22.1°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160906A</b>	Analysis Date: <b>9/6/2016 12:07:00 PM</b>	Prep Date: <b>9/6/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	6.95	0	7.000	0	99.3	97.1	102.9				
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Sample ID <b>CCV2-160906</b>	Batch ID: <b>R87971</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.6°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160906A</b>	Analysis Date: <b>9/6/2016 12:48:00 PM</b>	Prep Date: <b>9/6/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	6.94	0	7.000	0	99.1	97.1	102.9				
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Sample ID <b>CCV3-160906</b>	Batch ID: <b>R87971</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.5°C</b>							
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_160906A</b>	Analysis Date: <b>9/6/2016 1:20:00 PM</b>	Prep Date: <b>9/6/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	6.94	0	7.000	0	99.1	97.1	102.9				
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<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_160906A**

The QC data in batch 77086 applies to the following samples: 1609037-01D, 1609037-02D, 1609037-03D, 1609037-04D, 1609037-05D, 1609037-06D, 1609037-07D, 1609037-08D

Sample ID <b>MB-77086</b>	Batch ID: <b>77086</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_160906A</b>	Analysis Date: <b>9/7/2016 8:39:00 AM</b>	Prep Date: <b>9/6/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-77086</b>	Batch ID: <b>77086</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_160906A</b>	Analysis Date: <b>9/7/2016 8:39:00 AM</b>	Prep Date: <b>9/6/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	740	10.0	745.6	0	99.2	90	113			

Sample ID <b>1609015-02C-DUP</b>	Batch ID: <b>77086</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160906A</b>	Analysis Date: <b>9/7/2016 8:39:00 AM</b>	Prep Date: <b>9/6/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	1320	50.0	0	1350				2.63	5	

Sample ID <b>1609034-01C-DUP</b>	Batch ID: <b>77086</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160906A</b>	Analysis Date: <b>9/7/2016 8:39:00 AM</b>	Prep Date: <b>9/6/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	4780	50.0	0	4645				2.97	5	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1609037  
**Project:** Luminant - Big Brown

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_160908A**

The QC data in batch 77136 applies to the following samples: 1609037-09D, 1609037-10D, 1609037-11D, 1609037-12D, 1609037-13D, 1609037-14D, 1609037-15D, 1609037-16D, 1609037-17D

Sample ID <b>MB-77136</b>	Batch ID: <b>77136</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_160908A</b>	Analysis Date: <b>9/9/2016 8:46:00 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-77136</b>	Batch ID: <b>77136</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_160908A</b>	Analysis Date: <b>9/9/2016 8:46:00 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	742	10.0	745.6	0	99.5	90	113			

Sample ID <b>1609044-01D-DUP</b>	Batch ID: <b>77136</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160908A</b>	Analysis Date: <b>9/9/2016 8:46:00 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	288	10.0	0	301.0				4.41	5	

Sample ID <b>1609045-01C-DUP</b>	Batch ID: <b>77136</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_160908A</b>	Analysis Date: <b>9/9/2016 8:46:00 AM</b>	Prep Date: <b>9/8/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	4930	50.0	0	5000				1.41	5	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

## Case Narrative

### Lab No: 20160862

This report contains the analytical results for the 17 sample(s) received under chain of custody by ESC Lab Sciences on 9/8/2016 10:40:00 AM. These samples are associated with your 1609037 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

The following QC parameters are outside method control limits:  
Ra-226 DUP RPD/RER SDG R1135



Client : DHL Analytical, Inc.  
 Client Project : 1609037  
 Lab Number : 20160862  
 Date Reported : 09/28/16  
 Date Received : 09/08/16  
 Page Number : 2 of 6

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20160862-01  
**Client ID** : BAP-61  
**Date Sampled** : 9/1/2016 10:05:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.473 +/- 0.959	0.671	pCi/l				
Radium-226	SM 7500 Ra B M*	0.473 +/- 0.199	0.187	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	-0.030 +/- 0.761	0.484	pCi/l		09/20/16	09/23/16	JR

**Lab ID** : 20160862-02  
**Client ID** : BAP-60  
**Date Sampled** : 9/1/2016 10:55:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.072 +/- 1.09	0.743	pCi/l				
Radium-226	SM 7500 Ra B M*	0.072 +/- 0.091	0.138	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	-0.476 +/- 0.996	0.605	pCi/l		09/20/16	09/23/16	JR

**Lab ID** : 20160862-03  
**Client ID** : BAP-59  
**Date Sampled** : 9/1/2016 11:45:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.468 +/- 0.946	0.605	pCi/l				
Radium-226	SM 7500 Ra B M*	0.237 +/- 0.143	0.121	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	0.231 +/- 0.803	0.484	pCi/l		09/20/16	09/23/16	JR

**Lab ID** : 20160862-04  
**Client ID** : BAP-62  
**Date Sampled** : 9/1/2016 12:40:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.32 +/- 1.00	0.684	pCi/l				
Radium-226	SM 7500 Ra B M*	0.199 +/- 0.125	0.145	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	1.12 +/- 0.879	0.540	pCi/l		09/20/16	09/23/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1609037  
 Lab Number : 20160862  
 Date Reported : 09/28/16  
 Date Received : 09/08/16  
 Page Number : 3 of 6

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20160862-05  
**Client ID** : BAP-63  
**Date Sampled** : 9/1/2016 1:45:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.87 +/- 1.22	0.817	pCi/l				
Radium-226	SM 7500 Ra B M*	0.607 +/- 0.206	0.194	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	1.27 +/- 1.02	0.623	pCi/l		09/20/16	09/23/16	JR

**Lab ID** : 20160862-06  
**Client ID** : DUP-01  
**Date Sampled** : 9/1/2016 1:45:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.676 +/- 1.04	0.657	pCi/l				
Radium-226	SM 7500 Ra B M*	0.244 +/- 0.113	0.094	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	0.432 +/- 0.926	0.563	pCi/l		09/20/16	09/23/16	JR

**Lab ID** : 20160862-07  
**Client ID** : BAP-58  
**Date Sampled** : 9/1/2016 2:40:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.855 +/- 1.23	0.872	pCi/l				
Radium-226	SM 7500 Ra B M*	0.242 +/- 0.158	0.203	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	0.613 +/- 1.07	0.669	pCi/l		09/20/16	09/23/16	JR

**Lab ID** : 20160862-08  
**Client ID** : BAP-57  
**Date Sampled** : 9/1/2016 3:35:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.406 +/- 1.07	0.753	pCi/l				
Radium-226	SM 7500 Ra B M*	0.293 +/- 0.162	0.199	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	0.113 +/- 0.913	0.554	pCi/l		09/20/16	09/23/16	JR

\*NELAC Certified Parameter

BDL = Below Detection Limit



Client : DHL Analytical, Inc.  
 Client Project : 1609037  
 Lab Number : 20160862  
 Date Reported : 09/28/16  
 Date Received : 09/08/16  
 Page Number : 4 of 6

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20160862-09  
**Client ID** : AMW-13  
**Date Sampled** : 9/1/2016 5:40:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.254 +/- 1.09	0.694	pCi/l				
Radium-226	SM 7500 Ra B M*	0.254 +/- 0.130	0.123	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	-0.438 +/- 0.958	0.571	pCi/l		09/20/16	09/27/16	JR

**Lab ID** : 20160862-10  
**Client ID** : AMW-14  
**Date Sampled** : 9/2/2016 7:55:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.22 +/- 0.974	0.655	pCi/l				
Radium-226	SM 7500 Ra B M*	0.279 +/- 0.146	0.176	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	0.942 +/- 0.828	0.480	pCi/l		09/20/16	09/27/16	JR

**Lab ID** : 20160862-11  
**Client ID** : AMW-23  
**Date Sampled** : 9/2/2016 8:50:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.929 +/- 0.868	0.531	pCi/l				
Radium-226	SM 7500 Ra B M*	0.306 +/- 0.130	0.094	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	0.623 +/- 0.738	0.437	pCi/l		09/20/16	09/27/16	JR

**Lab ID** : 20160862-12  
**Client ID** : AMW-22  
**Date Sampled** : 9/2/2016 9:40:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.31 +/- 1.10	0.678	pCi/l				
Radium-226	SM 7500 Ra B M*	0.190 +/- 0.114	0.126	pCi/l		09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	1.12 +/- 0.985	0.551	pCi/l		09/20/16	09/27/16	JR

\*NELAC Certified Parameter      BDL = Below Detection Limit





Client : DHL Analytical, Inc.  
 Client Project : 1609037  
 Lab Number : 20160862  
 Date Reported : 09/28/16  
 Date Received : 09/08/16  
 Page Number : 5 of 6

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
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**Lab ID** : 20160862-13  
**Client ID** : AMW-20  
**Date Sampled** : 9/2/2016 10:30:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.27 +/- 0.939	0.577	pCi/l			
Radium-226	SM 7500 Ra B M*	0.553 +/- 0.232	0.179	pCi/l	09/19/16	09/20/16	AK
Radium-228	EPA 904*/9320*	0.719 +/- 0.707	0.398	pCi/l	09/20/16	09/27/16	JR

**Lab ID** : 20160862-14  
**Client ID** : AMW-10  
**Date Sampled** : 9/2/2016 11:15:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.60 +/- 1.26	0.831	pCi/l			
Radium-226	SM 7500 Ra B M*	1.57 +/- 0.299	0.133	pCi/l	09/19/16	09/21/16	AK
Radium-228	EPA 904*/9320*	0.035 +/- 0.964	0.699	pCi/l	09/20/16	09/27/16	JR

**Lab ID** : 20160862-15  
**Client ID** : AMW-21  
**Date Sampled** : 9/2/2016 12:05:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.43 +/- 1.25	0.760	pCi/l			
Radium-226	SM 7500 Ra B M*	0.681 +/- 0.200	0.142	pCi/l	09/19/16	09/21/16	AK
Radium-228	EPA 904*/9320*	0.746 +/- 1.05	0.618	pCi/l	09/20/16	09/27/16	JR

**Lab ID** : 20160862-16  
**Client ID** : FMW-4R  
**Date Sampled** : 9/2/2016 12:50:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.152 +/- 0.947	0.640	pCi/l			
Radium-226	SM 7500 Ra B M*	0.107 +/- 0.104	0.147	pCi/l	09/19/16	09/21/16	AK
Radium-228	EPA 904*/9320*	0.045 +/- 0.842	0.492	pCi/l	09/20/16	09/27/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1609037  
 Lab Number : 20160862  
 Date Reported : 09/28/16  
 Date Received : 09/08/16  
 Page Number : 6 of 6

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
<b>Lab ID</b> : 20160862-17							
<b>Client ID</b> : EB-1							
<b>Date Sampled</b> : 9/2/2016 1:10:00 PM							
<b>Matrix</b> : NPW							


### Radiochemical Analyses

Combined Radium		0.000 +/- 1.10	0.821	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.056 +/- 0.082	0.206	pCi/l	09/19/16	09/21/16	AK
Radium-228	EPA 904*/9320*	-0.099 +/- 1.02	0.614	pCi/l	09/20/16	09/27/16	JR

## QC Report

Parameter	Blank	LCS %REC	LCSD %REC	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.006	105.0		NC	3.110	104.0	99.1	4.9	R1135
Radium-228	-0.066	103.0		NC	0.246	88.4	89.4	1.0	R3857

Lab Approval:

  
 Ron Eidson  
 Director of Radiochemistry

DHL Analytical, Inc.

2300 Double Creek Drive  
Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1609037

# CHAIN-OF-CUSTODY RECORD

**Subcontractor:**

ESC Laboratory  
311 North Aspen  
Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515  
FAX:  
Acct #: DHLRRTX


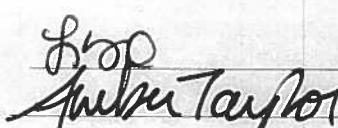
06-Sep-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests			
					E904.0	SM7500Ra-B M		
BAP-61	Aqueous	-01B	09/01/16 10:05 AM	500HDPEHNO3	1			
BAP-61	Aqueous	-01C	09/01/16 10:05 AM	500HDPEHNO3		1		
BAP-60	Aqueous	-02B	09/01/16 10:55 AM	500HDPEHNO3	1			
BAP-60	Aqueous	-02C	09/01/16 10:55 AM	500HDPEHNO3		1		
BAP-59	Aqueous	-03B	09/01/16 11:45 AM	500HDPEHNO3	1			
BAP-59	Aqueous	-03C	09/01/16 11:45 AM	500HDPEHNO3		1		
BAP-62	Aqueous	-04B	09/01/16 12:40 PM	500HDPEHNO3	1			
BAP-62	Aqueous	-04C	09/01/16 12:40 PM	500HDPEHNO3		1		
BAP-63	Aqueous	-05B	09/01/16 01:45 PM	500HDPEHNO3	1			
BAP-63	Aqueous	-05C	09/01/16 01:45 PM	500HDPEHNO3		1		
DUP-01	Aqueous	-06B	09/01/16 01:45 PM	500HDPEHNO3	1			
DUP-01	Aqueous	-06C	09/01/16 01:45 PM	500HDPEHNO3		1		
BAP-58	Aqueous	-07B	09/01/16 02:40 PM	500HDPEHNO3	1			
BAP-58	Aqueous	-07C	09/01/16 02:40 PM	500HDPEHNO3		1		
BAP-57	Aqueous	-08B	09/01/16 03:35 PM	500HDPEHNO3	1			
BAP-57	Aqueous	-08C	09/01/16 03:35 PM	500HDPEHNO3		1		
AMW-13	Aqueous	-09B	09/01/16 05:40 PM	500HDPEHNO3	1			
AMW-13	Aqueous	-09C	09/01/16 05:40 PM	500HDPEHNO3		1		

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
Report RA-226, Ra-228 & Combined per Specs DHLRRTX033116S.  
Quality Control Package Needed: Standard - NELAC Rad Test compliant  
Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

20160822 1858481

Relinquished by: 	Date/Time: 9/16/16 17:30	Received by: 	Date/Time: 9/16/16 17:30
Relinquished by:		Received by:	9/18/16 1040

DHL Analytical, Inc.  
2300 Double Creek Drive  
Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222 FAX: (512) 388-8229  
Work Order: 1609037

**Subcontractor:**

ESC Laboratory  
311 North Aspen  
Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515  
FAX:  
Acct #: DHLRRTX

06-Sep-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests				
					E904.0	M7500Ra-B M			
AMW-14	Aqueous	-10B	09/02/16 07:55 AM	500HDPEHNO3	1				
AMW-14	Aqueous	-10C	09/02/16 07:55 AM	500HDPEHNO3		1			
AMW-23	Aqueous	-11B	09/02/16 08:50 AM	500HDPEHNO3	1				
AMW-23	Aqueous	-11C	09/02/16 08:50 AM	500HDPEHNO3		1			
AMW-22	Aqueous	-12B	09/02/16 09:40 AM	500HDPEHNO3	1				
AMW-22	Aqueous	-12C	09/02/16 09:40 AM	500HDPEHNO3		1			
AMW-20	Aqueous	-13B	09/02/16 10:30 AM	500HDPEHNO3	1				
AMW-20	Aqueous	-13C	09/02/16 10:30 AM	500HDPEHNO3		1			
AMW-10	Aqueous	-14B	09/02/16 11:15 AM	500HDPEHNO3	1				
AMW-10	Aqueous	-14C	09/02/16 11:15 AM	500HDPEHNO3		1			
AMW-21	Aqueous	-15B	09/02/16 12:05 PM	500HDPEHNO3	1				
AMW-21	Aqueous	-15C	09/02/16 12:05 PM	500HDPEHNO3		1			
FMW-4R	Aqueous	-16B	09/02/16 12:50 PM	500HDPEHNO3	1				
FMW-4R	Aqueous	-16C	09/02/16 12:50 PM	500HDPEHNO3		1			
EB-1	Equip Blank	-17B	09/02/16 01:10 PM	500HDPEHNO3	1				
EB-1	Equip Blank	-17C	09/02/16 01:10 PM	500HDPEHNO3		1			

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
Report RA-226, Ra-228 & Combined per Specs DHLRRTX033116S.  
Quality Control Package Needed: Standard - NELAC Rad Test compliant  
Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

Relinquished by: <u><i>[Signature]</i></u>	Date/Time: <u>9/16/16 17:30</u>	Received by: <u><i>[Signature]</i></u>	Date/Time: <u>9/16/16 17:30</u>
Relinquished by: _____	Date/Time: _____	Received by: <u><i>Amber Taylor</i></u>	Date/Time: <u>9/18/16 1040</u>

**SAMPLE LOGIN**

Date Received: 9/8/2016 10:40:00

Lab Number: 20160862

Due: 10/6/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160862-01 B	BAP-61	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-01 A	BAP-61	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160862-02 A	BAP-60	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-02 B	BAP-60	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160862-03 A	BAP-59	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-03 B	BAP-59	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160862-04 B	BAP-62	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-04 A	BAP-62	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160862-05 A	BAP-63	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-05 B	BAP-63	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160862-06 A	DUP-01	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-06 B	DUP-01	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160862-07 A	BAP-58	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-07 B	BAP-58	NPW	09/01/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						

20160862-08 A	BAP-57	NPW	09/01/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-08 B	BAP-57	NPW	09/01/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226			SM 7500 Ra B M*					
	Radium-228			EPA 904*/9320*					
20160862-09 B	AMW-13	NPW	09/01/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-09 A	AMW-13	NPW	09/01/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226			SM 7500 Ra B M*					
	Radium-228			EPA 904*/9320*					
20160862-10 A	AMW-14	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-10 B	AMW-14	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226			SM 7500 Ra B M*					
	Radium-228			EPA 904*/9320*					
20160862-11 A	AMW-23	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-11 B	AMW-23	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226			SM 7500 Ra B M*					
	Radium-228			EPA 904*/9320*					
20160862-12 A	AMW-22	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-12 B	AMW-22	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226			SM 7500 Ra B M*					
	Radium-228			EPA 904*/9320*					
20160862-13 A	AMW-20	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-13 B	AMW-20	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226			SM 7500 Ra B M*					
	Radium-228			EPA 904*/9320*					
20160862-14 B	AMW-10	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-14 A	AMW-10	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226			SM 7500 Ra B M*					
	Radium-228			EPA 904*/9320*					
20160862-15 A	AMW-21	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-15 B	AMW-21	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
	Radium-226			SM 7500 Ra B M*					
	Radium-228			EPA 904*/9320*					
20160862-16 A	FMW-4R	NPW	09/02/16	Plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20160862-16 B	FMW-4R	NPW	09/02/16	90 plastic	500 ml	HNO <sub>3</sub> , pH < 2	<input checked="" type="checkbox"/>	Yes	Yes





November 08, 2016

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664

TEL: (512) 671-3434

FAX (512) 671-3446

Order No.: 1610065

RE: Luminant-Big Brown-Bottom Ash Ponds

Dear Will Vienne:

DHL Analytical, Inc. received 8 sample(s) on 10/8/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read "John DuPont".

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-16-17





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LUMINANT



John Dupont

---

From: Sara Taube [Sara.Taube@pbwfo.com]  
Sent: Wednesday, July 22, 2015 12:05 PM  
To: John Dupont  
Subject: CCR Appendix III and IV  
Follow Up Flag: Follow up  
Flag Status: Completed

Hi John,

Here are the Appendix III and Appendix IV constituents that we will need to have analyzed under the CCR Rule.

Appendix III

Boron  
Calcium  
Chloride  
Fluoride  
pH  
sulfate  
TDS

Appendix IV

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Fluoride  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Radium 226 and 228

We are looking to have approximately 74 wells sampled 8 times over the course of the next two years. Please let me know if there is any more information you might need.

Cheers,

Sara

10/26/2015

ORIGIN ID:FWHA (512) 671-3434  
JAY BRAYTON

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 07OCT16  
ACTWGT: 50.10 LB  
CAD: 6995923/SSFO1704  
DIMS: 23x15x14 IN

BILL THIRD PARTY

**DHL**

**2300 DOUBLE CREEK DR**

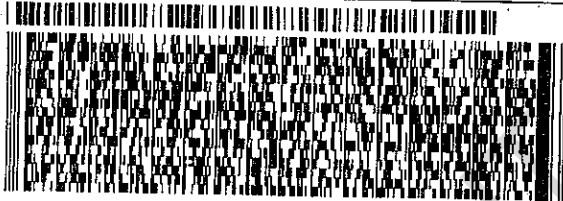
**ROUND ROCK TX 78664**

(512) 988-8222

REF:

INU:  
PO:

DEPT:



**FedEx**  
Express



1 of 3

TRK# 7842 9574 4430  
0201

## MASTER ##

**XO BSMA**

**SATURDAY 12:00P**  
**PRIORITY OVERNIGHT**

78664

TX-US AUS



ORIGIN ID:FWHA (512) 671-3434  
JAY BRAYTON

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 07OCT16  
ACTWGT: 54.80 LB  
CAD: 6995323/SSFO1704  
DIMS: 23x14x14 IN

BILL THIRD PARTY

TO **DHL**

2300 DOUBLE CREEK DR

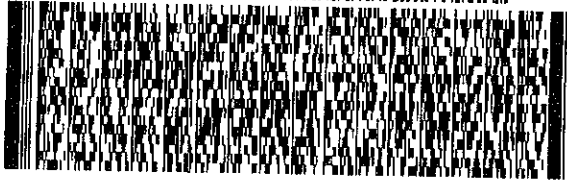
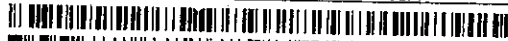
ROUND ROCK TX 78664

(512) 388-8222

REF:

INV1  
P01

DEPT:



FedEx  
Express



2 of 3

MPS# 7842 9574 4440  
0263

Mstr# 7842 9574 4430

0201

**XO BSMA**

78664

TX-US AUS



ORIGIN ID:FWHA (512) 671-3434  
JAY BRAYTON

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 07OCT16  
ACTWGT: 56.00 LB  
CAD: 6995323/SSFO1704  
DIMS: 23x15x14 IN

BILL THIRD PARTY

TO **DHL**

2300 DOUBLE CREEK DR

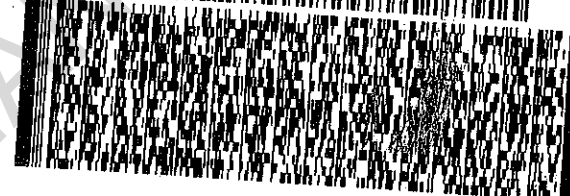
ROUND ROCK TX 78664

(512) 388-8222

REF:

INV1  
P01

DEPT:



FedEx  
Express



3 of 3

MPS# 7842 9574 4451  
0263

Mstr# 7842 9574 4430

0201

**XO BSMA**

78664

TX-US AUS



DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 10/8/2016

Work Order Number 1610065

Received by JB

Checklist completed by: [Signature] 10/10/2016  
Signature Date

Reviewed by [Initials] 10/10/2016  
Initials Date

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  0.8 °C, 0.4, 1.2
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 8086
- Adjusted? no Checked by [Signature]
- Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt? Yes  No  NA  LOT #
- Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Lab Order:** 1610065

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

Method SW6020A - Metals Analysis  
Method SW7470A - Mercury Analysis  
Method E300 - Anions Analysis  
Method M4500-H+ B - pH of a Water Analysis  
Method M2540C - TDS Analysis

Sub-contract - Radium-228 and Radium-226 analyses by methods E904/9320 and SM 7500 Ra B M.  
Analyzed at ESC Lab Sciences.

**LOG IN**

The samples were added on and log-in performed on 10/8/16. A total of 8 samples were received. The samples arrived in good condition and were properly packaged.

**METALS ANALYSIS**

For Metals analysis performed on 10/12/16 the matrix spike recovery was slightly above control limits for Calcium. This is flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

For Metals analysis performed on 10/12/16 the RPD for the serial dilution was above control limits for Boron. This is flagged accordingly. The PDS was within control limits for this analyte. No further corrective actions were taken.

For Metals analysis performed on 10/26/16 LCVL8-161026 was slightly above control limits for Boron. This is flagged accordingly. The associated CCV8-161026 was within control limits for this analyte. No further corrective actions were taken.

---

---

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Lab Order:** 1610065

**Work Order Sample Summary**

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<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
1610065-01	BAP-60		10/06/16 08:45 AM	10/8/2016
1610065-02	BAP-59		10/06/16 09:35 AM	10/8/2016
1610065-03	BAP-63		10/06/16 10:40 AM	10/8/2016
1610065-04	DUP-01		10/06/16 10:40 AM	10/8/2016
1610065-05	BAP-62		10/06/16 11:50 AM	10/8/2016
1610065-06	BAP-61		10/06/16 12:40 PM	10/8/2016
1610065-07	BAP-57		10/06/16 02:35 PM	10/8/2016
1610065-08	BAP-58		10/06/16 03:25 PM	10/8/2016

LUMINANT



**Lab Order:** 1610065  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1610065-01A	BAP-60	10/06/16 08:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-60	10/06/16 08:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-60	10/06/16 08:45 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/18/16 12:52 PM	77595
1610065-01D	BAP-60	10/06/16 08:45 AM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-60	10/06/16 08:45 AM	Aqueous	M4500-H+ B	pH Preparation	10/10/16 08:18 AM	77485
	BAP-60	10/06/16 08:45 AM	Aqueous	M2540C	TDS Preparation	10/13/16 03:03 PM	77559
1610065-02A	BAP-59	10/06/16 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-59	10/06/16 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-59	10/06/16 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-59	10/06/16 09:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/18/16 12:52 PM	77595
1610065-02D	BAP-59	10/06/16 09:35 AM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-59	10/06/16 09:35 AM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-59	10/06/16 09:35 AM	Aqueous	M4500-H+ B	pH Preparation	10/10/16 08:18 AM	77485
	BAP-59	10/06/16 09:35 AM	Aqueous	M2540C	TDS Preparation	10/13/16 03:03 PM	77559
1610065-03A	BAP-63	10/06/16 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-63	10/06/16 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-63	10/06/16 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-63	10/06/16 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-63	10/06/16 10:40 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/18/16 12:52 PM	77595
1610065-03D	BAP-63	10/06/16 10:40 AM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-63	10/06/16 10:40 AM	Aqueous	M4500-H+ B	pH Preparation	10/10/16 08:18 AM	77485
	BAP-63	10/06/16 10:40 AM	Aqueous	M2540C	TDS Preparation	10/13/16 03:03 PM	77559
1610065-04A	DUP-01	10/06/16 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	DUP-01	10/06/16 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	DUP-01	10/06/16 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	DUP-01	10/06/16 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	DUP-01	10/06/16 10:40 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/18/16 12:52 PM	77595
1610065-04D	DUP-01	10/06/16 10:40 AM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605

**Lab Order:** 1610065  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1610065-04D	DUP-01	10/06/16 10:40 AM	Aqueous	M4500-H+ B	pH Preparation	10/10/16 08:18 AM	77485
	DUP-01	10/06/16 10:40 AM	Aqueous	M2540C	TDS Preparation	10/13/16 03:03 PM	77559
1610065-05A	BAP-62	10/06/16 11:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-62	10/06/16 11:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-62	10/06/16 11:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-62	10/06/16 11:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/18/16 12:52 PM	77595
1610065-05D	BAP-62	10/06/16 11:50 AM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-62	10/06/16 11:50 AM	Aqueous	M4500-H+ B	pH Preparation	10/10/16 08:18 AM	77485
	BAP-62	10/06/16 11:50 AM	Aqueous	M2540C	TDS Preparation	10/13/16 03:03 PM	77559
1610065-06A	BAP-61	10/06/16 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-61	10/06/16 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-61	10/06/16 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-61	10/06/16 12:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/18/16 12:52 PM	77595
1610065-06D	BAP-61	10/06/16 12:40 PM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-61	10/06/16 12:40 PM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-61	10/06/16 12:40 PM	Aqueous	M4500-H+ B	pH Preparation	10/10/16 08:18 AM	77485
	BAP-61	10/06/16 12:40 PM	Aqueous	M2540C	TDS Preparation	10/13/16 03:03 PM	77559
1610065-07A	BAP-57	10/06/16 02:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-57	10/06/16 02:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-57	10/06/16 02:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-57	10/06/16 02:35 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/18/16 12:52 PM	77595
1610065-07D	BAP-57	10/06/16 02:35 PM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-57	10/06/16 02:35 PM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-57	10/06/16 02:35 PM	Aqueous	M4500-H+ B	pH Preparation	10/10/16 08:18 AM	77485
	BAP-57	10/06/16 02:35 PM	Aqueous	M2540C	TDS Preparation	10/13/16 03:03 PM	77559
1610065-08A	BAP-58	10/06/16 03:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-58	10/06/16 03:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518
	BAP-58	10/06/16 03:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/11/16 10:49 AM	77518

**Lab Order:** 1610065  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1610065-08A	BAP-58	10/06/16 03:25 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/18/16 12:52 PM	77595
1610065-08D	BAP-58	10/06/16 03:25 PM	Aqueous	E300	Anion Preparation	10/19/16 08:58 AM	77605
	BAP-58	10/06/16 03:25 PM	Aqueous	M4500-H+ B	pH Preparation	10/10/16 08:18 AM	77485
	BAP-58	10/06/16 03:25 PM	Aqueous	M2540C	TDS Preparation	10/13/16 03:03 PM	77559

LUMINANT

Lab Order: 1610065  
 Client: Pastor, Behling & Wheeler  
 Project: Luminant-Big Brown-Bottom Ash

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1610065-01A	BAP-60	Aqueous	SW7470A	Mercury Total: Aqueous	77595	1	10/21/16 10:46 AM	CETAC2_HG_161021 B
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/21/16 06:41 PM	ICP-MS3_161021C
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/27/16 12:52 AM	ICP-MS3_161026A
1610065-01D	BAP-60	Aqueous	E300	Anions by IC method - Water	77605	1	10/19/16 10:20 AM	IC2_161019A
	BAP-60	Aqueous	M4500-H+ B	pH	77485	1	10/10/16 10:42 AM	TITRATOR_161010A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	77559	1	10/14/16 08:40 AM	WC_161013A
1610065-02A	BAP-59	Aqueous	SW7470A	Mercury Total: Aqueous	77595	1	10/21/16 10:48 AM	CETAC2_HG_161021 B
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/21/16 06:47 PM	ICP-MS3_161021C
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	10	10/27/16 12:58 AM	ICP-MS3_161026A
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/27/16 02:36 AM	ICP-MS3_161026A
1610065-02D	BAP-59	Aqueous	E300	Anions by IC method - Water	77605	1	10/19/16 10:35 AM	IC2_161019A
	BAP-59	Aqueous	E300	Anions by IC method - Water	77605	10	10/19/16 01:04 PM	IC2_161019A
	BAP-59	Aqueous	M4500-H+ B	pH	77485	1	10/10/16 10:47 AM	TITRATOR_161010A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	77559	1	10/14/16 08:40 AM	WC_161013A
1610065-03A	BAP-63	Aqueous	SW7470A	Mercury Total: Aqueous	77595	1	10/21/16 10:50 AM	CETAC2_HG_161021 B
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/27/16 02:42 AM	ICP-MS3_161026A
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	10	10/27/16 01:28 PM	ICP-MS4_161027B
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/21/16 06:53 PM	ICP-MS3_161021C
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	10	10/27/16 01:10 AM	ICP-MS3_161026A
1610065-03D	BAP-63	Aqueous	E300	Anions by IC method - Water	77605	1	10/19/16 10:50 AM	IC2_161019A
	BAP-63	Aqueous	M4500-H+ B	pH	77485	1	10/10/16 10:50 AM	TITRATOR_161010A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	77559	1	10/14/16 08:40 AM	WC_161013A
1610065-04A	DUP-01	Aqueous	SW7470A	Mercury Total: Aqueous	77595	1	10/21/16 11:02 AM	CETAC2_HG_161021 B
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/21/16 06:59 PM	ICP-MS3_161021C
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	10	10/27/16 01:17 AM	ICP-MS3_161026A
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/27/16 02:48 AM	ICP-MS3_161026A

**Lab Order:** 1610065  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1610065-04A	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	10	10/27/16 01:30 PM	ICP-MS4_161027B
1610065-04D	DUP-01	Aqueous	E300	Anions by IC method - Water	77605	1	10/19/16 11:04 AM	IC2_161019A
	DUP-01	Aqueous	M4500-H+ B	pH	77485	1	10/10/16 10:53 AM	TITRATOR_161010A
	DUP-01	Aqueous	M2540C	Total Dissolved Solids	77559	1	10/14/16 08:40 AM	WC_161013A
1610065-05A	BAP-62	Aqueous	SW7470A	Mercury Total: Aqueous	77595	1	10/21/16 11:04 AM	CETAC2_HG_161021 B
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/21/16 07:05 PM	ICP-MS3_161021C
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	10	10/27/16 01:23 AM	ICP-MS3_161026A
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/27/16 02:54 AM	ICP-MS3_161026A
1610065-05D	BAP-62	Aqueous	E300	Anions by IC method - Water	77605	1	10/19/16 11:19 AM	IC2_161019A
	BAP-62	Aqueous	M4500-H+ B	pH	77485	1	10/10/16 10:54 AM	TITRATOR_161010A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	77559	1	10/14/16 08:40 AM	WC_161013A
1610065-06A	BAP-61	Aqueous	SW7470A	Mercury Total: Aqueous	77595	1	10/21/16 11:06 AM	CETAC2_HG_161021 B
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/21/16 07:11 PM	ICP-MS3_161021C
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	10	10/27/16 01:29 AM	ICP-MS3_161026A
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/27/16 03:00 AM	ICP-MS3_161026A
1610065-06D	BAP-61	Aqueous	E300	Anions by IC method - Water	77605	1	10/19/16 11:33 AM	IC2_161019A
	BAP-61	Aqueous	E300	Anions by IC method - Water	77605	10	10/19/16 01:18 PM	IC2_161019A
	BAP-61	Aqueous	M4500-H+ B	pH	77485	1	10/10/16 10:57 AM	TITRATOR_161010A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	77559	1	10/14/16 08:40 AM	WC_161013A
1610065-07A	BAP-57	Aqueous	SW7470A	Mercury Total: Aqueous	77595	1	10/21/16 11:09 AM	CETAC2_HG_161021 B
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	10	10/27/16 01:35 AM	ICP-MS3_161026A
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/27/16 03:06 AM	ICP-MS3_161026A
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/21/16 07:17 PM	ICP-MS3_161021C
1610065-07D	BAP-57	Aqueous	E300	Anions by IC method - Water	77605	1	10/19/16 11:48 AM	IC2_161019A
	BAP-57	Aqueous	E300	Anions by IC method - Water	77605	10	10/19/16 01:33 PM	IC2_161019A
	BAP-57	Aqueous	M4500-H+ B	pH	77485	1	10/10/16 11:00 AM	TITRATOR_161010A

**Lab Order:** 1610065  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1610065-07D	BAP-57	Aqueous	M2540C	Total Dissolved Solids	77559	1	10/14/16 08:40 AM	WC_161013A
1610065-08A	BAP-58	Aqueous	SW7470A	Mercury Total: Aqueous	77595	1	10/21/16 11:11 AM	CETAC2_HG_161021 B
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/21/16 08:05 PM	ICP-MS3_161021C
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/24/16 02:09 PM	ICP-MS3_161024C
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77518	1	10/27/16 02:24 AM	ICP-MS3_161026A
1610065-08D	BAP-58	Aqueous	E300	Anions by IC method - Water	77605	1	10/19/16 12:03 PM	IC2_161019A
	BAP-58	Aqueous	M4500-H+ B	pH	77485	1	10/10/16 11:03 AM	TITRATOR_161010A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	77559	1	10/14/16 08:40 AM	WC_161013A

LUMINANT

**DHL Analytical, Inc.**

Date: 08-Nov-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1610065

**Client Sample ID:** BAP-60  
**Lab ID:** 1610065-01  
**Collection Date:** 10/06/16 08:45 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/21/16 10:46 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/21/16 06:41 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:41 PM
Barium	0.0691	0.00300	0.0100		mg/L	1	10/21/16 06:41 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:41 PM
Boron	0.395	0.0100	0.0300		mg/L	1	10/27/16 12:52 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:41 PM
Calcium	13.1	0.100	0.300		mg/L	1	10/21/16 06:41 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:41 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/21/16 06:41 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:41 PM
Lithium	0.00739	0.00500	0.0100	J	mg/L	1	10/27/16 12:52 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:41 PM
Selenium	0.00269	0.00200	0.00500	J	mg/L	1	10/21/16 06:41 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/21/16 06:41 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	17.3	0.300	1.00		mg/L	1	10/19/16 10:20 AM
Fluoride	0.268	0.100	0.400	J	mg/L	1	10/19/16 10:20 AM
Sulfate	89.1	1.00	3.00		mg/L	1	10/19/16 10:20 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.56	0	0		pH Units@18.9°C	1	10/10/16 10:42 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	340	10.0	10.0		mg/L	1	10/14/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 08-Nov-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1610065

**Client Sample ID:** BAP-59  
**Lab ID:** 1610065-02  
**Collection Date:** 10/06/16 09:35 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/21/16 10:48 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/21/16 06:47 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:47 PM
Barium	0.0617	0.00300	0.0100		mg/L	1	10/21/16 06:47 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:47 PM
Boron	2.55	0.100	0.300		mg/L	10	10/27/16 12:58 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:47 PM
Calcium	48.6	1.00	3.00		mg/L	10	10/27/16 12:58 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:47 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/21/16 06:47 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:47 PM
Lithium	0.00800	0.00500	0.0100	J	mg/L	1	10/27/16 02:36 AM
Molybdenum	0.00298	0.00200	0.00500	J	mg/L	1	10/21/16 06:47 PM
Selenium	0.00357	0.00200	0.00500	J	mg/L	1	10/21/16 06:47 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/21/16 06:47 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	94.2	3.00	10.0		mg/L	10	10/19/16 01:04 PM
Fluoride	0.308	0.100	0.400	J	mg/L	1	10/19/16 10:35 AM
Sulfate	.214	10.0	30.0		mg/L	10	10/19/16 01:04 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.07	0	0		pH Units@19.8°C	1	10/10/16 10:47 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	581	10.0	10.0		mg/L	1	10/14/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 08-Nov-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1610065

**Client Sample ID:** BAP-63  
**Lab ID:** 1610065-03  
**Collection Date:** 10/06/16 10:40 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>			Analyst: <b>AH</b>		
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/21/16 10:50 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>			Analyst: <b>RO</b>		
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/21/16 06:53 PM
Arsenic	0.0137	0.00200	0.00500		mg/L	1	10/21/16 06:53 PM
Barium	0.203	0.00300	0.0100		mg/L	1	10/21/16 06:53 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:53 PM
Boron	0.950	0.100	0.300		mg/L	10	10/27/16 01:10 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:53 PM
Calcium	130	1.00	3.00		mg/L	10	10/27/16 01:28 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:53 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/21/16 06:53 PM
Lead	0.000450	0.000300	0.00100	J	mg/L	1	10/21/16 06:53 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	10/27/16 02:42 AM
Molybdenum	0.00821	0.00200	0.00500		mg/L	1	10/21/16 06:53 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:53 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/21/16 06:53 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>			Analyst: <b>AV</b>		
Chloride	40.1	0.300	1.00		mg/L	1	10/19/16 10:50 AM
Fluoride	0.160	0.100	0.400	J	mg/L	1	10/19/16 10:50 AM
Sulfate	91.7	1.00	3.00		mg/L	1	10/19/16 10:50 AM
<b>PH</b>		<b>M4500-H+ B</b>			Analyst: <b>BJT</b>		
pH	7.00	0	0		pH Units@19.5°C	1	10/10/16 10:50 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>			Analyst: <b>AJH</b>		
Total Dissolved Solids (Residue, Filterable)	640	10.0	10.0		mg/L	1	10/14/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 08-Nov-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1610065

**Client Sample ID:** DUP-01  
**Lab ID:** 1610065-04  
**Collection Date:** 10/06/16 10:40 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/21/16 11:02 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/21/16 06:59 PM
Arsenic	0.0142	0.00200	0.00500		mg/L	1	10/21/16 06:59 PM
Barium	0.210	0.00300	0.0100		mg/L	1	10/21/16 06:59 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:59 PM
Boron	1.04	0.100	0.300		mg/L	10	10/27/16 01:17 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:59 PM
Calcium	135	1.00	3.00		mg/L	10	10/27/16 01:30 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:59 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/21/16 06:59 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 06:59 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	10/27/16 02:48 AM
Molybdenum	0.00878	0.00200	0.00500		mg/L	1	10/21/16 06:59 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 06:59 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/21/16 06:59 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	39.3	0.300	1.00		mg/L	1	10/19/16 11:04 AM
Fluoride	0.104	0.100	0.400	J	mg/L	1	10/19/16 11:04 AM
Sulfate	89.3	1.00	3.00		mg/L	1	10/19/16 11:04 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.07	0	0		pH Units@19.8°C	1	10/10/16 10:53 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	603	10.0	10.0		mg/L	1	10/14/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 08-Nov-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1610065

**Client Sample ID:** BAP-62  
**Lab ID:** 1610065-05  
**Collection Date:** 10/06/16 11:50 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/21/16 11:04 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/21/16 07:05 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:05 PM
Barium	0.0533	0.00300	0.0100		mg/L	1	10/21/16 07:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:05 PM
Boron	0.771	0.100	0.300		mg/L	10	10/27/16 01:23 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:05 PM
Calcium	74.4	1.00	3.00		mg/L	10	10/27/16 01:23 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:05 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/21/16 07:05 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:05 PM
Lithium	0.0373	0.00500	0.0100		mg/L	1	10/27/16 02:54 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:05 PM
Selenium	0.0190	0.00200	0.00500		mg/L	1	10/21/16 07:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/21/16 07:05 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	8.01	0.300	1.00		mg/L	1	10/19/16 11:19 AM
Fluoride	0.348	0.100	0.400	J	mg/L	1	10/19/16 11:19 AM
Sulfate	110	1.00	3.00		mg/L	1	10/19/16 11:19 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.07	0	0		pH Units@19.7°C	1	10/10/16 10:54 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	360	10.0	10.0		mg/L	1	10/14/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 08-Nov-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1610065

**Client Sample ID:** BAP-61  
**Lab ID:** 1610065-06  
**Collection Date:** 10/06/16 12:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/21/16 11:06 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/21/16 07:11 PM
Arsenic	0.00433	0.00200	0.00500	J	mg/L	1	10/21/16 07:11 PM
Barium	0.106	0.00300	0.0100		mg/L	1	10/21/16 07:11 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:11 PM
Boron	0.744	0.100	0.300		mg/L	10	10/27/16 01:29 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:11 PM
Calcium	70.9	1.00	3.00		mg/L	10	10/27/16 01:29 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:11 PM
Cobalt	0.00592	0.00300	0.00500		mg/L	1	10/21/16 07:11 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:11 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	10/27/16 03:00 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:11 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:11 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/21/16 07:11 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	197	3.00	10.0		mg/L	10	10/19/16 01:18 PM
Fluoride	0.104	0.100	0.400	J	mg/L	1	10/19/16 11:33 AM
Sulfate	118	1.00	3.00		mg/L	1	10/19/16 11:33 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.69	0	0		pH Units@20.3°C	1	10/10/16 10:57 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	559	10.0	10.0		mg/L	1	10/14/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 08-Nov-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1610065

**Client Sample ID:** BAP-57  
**Lab ID:** 1610065-07  
**Collection Date:** 10/06/16 02:35 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/21/16 11:09 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/21/16 07:17 PM
Arsenic	0.00454	0.00200	0.00500	J	mg/L	1	10/21/16 07:17 PM
Barium	0.190	0.00300	0.0100		mg/L	1	10/21/16 07:17 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:17 PM
Boron	0.323	0.0100	0.0300		mg/L	1	10/27/16 03:06 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:17 PM
Calcium	38.8	1.00	3.00		mg/L	10	10/27/16 01:35 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:17 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/21/16 07:17 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 07:17 PM
Lithium	0.0131	0.00500	0.0100		mg/L	1	10/27/16 03:06 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:17 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 07:17 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/21/16 07:17 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	59.9	3.00	10.0		mg/L	10	10/19/16 01:33 PM
Fluoride	0.175	0.100	0.400	J	mg/L	1	10/19/16 11:48 AM
Sulfate	49.4	1.00	3.00		mg/L	1	10/19/16 11:48 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.27	0	0		pH Units@20.2°C	1	10/10/16 11:00 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	412	10.0	10.0		mg/L	1	10/14/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 08-Nov-16

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant-Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1610065

**Client Sample ID:** BAP-58  
**Lab ID:** 1610065-08  
**Collection Date:** 10/06/16 03:25 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/21/16 11:11 AM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>RO</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	10/21/16 08:05 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 08:05 PM
Barium	0.0426	0.00300	0.0100		mg/L	1	10/21/16 08:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 08:05 PM
Boron	0.882	0.0100	0.0300		mg/L	1	10/24/16 02:09 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 08:05 PM
Calcium	15.8	0.100	0.300		mg/L	1	10/21/16 08:05 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 08:05 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	10/21/16 08:05 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	10/21/16 08:05 PM
Lithium	0.00714	0.00500	0.0100	J	mg/L	1	10/27/16 02:24 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 08:05 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/21/16 08:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	10/21/16 08:05 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	29.5	0.300	1.00		mg/L	1	10/19/16 12:03 PM
Fluoride	0.211	0.100	0.400	J	mg/L	1	10/19/16 12:03 PM
Sulfate	79.5	1.00	3.00		mg/L	1	10/19/16 12:03 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.82	0	0		pH Units@20.6°C	1	10/10/16 11:03 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	263	10.0	10.0		mg/L	1	10/14/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT: Pastor, Behling & Wheeler

**ANALYTICAL QC SUMMARY REPORT**

Work Order: 1610065

Project: Luminant-Big Brown-Bottom Ash Ponds

RunID: CETAC2\_HG\_161021B

The QC data in batch 77595 applies to the following samples: 1610065-01A, 1610065-02A, 1610065-03A, 1610065-04A, 1610065-05A, 1610065-06A, 1610065-07A, 1610065-08A

Sample ID	<b>MB-77595</b>	Batch ID:	<b>77595</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MBLK</b>	Run ID:	<b>CETAC2_HG_161021B</b>	Analysis Date:	<b>10/21/2016 10:39:35 A</b>	Prep Date:	<b>10/18/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	<b>LCS-77595</b>	Batch ID:	<b>77595</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCS</b>	Run ID:	<b>CETAC2_HG_161021B</b>	Analysis Date:	<b>10/21/2016 10:41:51 A</b>	Prep Date:	<b>10/18/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00214 0.000200 0.00200 0 107 85 115

Sample ID	<b>LCSD-77595</b>	Batch ID:	<b>77595</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCSD</b>	Run ID:	<b>CETAC2_HG_161021B</b>	Analysis Date:	<b>10/21/2016 10:44:07 A</b>	Prep Date:	<b>10/18/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00217 0.000200 0.00200 0 108 85 115 1.39 15

Sample ID	<b>1610065-03A SD</b>	Batch ID:	<b>77595</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>SD</b>	Run ID:	<b>CETAC2_HG_161021B</b>	Analysis Date:	<b>10/21/2016 10:53:11 A</b>	Prep Date:	<b>10/18/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.000400 0.00100 0 0 0 0 10

Sample ID	<b>1610065-03A PDS</b>	Batch ID:	<b>77595</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>PDS</b>	Run ID:	<b>CETAC2_HG_161021B</b>	Analysis Date:	<b>10/21/2016 10:55:27 A</b>	Prep Date:	<b>10/18/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00236 0.000200 0.00250 0 94.4 85 115

Sample ID	<b>1610065-03A MS</b>	Batch ID:	<b>77595</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MS</b>	Run ID:	<b>CETAC2_HG_161021B</b>	Analysis Date:	<b>10/21/2016 10:57:43 A</b>	Prep Date:	<b>10/18/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00213 0.000200 0.00200 0 106 80 120

Sample ID	<b>1610065-03A MSD</b>	Batch ID:	<b>77595</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MSD</b>	Run ID:	<b>CETAC2_HG_161021B</b>	Analysis Date:	<b>10/21/2016 10:59:59 A</b>	Prep Date:	<b>10/18/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00211 0.000200 0.00200 0 106 80 120 0.943 15

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_161021B

Sample ID <b>ICV-161021</b>	Batch ID: <b>R88655</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_161021B</b>	Analysis Date: <b>10/21/2016 9:45:02 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00395	0.000200	0.00400	0	98.8	90	110			

Sample ID <b>CCV2-161021</b>	Batch ID: <b>R88655</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_161021B</b>	Analysis Date: <b>10/21/2016 10:35:01 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00197	0.000200	0.00200	0	98.5	90	110			

Sample ID <b>CCV3-161021</b>	Batch ID: <b>R88655</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_161021B</b>	Analysis Date: <b>10/21/2016 11:18:08 A</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00192	0.000200	0.00200	0	96.0	90	110			

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	DF Dilution Factor
	J Analyte detected between MDL and RL	MDL Method Detection Limit
	ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
	RL Reporting Limit	S Spike Recovery outside control limits
	J Analyte detected between SDL and RL	N Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_161021C**

Sample ID: <b>ICV1-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 12:35:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0960	0.00250	0.100	0	96.0	90	110			
Arsenic	0.0962	0.00500	0.100	0	96.2	90	110			
Barium	0.0942	0.0100	0.100	0	94.2	90	110			
Beryllium	0.0980	0.00100	0.100	0	98.0	90	110			
Cadmium	0.0927	0.00100	0.100	0	92.6	90	110			
Calcium	2.43	0.300	2.50	0	97.0	90	110			
Chromium	0.106	0.00500	0.100	0	106	90	110			
Cobalt	0.105	0.00500	0.100	0	105	90	110			
Lead	0.0965	0.00100	0.100	0	96.5	90	110			
Molybdenum	0.0929	0.00500	0.100	0	92.9	90	110			
Selenium	0.0938	0.00500	0.100	0	93.8	90	110			
Thallium	0.0954	0.00150	0.100	0	95.4	90	110			

Sample ID: <b>ILCVL-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 12:47:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00190	0.00250	0.00200	0	95.0	70	130			
Arsenic	0.00488	0.00500	0.00500	0	97.6	70	130			
Barium	0.00485	0.0100	0.00500	0	96.9	70	130			
Beryllium	0.00110	0.00100	0.00100	0	110	70	130			
Cadmium	0.000938	0.00100	0.00100	0	93.8	70	130			
Calcium	0.0885	0.300	0.100	0	88.5	70	130			
Chromium	0.00518	0.00500	0.00500	0	104	70	130			
Cobalt	0.00522	0.00500	0.00500	0	104	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Molybdenum	0.00465	0.00500	0.00500	0	92.9	70	130			
Selenium	0.00481	0.00500	0.00500	0	96.1	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID: <b>CCV2-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 5:28:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.185	0.00250	0.200	0	92.4	90	110			
Arsenic	0.187	0.00500	0.200	0	93.6	90	110			
Barium	0.182	0.0100	0.200	0	90.9	90	110			
Beryllium	0.193	0.00100	0.200	0	96.5	90	110			
Cadmium	0.182	0.00100	0.200	0	91.0	90	110			
Calcium	4.92	0.300	5.00	0	98.5	90	110			
Chromium	0.194	0.00500	0.200	0	96.8	90	110			

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS3\_161021C

Sample ID <b>CCV2-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 5:28:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.198	0.00500	0.200	0	99.2	90	110			
Lead	0.188	0.00100	0.200	0	93.8	90	110			
Molybdenum	0.182	0.00500	0.200	0	91.2	90	110			
Selenium	0.194	0.00500	0.200	0	97.1	90	110			
Thallium	0.190	0.00150	0.200	0	94.8	90	110			

Sample ID <b>LCVL2-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 5:40:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00213	0.00250	0.00200	0	106	70	130			
Arsenic	0.00484	0.00500	0.00500	0	96.7	70	130			
Barium	0.00492	0.0100	0.00500	0	98.4	70	130			
Beryllium	0.00116	0.00100	0.00100	0	116	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Calcium	0.105	0.300	0.100	0	105	70	130			
Chromium	0.00515	0.00500	0.00500	0	103	70	130			
Cobalt	0.00522	0.00500	0.00500	0	104	70	130			
Lead	0.00111	0.00100	0.00100	0	111	70	130			
Molybdenum	0.00475	0.00500	0.00500	0	95.0	70	130			
Selenium	0.00506	0.00500	0.00500	0	101	70	130			
Thallium	0.00118	0.00150	0.00100	0	118	70	130			

Sample ID <b>CCV3-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 7:41:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.185	0.00250	0.200	0	92.7	90	110			
Arsenic	0.189	0.00500	0.200	0	94.6	90	110			
Barium	0.183	0.0100	0.200	0	91.3	90	110			
Beryllium	0.195	0.00100	0.200	0	97.3	90	110			
Cadmium	0.181	0.00100	0.200	0	90.4	90	110			
Calcium	4.82	0.300	5.00	0	96.4	90	110			
Chromium	0.191	0.00500	0.200	0	95.7	90	110			
Cobalt	0.198	0.00500	0.200	0	99.0	90	110			
Lead	0.186	0.00100	0.200	0	93.2	90	110			
Molybdenum	0.180	0.00500	0.200	0	89.8	90	110			
Selenium	0.195	0.00500	0.200	0	97.5	90	110			
Thallium	0.186	0.00150	0.200	0	93.2	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS3\_161021C

Sample ID: <b>LCVL3-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 7:53:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00207	0.00250	0.00200	0	104	70	130			
Arsenic	0.00480	0.00500	0.00500	0	96.0	70	130			
Barium	0.00491	0.0100	0.00500	0	98.3	70	130			
Beryllium	0.00123	0.00100	0.00100	0	123	70	130			
Cadmium	0.00103	0.00100	0.00100	0	103	70	130			
Calcium	0.109	0.300	0.100	0	109	70	130			
Chromium	0.00515	0.00500	0.00500	0	103	70	130			
Cobalt	0.00521	0.00500	0.00500	0	104	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			
Molybdenum	0.00472	0.00500	0.00500	0	94.3	70	130			
Selenium	0.00538	0.00500	0.00500	0	108	70	130			
Thallium	0.00116	0.00150	0.00100	0	116	70	130			

Sample ID: <b>CCV4-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 8:42:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.192	0.00250	0.200	0	95.8	90	110			
Arsenic	0.192	0.00500	0.200	0	95.8	90	110			
Barium	0.188	0.0100	0.200	0	94.0	90	110			
Beryllium	0.199	0.00100	0.200	0	99.3	90	110			
Cadmium	0.185	0.00100	0.200	0	92.6	90	110			
Calcium	4.90	0.300	5.00	0	98.1	90	110			
Chromium	0.198	0.00500	0.200	0	98.9	90	110			
Cobalt	0.202	0.00500	0.200	0	101	90	110			
Lead	0.190	0.00100	0.200	0	95.0	90	110			
Molybdenum	0.185	0.00500	0.200	0	92.4	90	110			
Selenium	0.195	0.00500	0.200	0	97.6	90	110			
Thallium	0.191	0.00150	0.200	0	95.6	90	110			

Sample ID: <b>LCVL4-161021</b>	Batch ID: <b>R88666</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161021C</b>	Analysis Date: <b>10/21/2016 8:54:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00198	0.00250	0.00200	0	98.9	70	130			
Arsenic	0.00481	0.00500	0.00500	0	96.2	70	130			
Barium	0.00485	0.0100	0.00500	0	97.0	70	130			
Beryllium	0.00112	0.00100	0.00100	0	112	70	130			
Cadmium	0.000959	0.00100	0.00100	0	95.9	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Chromium	0.00505	0.00500	0.00500	0	101	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS3\_161021C

Sample ID	LCVL4-161021	Batch ID:	R88666	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS3_161021C	Analysis Date:	10/21/2016 8:54:00 PM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.00516	0.00500	0.00500	0	103	70	130			
Lead	0.000988	0.00100	0.00100	0	98.9	70	130			
Molybdenum	0.00443	0.00500	0.00500	0	88.7	70	130			
Selenium	0.00546	0.00500	0.00500	0	109	70	130			
Thallium	0.00107	0.00150	0.00100	0	107	70	130			

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	DF Dilution Factor
	J Analyte detected between MDL and RL	MDL Method Detection Limit
	ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
	RL Reporting Limit	S Spike Recovery outside control limits
	J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS3\_161024C

Sample ID <b>ICV1-161024</b>	Batch ID: <b>R88685</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS3_161024C</b>	Analysis Date: <b>10/24/2016 9:28:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0931	0.0300	0.100	0	93.1	90	110			
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Sample ID <b>ILCVL-161024</b>	Batch ID: <b>R88685</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161024C</b>	Analysis Date: <b>10/24/2016 9:40:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0193	0.0300	0.0200	0	96.7	70	130			
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Sample ID <b>CCV1-161024</b>	Batch ID: <b>R88685</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161024C</b>	Analysis Date: <b>10/24/2016 1:32:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.197	0.0300	0.200	0	98.6	90	110			
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Sample ID <b>LCVL1-161024</b>	Batch ID: <b>R88685</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161024C</b>	Analysis Date: <b>10/24/2016 2:03:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0162	0.0300	0.0200	0	81.0	70	130			
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Sample ID <b>CCV2-161024</b>	Batch ID: <b>R88685</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161024C</b>	Analysis Date: <b>10/24/2016 2:45:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.185	0.0300	0.200	0	92.4	90	110			
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Sample ID <b>LCVL2-161024</b>	Batch ID: <b>R88685</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161024C</b>	Analysis Date: <b>10/24/2016 2:58:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0170	0.0300	0.0200	0	85.0	70	130			
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**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Pastor, Behling & Wheeler

Work Order: 1610065

Project: Luminant-Big Brown-Bottom Ash Ponds

# ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3\_161026A

The QC data in batch 77518 applies to the following samples: 1610065-01A, 1610065-02A, 1610065-03A, 1610065-04A, 1610065-05A, 1610065-06A, 1610065-07A, 1610065-08A

Sample ID	1610075-03C SD	Batch ID:	77518	TestNo:	SW6020A	Units:	mg/L
SampType:	SD	Run ID:	ICP-MS3_161026A	Analysis Date:	10/27/2016 12:34:00 A	Prep Date:	10/11/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	63.9	15.0	0	63.7				0.329	10	

Sample ID	1610075-03C PDS	Batch ID:	77518	TestNo:	SW6020A	Units:	mg/L
SampType:	PDS	Run ID:	ICP-MS3_161026A	Analysis Date:	10/27/2016 1:41:00 AM	Prep Date:	10/11/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	68.2	3.00	5.00	63.7	91.0	80	120			

LUMINANT

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS3\_161026A**

Sample ID <b>ICV2-161026</b>	Batch ID: <b>R88703</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS3_161026A</b>	Analysis Date: <b>10/26/2016 7:54:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0907	0.0300	0.100	0	90.7	90	110			
Calcium	2.54	0.300	2.50	0	102	90	110			
Lithium	0.0937	0.0100	0.100	0	93.7	90	110			

Sample ID <b>ILCVL2-161026</b>	Batch ID: <b>R88703</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161026A</b>	Analysis Date: <b>10/26/2016 8:06:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0200	0.0300	0.0200	0	99.8	70	130			
Calcium	0.115	0.300	0.100	0	115	70	130			
Lithium	0.00965	0.0100	0.0100	0	96.5	70	130			

Sample ID <b>CCV6-161026</b>	Batch ID: <b>R88703</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161026A</b>	Analysis Date: <b>10/26/2016 11:57:00 P</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.191	0.0300	0.200	0	95.4	90	110			
Calcium	5.03	0.300	5.00	0	101	90	110			

Sample ID <b>LCVL6-161026</b>	Batch ID: <b>R88703</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161026A</b>	Analysis Date: <b>10/27/2016 12:15:00 A</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0182	0.0300	0.0200	0	91.2	70	130			
Calcium	0.121	0.300	0.100	0	121	70	130			

Sample ID <b>CCV7-161026</b>	Batch ID: <b>R88703</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161026A</b>	Analysis Date: <b>10/27/2016 1:53:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.180	0.0300	0.200	0	89.8	90	110			
Calcium	4.83	0.300	5.00	0	96.6	90	110			
Lithium	0.183	0.0100	0.200	0	91.3	90	110			

Sample ID <b>LCVL7-161026</b>	Batch ID: <b>R88703</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161026A</b>	Analysis Date: <b>10/27/2016 2:06:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0185	0.0300	0.0200	0	92.5	70	130			
Calcium	0.0975	0.300	0.100	0	97.5	70	130			
Lithium	0.00937	0.0100	0.0100	0	93.7	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS3\_161026A

Sample ID: <b>CCV8-161026</b>	Batch ID: <b>R88703</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS3_161026A</b>	Analysis Date: <b>10/27/2016 3:12:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.202	0.0300	0.200	0	101	90	110			
Lithium	0.185	0.0100	0.200	0	92.6	90	110			

Sample ID: <b>LCVL8-161026</b>	Batch ID: <b>R88703</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS3_161026A</b>	Analysis Date: <b>10/27/2016 3:31:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0267	0.0300	0.0200	0	134	70	130			S
Lithium	0.00862	0.0100	0.0100	0	86.2	70	130			

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161012A**

The QC data in batch 77518 applies to the following samples: 1610065-01A, 1610065-02A, 1610065-03A, 1610065-04A, 1610065-05A, 1610065-06A, 1610065-07A, 1610065-08A

Sample ID <b>MB-77518</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:40:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Boron	<0.0100	0.0300								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID <b>LCS-77518</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:42:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.198	0.00250	0.200	0	98.8	80	120			
Arsenic	0.198	0.00500	0.200	0	99.0	80	120			
Barium	0.195	0.0100	0.200	0	97.7	80	120			
Beryllium	0.195	0.00100	0.200	0	97.6	80	120			
Boron	0.183	0.0300	0.200	0	91.5	80	120			
Cadmium	0.201	0.00100	0.200	0	100	80	120			
Calcium	4.68	0.300	5.00	0	93.7	80	120			
Chromium	0.205	0.00500	0.200	0	102	80	120			
Cobalt	0.208	0.00500	0.200	0	104	80	120			
Lead	0.200	0.00100	0.200	0	99.8	80	120			
Lithium	0.187	0.0100	0.200	0	93.5	80	120			
Molybdenum	0.201	0.00500	0.200	0	100	80	120			
Selenium	0.198	0.00500	0.200	0	99.0	80	120			
Thallium	0.197	0.00150	0.200	0	98.7	80	120			

Sample ID <b>LCSD-77518</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:44:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.196	0.00250	0.200	0	97.8	80	120	0.992	15	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_161012A

Sample ID: <b>LCSD-77518</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:44:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.199	0.00500	0.200	0	99.6	80	120	0.621	15	
Barium	0.195	0.0100	0.200	0	97.4	80	120	0.278	15	
Beryllium	0.201	0.00100	0.200	0	101	80	120	3.02	15	
Boron	0.193	0.0300	0.200	0	96.6	80	120	5.48	15	
Cadmium	0.200	0.00100	0.200	0	99.9	80	120	0.431	15	
Calcium	4.72	0.300	5.00	0	94.4	80	120	0.814	15	
Chromium	0.206	0.00500	0.200	0	103	80	120	0.561	15	
Cobalt	0.208	0.00500	0.200	0	104	80	120	0.138	15	
Lead	0.200	0.00100	0.200	0	100	80	120	0.377	15	
Lithium	0.190	0.0100	0.200	0	95.2	80	120	1.78	15	
Molybdenum	0.199	0.00500	0.200	0	99.5	80	120	0.790	15	
Selenium	0.197	0.00500	0.200	0	98.7	80	120	0.213	15	
Thallium	0.198	0.00150	0.200	0	99.2	80	120	0.511	15	

Sample ID: <b>1610075-03C SD</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:51:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	<0.0100	0.0250	0	0				0	10	
Barium	0.0727	0.0500	0	0.0703				3.36	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Boron	0.225	0.150	0	0.161				33.1	10	R
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	0.00458	0.00500	0	0.00432				5.89	10	
Lithium	<0.0250	0.0500	0	0.0128				0	10	
Molybdenum	<0.0100	0.0250	0	0				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID: <b>1610075-03C PDS</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:59:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.187	0.00250	0.200	0	93.5	80	120			
Arsenic	0.188	0.00500	0.200	0	93.9	80	120			
Barium	0.256	0.0100	0.200	0.0703	92.8	80	120			
Beryllium	0.192	0.00100	0.200	0	96.1	80	120			
Boron	0.341	0.0300	0.200	0.161	89.6	80	120			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_161012A

Sample ID <b>1610075-03C PDS</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:59:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.186	0.00100	0.200	0	92.8	80	120			
Chromium	0.201	0.00500	0.200	0	100	80	120			
Cobalt	0.193	0.00500	0.200	0	96.6	80	120			
Lead	0.194	0.00100	0.200	0.00432	94.7	80	120			
Lithium	0.198	0.0100	0.200	0.0128	92.5	80	120			
Molybdenum	0.188	0.00500	0.200	0	93.8	80	120			
Selenium	0.182	0.00500	0.200	0	90.9	80	120			
Thallium	0.187	0.00150	0.200	0	93.4	80	120			

Sample ID <b>1610075-03C MS</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 4:01:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.3	80	120			
Arsenic	0.197	0.00500	0.200	0	98.6	80	120			
Barium	0.267	0.0100	0.200	0.0703	98.6	80	120			
Beryllium	0.200	0.00100	0.200	0	100	80	120			
Boron	0.375	0.0300	0.200	0.161	107	80	120			
Cadmium	0.197	0.00100	0.200	0	98.4	80	120			
Calcium	61.6	0.300	5.00	55.4	123	80	120			S
Chromium	0.203	0.00500	0.200	0	102	80	120			
Cobalt	0.199	0.00500	0.200	0	99.6	80	120			
Lead	0.203	0.00100	0.200	0.00432	99.1	80	120			
Lithium	0.204	0.0100	0.200	0.0128	95.4	80	120			
Molybdenum	0.199	0.00500	0.200	0	99.6	80	120			
Selenium	0.194	0.00500	0.200	0	96.8	80	120			
Thallium	0.196	0.00150	0.200	0	97.8	80	120			

Sample ID <b>1610075-03C MSD</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 4:03:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	100	80	120	0.809	15	
Arsenic	0.196	0.00500	0.200	0	98.2	80	120	0.439	15	
Barium	0.268	0.0100	0.200	0.0703	98.7	80	120	0.068	15	
Beryllium	0.198	0.00100	0.200	0	99.0	80	120	1.04	15	
Boron	0.382	0.0300	0.200	0.161	110	80	120	1.82	15	
Cadmium	0.197	0.00100	0.200	0	98.6	80	120	0.282	15	
Calcium	60.4	0.300	5.00	55.4	100	80	120	1.89	15	
Chromium	0.201	0.00500	0.200	0	101	80	120	0.986	15	
Cobalt	0.199	0.00500	0.200	0	99.5	80	120	0.027	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_161012A

Sample ID: <b>1610075-03C MSD</b>	Batch ID: <b>77518</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 4:03:00 PM</b>	Prep Date: <b>10/11/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.203	0.00100	0.200	0.00432	99.5	80	120	0.424	15	
Lithium	0.206	0.0100	0.200	0.0128	96.7	80	120	1.23	15	
Molybdenum	0.200	0.00500	0.200	0	100	80	120	0.371	15	
Selenium	0.194	0.00500	0.200	0	97.0	80	120	0.107	15	
Thallium	0.198	0.00150	0.200	0	98.8	80	120	1.01	15	

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161012A**

Sample ID <b>ICV-161012</b>	Batch ID: <b>R88522</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:30:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.101	0.00250	0.100	0	101	90	110			
Arsenic	0.102	0.00500	0.100	0	102	90	110			
Barium	0.0998	0.0100	0.100	0	99.8	90	110			
Beryllium	0.0994	0.00100	0.100	0	99.4	90	110			
Boron	0.103	0.0300	0.100	0	103	90	110			
Cadmium	0.0995	0.00100	0.100	0	99.5	90	110			
Calcium	2.47	0.300	2.50	0	98.8	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.106	0.00500	0.100	0	106	90	110			
Lead	0.0992	0.00100	0.100	0	99.2	90	110			
Lithium	0.0944	0.0100	0.100	0	94.4	90	110			
Molybdenum	0.100	0.00500	0.100	0	100	90	110			
Selenium	0.102	0.00500	0.100	0	102	90	110			
Thallium	0.0976	0.00150	0.100	0	97.6	90	110			

Sample ID <b>LCVL-161012</b>	Batch ID: <b>R88522</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 3:34:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00202	0.00250	0.00200	0	101	70	130			
Arsenic	0.00506	0.00500	0.00500	0	101	70	130			
Barium	0.00510	0.0100	0.00500	0	102	70	130			
Beryllium	0.000897	0.00100	0.00100	0	89.7	70	130			
Boron	0.0227	0.0300	0.0200	0	114	70	130			
Cadmium	0.00102	0.00100	0.00100	0	102	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Chromium	0.00533	0.00500	0.00500	0	107	70	130			
Cobalt	0.00533	0.00500	0.00500	0	107	70	130			
Lead	0.00108	0.00100	0.00100	0	108	70	130			
Lithium	0.00936	0.0100	0.0100	0	93.6	70	130			
Molybdenum	0.00566	0.00500	0.00500	0	113	70	130			
Selenium	0.00517	0.00500	0.00500	0	103	70	130			
Thallium	0.000989	0.00150	0.00100	0	98.9	70	130			

Sample ID <b>CCV1-161012</b>	Batch ID: <b>R88522</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 4:11:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	101	90	110			
Arsenic	0.207	0.00500	0.200	0	103	90	110			
Barium	0.201	0.0100	0.200	0	101	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** ICP-MS4\_161012A

Sample ID <b>CCV1-161012</b>	Batch ID: <b>R88522</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 4:11:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.208	0.00100	0.200	0	104	90	110			
Boron	0.209	0.0300	0.200	0	104	90	110			
Cadmium	0.205	0.00100	0.200	0	102	90	110			
Calcium	4.82	0.300	5.00	0	96.3	90	110			
Chromium	0.211	0.00500	0.200	0	106	90	110			
Cobalt	0.214	0.00500	0.200	0	107	90	110			
Lead	0.206	0.00100	0.200	0	103	90	110			
Lithium	0.202	0.0100	0.200	0	101	90	110			
Molybdenum	0.205	0.00500	0.200	0	103	90	110			
Selenium	0.206	0.00500	0.200	0	103	90	110			
Thallium	0.203	0.00150	0.200	0	102	90	110			

Sample ID <b>LCVL1-161012</b>	Batch ID: <b>R88522</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161012A</b>	Analysis Date: <b>10/12/2016 4:29:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00196	0.00250	0.00200	0	98.2	70	130			
Arsenic	0.00504	0.00500	0.00500	0	101	70	130			
Barium	0.00501	0.0100	0.00500	0	100	70	130			
Beryllium	0.000714	0.00100	0.00100	0	71.4	70	130			
Boron	0.0221	0.0300	0.0200	0	110	70	130			
Cadmium	0.000986	0.00100	0.00100	0	98.6	70	130			
Calcium	0.0969	0.300	0.100	0	96.9	70	130			
Chromium	0.00522	0.00500	0.00500	0	104	70	130			
Cobalt	0.00522	0.00500	0.00500	0	104	70	130			
Lead	0.000955	0.00100	0.00100	0	95.5	70	130			
Lithium	0.00957	0.0100	0.0100	0	95.7	70	130			
Molybdenum	0.00494	0.00500	0.00500	0	98.8	70	130			
Selenium	0.00515	0.00500	0.00500	0	103	70	130			
Thallium	0.000962	0.00150	0.00100	0	96.2	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161027B**

Sample ID <b>ICV-161027</b>	Batch ID: <b>R88730</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_161027B</b>	Analysis Date: <b>10/27/2016 11:48:00 A</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	2.32	0.300	2.50	0	92.8	90	110			
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Sample ID <b>LCVL-161027</b>	Batch ID: <b>R88730</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161027B</b>	Analysis Date: <b>10/27/2016 11:57:00 A</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.0961	0.300	0.100	0	96.1	70	130			
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Sample ID <b>CCV2-161027</b>	Batch ID: <b>R88730</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161027B</b>	Analysis Date: <b>10/27/2016 1:11:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.83	0.300	5.00	0	96.5	90	110			
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Sample ID <b>LCVL2-161027</b>	Batch ID: <b>R88730</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161027B</b>	Analysis Date: <b>10/27/2016 1:16:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.0950	0.300	0.100	0	95.0	70	130			
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Sample ID <b>CCV3-161027</b>	Batch ID: <b>R88730</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161027B</b>	Analysis Date: <b>10/27/2016 1:45:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.78	0.300	5.00	0	95.5	90	110			
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Sample ID <b>LCVL3-161027</b>	Batch ID: <b>R88730</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161027B</b>	Analysis Date: <b>10/27/2016 1:49:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.0969	0.300	0.100	0	96.9	70	130			
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**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Pastor, Behling & Wheeler

Work Order: 1610065

Project: Luminant-Big Brown-Bottom Ash Ponds

# ANALYTICAL QC SUMMARY REPORT

RunID: IC2\_161019A

The QC data in batch 77605 applies to the following samples: 1610065-01D, 1610065-02D, 1610065-03D, 1610065-04D, 1610065-05D, 1610065-06D, 1610065-07D, 1610065-08D

Sample ID	<b>MB-77605</b>	Batch ID:	<b>77605</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>
SampType:	<b>MBLK</b>	Run ID:	<b>IC2_161019A</b>	Analysis Date:	<b>10/19/2016 9:33:23 AM</b>	Prep Date:	<b>10/19/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID	<b>LCS-77605</b>	Batch ID:	<b>77605</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>
SampType:	<b>LCS</b>	Run ID:	<b>IC2_161019A</b>	Analysis Date:	<b>10/19/2016 9:48:00 AM</b>	Prep Date:	<b>10/19/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.88	1.00	10.00	0	98.8	90	110			
Fluoride	3.73	0.400	4.000	0	93.3	90	110			
Sulfate	29.6	3.00	30.00	0	98.7	90	110			

Sample ID	<b>LCS-77605</b>	Batch ID:	<b>77605</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>
SampType:	<b>LCS</b>	Run ID:	<b>IC2_161019A</b>	Analysis Date:	<b>10/19/2016 10:02:37 A</b>	Prep Date:	<b>10/19/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.79	1.00	10.00	0	97.9	90	110	0.869	20	
Fluoride	3.80	0.400	4.000	0	94.9	90	110	1.72	20	
Sulfate	29.7	3.00	30.00	0	99.1	90	110	0.421	20	

Sample ID	<b>1610065-07DMS</b>	Batch ID:	<b>77605</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>
SampType:	<b>MS</b>	Run ID:	<b>IC2_161019A</b>	Analysis Date:	<b>10/19/2016 1:48:11 PM</b>	Prep Date:	<b>10/19/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	267	10.0	200.0	59.89	104	90	110			
Fluoride	199	4.00	200.0	0	99.4	90	110			
Sulfate	247	30.0	200.0	46.61	100	90	110			

Sample ID	<b>1610065-07DMSD</b>	Batch ID:	<b>77605</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>
SampType:	<b>MSD</b>	Run ID:	<b>IC2_161019A</b>	Analysis Date:	<b>10/19/2016 2:17:12 PM</b>	Prep Date:	<b>10/19/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	267	10.0	200.0	59.89	103	90	110	0.117	20	
Fluoride	199	4.00	200.0	0	99.4	90	110	0.022	20	
Sulfate	245	30.0	200.0	46.61	99.0	90	110	0.996	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_161019A**

Sample ID <b>ICV-161019</b>	Batch ID: <b>R88613</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC2_161019A</b>	Analysis Date: <b>10/19/2016 8:57:00 AM</b>	Prep Date:

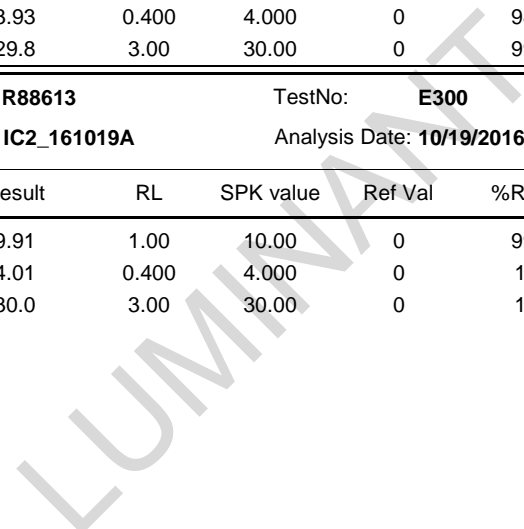
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.4	1.00	25.00	0	97.7	90	110			
Fluoride	9.62	0.400	10.00	0	96.2	90	110			
Sulfate	74.9	3.00	75.00	0	99.8	90	110			

Sample ID <b>CCV1-161019</b>	Batch ID: <b>R88613</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_161019A</b>	Analysis Date: <b>10/19/2016 12:28:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.83	1.00	10.00	0	98.3	90	110			
Fluoride	3.93	0.400	4.000	0	98.4	90	110			
Sulfate	29.8	3.00	30.00	0	99.5	90	110			

Sample ID <b>CCV2-161019</b>	Batch ID: <b>R88613</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC2_161019A</b>	Analysis Date: <b>10/19/2016 2:35:35 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.91	1.00	10.00	0	99.1	90	110			
Fluoride	4.01	0.400	4.000	0	100	90	110			
Sulfate	30.0	3.00	30.00	0	100	90	110			



- |  |   |
|--|---|
| <p><b>Qualifiers:</b></p> <ul style="list-style-type: none"> <li>B Analyte detected in the associated Method Blank</li> <li>J Analyte detected between MDL and RL</li> <li>ND Not Detected at the Method Detection Limit</li> <li>RL Reporting Limit</li> <li>J Analyte detected between SDL and RL</li> </ul> | <ul style="list-style-type: none"> <li>DF Dilution Factor</li> <li>MDL Method Detection Limit</li> <li>R RPD outside accepted control limits</li> <li>S Spike Recovery outside control limits</li> <li>N Parameter not NELAC certified</li> </ul> |
|--|---|

CLIENT: Pastor, Behling & Wheeler

Work Order: 1610065

Project: Luminant-Big Brown-Bottom Ash Ponds

# ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR\_161010A

The QC data in batch 77485 applies to the following samples: 1610065-01D, 1610065-02D, 1610065-03D, 1610065-04D, 1610065-05D, 1610065-06D, 1610065-07D, 1610065-08D

Sample ID	1610054-01B-DUP	Batch ID:	77485	TestNo:	M4500-H+ B	Units:	pH Units@19.7°C
SampType:	DUP	Run ID:	TITRATOR_161010A	Analysis Date:	10/10/2016 10:19:00 A	Prep Date:	10/10/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.11	0	0	6.110				0	5	

Sample ID	1610065-01D-DUP	Batch ID:	77485	TestNo:	M4500-H+ B	Units:	pH Units@19.3°C
SampType:	DUP	Run ID:	TITRATOR_161010A	Analysis Date:	10/10/2016 10:44:00 A	Prep Date:	10/10/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.67	0	0	6.560				1.66	5	

LUMINANT

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_161010A**

Sample ID <b>ICV-161010</b>	Batch ID: <b>R88474</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.5°C</b>
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_161010A</b>	Analysis Date: <b>10/10/2016 8:43:00 AM</b>	Prep Date: <b>10/10/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.96	0	10.00	0	99.6	99	101			

Sample ID <b>CCV1-161010</b>	Batch ID: <b>R88474</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.1°C</b>
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_161010A</b>	Analysis Date: <b>10/10/2016 10:37:00 A</b>	Prep Date: <b>10/10/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.99	0	7.000	0	99.9	97.1	102.9			

Sample ID <b>CCV2-161010</b>	Batch ID: <b>R88474</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21.6°C</b>
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_161010A</b>	Analysis Date: <b>10/10/2016 11:05:00 A</b>	Prep Date: <b>10/10/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.99	0	7.000	0	99.9	97.1	102.9			

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1610065  
**Project:** Luminant-Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_161013A**

The QC data in batch 77559 applies to the following samples: 1610065-01D, 1610065-02D, 1610065-03D, 1610065-04D, 1610065-05D, 1610065-06D, 1610065-07D, 1610065-08D

Sample ID <b>MB-77559</b>	Batch ID: <b>77559</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_161013A</b>	Analysis Date: <b>10/14/2016 8:40:00 AM</b>	Prep Date: <b>10/13/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	<10.0	10.0								

Sample ID <b>LCS-77559</b>	Batch ID: <b>77559</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_161013A</b>	Analysis Date: <b>10/14/2016 8:40:00 AM</b>	Prep Date: <b>10/13/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	751	10.0	745.6	0	101	90	113			

Sample ID <b>1610104-01B-DUP</b>	Batch ID: <b>77559</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_161013A</b>	Analysis Date: <b>10/14/2016 8:40:00 AM</b>	Prep Date: <b>10/13/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	434	10.0	0	441.0				1.60	5	

Sample ID <b>1610106-01C-DUP</b>	Batch ID: <b>77559</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_161013A</b>	Analysis Date: <b>10/14/2016 8:40:00 AM</b>	Prep Date: <b>10/13/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera										
	2740	50.0	0	2725				0.549	5	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

## Case Narrative

### Lab No: 20160989

This report contains the analytical results for the 8 sample(s) received under chain of custody by ESC Lab Sciences on 10/12/2016 10:30:22 AM. These samples are associated with your 1610065 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

---

LUMINA



Client : DHL Analytical, Inc.  
 Client Project : 1610065  
 Lab Number : 20160989  
 Date Reported : 11/07/16  
 Date Received : 10/12/16  
 Page Number : 2 of 4

## Analytical Report

	Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--	--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20160989-01  
**Client ID** : BAP-60  
**Date Sampled** : 10/6/2016 8:45:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.709 +/- 1.05	0.698	pCi/l				
Radium-226	SM 7500 Ra B M*	0.137 +/- 0.106	0.120	pCi/l		10/19/16	10/22/16	AK
Radium-228	EPA 904*/9320*	0.572 +/- 0.945	0.578	pCi/l		10/24/16	10/27/16	JR

**Lab ID** : 20160989-02  
**Client ID** : BAP-59  
**Date Sampled** : 10/6/2016 9:35:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.04 +/- 1.15	0.860	pCi/l				
Radium-226	SM 7500 Ra B M*	0.172 +/- 0.176	0.248	pCi/l		10/19/16	10/22/16	AK
Radium-228	EPA 904*/9320*	0.871 +/- 0.974	0.612	pCi/l		10/24/16	10/27/16	JR

**Lab ID** : 20160989-03  
**Client ID** : BAP-63  
**Date Sampled** : 10/6/2016 10:40:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.22 +/- 1.12	0.694	pCi/l				
Radium-226	SM 7500 Ra B M*	0.388 +/- 0.158	0.132	pCi/l		10/19/16	10/22/16	AK
Radium-228	EPA 904*/9320*	1.83 +/- 0.960	0.562	pCi/l		10/24/16	10/27/16	JR

**Lab ID** : 20160989-04  
**Client ID** : DUP-01  
**Date Sampled** : 10/6/2016 10:40:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.01 +/- 0.858	0.586	pCi/l				
Radium-226	SM 7500 Ra B M*	0.219 +/- 0.137	0.159	pCi/l		10/19/16	10/22/16	AK
Radium-228	EPA 904*/9320*	0.792 +/- 0.721	0.427	pCi/l		10/24/16	10/27/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1610065  
 Lab Number : 20160989  
 Date Reported : 11/07/16  
 Date Received : 10/12/16  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20160989-05  
**Client ID** : BAP-62  
**Date Sampled** : 10/6/2016 11:50:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.04 +/- 0.829	0.582	pCi/l			
Radium-226	SM 7500 Ra B M*	0.047 +/- 0.086	0.142	pCi/l	10/19/16	10/22/16	AK
Radium-228	EPA 904*/9320*	0.990 +/- 0.743	0.440	pCi/l	10/24/16	10/27/16	JR

**Lab ID** : 20160989-06  
**Client ID** : BAP-61  
**Date Sampled** : 10/6/2016 12:40:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.814 +/- 1.31	0.826	pCi/l			
Radium-226	SM 7500 Ra B M*	0.438 +/- 0.180	0.136	pCi/l	10/19/16	10/22/16	AK
Radium-228	EPA 904*/9320*	0.376 +/- 1.13	0.690	pCi/l	10/24/16	10/27/16	JR

**Lab ID** : 20160989-07  
**Client ID** : BAP-57  
**Date Sampled** : 10/6/2016 2:35:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.554 +/- 0.968	0.659	pCi/l			
Radium-226	SM 7500 Ra B M*	0.383 +/- 0.174	0.152	pCi/l	10/19/16	10/22/16	AK
Radium-228	EPA 904*/9320*	0.171 +/- 0.794	0.507	pCi/l	10/24/16	10/27/16	JR

**Lab ID** : 20160989-08  
**Client ID** : BAP-58  
**Date Sampled** : 10/6/2016 3:25:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		3.56 +/- 1.38	0.900	pCi/l			
Radium-226	SM 7500 Ra B M*	0.897 +/- 0.245	0.195	pCi/l	10/19/16	10/22/16	AK
Radium-228	EPA 904*/9320*	2.66 +/- 1.13	0.705	pCi/l	10/24/16	10/27/16	JR



Client : DHL Analytical, Inc.  
 Client Project : 1610065  
 Lab Number : 20160989  
 Date Reported : 11/07/16  
 Date Received : 10/12/16  
 Page Number : 4 of 4

### QC Report

Parameter	Blank	LCS %REC	LCSD %REC RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC RPD	Batch ID
Radium-226	-0.004	107.0		NC	0.225	116.0	105.0 9.3	R1147
Radium-228	0.558	101.0		NC	0.739	103.0	95.1 10.3	R3869

Lab Approval:

Ron Eidson  
 Director of Radiochemistry

LUMINANT



DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1610065

**Subcontractor:**

ESC Laboratory  
 311 North Aspen  
 Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515  
 FAX:  
 Acct #: DHLRRTX




08-Oct-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests			
					E904.0	SM7500Ra-B M		
1	BAP-60	Aqueous -01B	10/06/16 08:45 AM	500HDPEHNO3	1			
	BAP-60	Aqueous -01C	10/06/16 08:45 AM	500HDPEHNO3		1		
2	BAP-59	Aqueous -02B	10/06/16 09:35 AM	500HDPEHNO3	1			
	BAP-59	Aqueous -02C	10/06/16 09:35 AM	500HDPEHNO3		1		
3	BAP-63	Aqueous -03B	10/06/16 10:40 AM	500HDPEHNO3	1			
	BAP-63	Aqueous -03C	10/06/16 10:40 AM	500HDPEHNO3		1		
4	DUP-01	Aqueous -04B	10/06/16 10:40 AM	500HDPEHNO3	1			
	DUP-01	Aqueous -04C	10/06/16 10:40 AM	500HDPEHNO3		1		
5	BAP-62	Aqueous -05B	10/06/16 11:50 AM	500HDPEHNO3	1			
	BAP-62	Aqueous -05C	10/06/16 11:50 AM	500HDPEHNO3		1		
6	BAP-61	Aqueous -06B	10/06/16 12:40 PM	500HDPEHNO3	1			
	BAP-61	Aqueous -06C	10/06/16 12:40 PM	500HDPEHNO3		1		
7	BAP-57	Aqueous -07B	10/06/16 02:35 PM	500HDPEHNO3	1			
	BAP-57	Aqueous -07C	10/06/16 02:35 PM	500HDPEHNO3		1		
8	BAP-58	Aqueous -08B	10/06/16 03:25 PM	500HDPEHNO3	1			
	BAP-58	Aqueous -08C	10/06/16 03:25 PM	500HDPEHNO3		1		

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
 Report RA-226, Ra-228 & Combined per Specs DHLRRTX033116S.  
 Quality Control Package Needed: Standard - NELAC Rad Test compliant  
 Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

L 865704

Relinquished by: 	Date/Time: 10/12/16 1730	Received by: 	Date/Time: 10/10/16 1730
Relinquished by: _____	Date/Time: _____	Received by: 	Date/Time: 10/12/16 1030

20160989

SAMPLE LOGIN

Date Received: 10/12/2016 10:30:

Lab Number: 20160989

Due: 11/9/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160989-01 B	BAP-60	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160989-01 A	BAP-60	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160989-02 A	BAP-59	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160989-02 B	BAP-59	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160989-03 A	BAP-63	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160989-03 B	BAP-63	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160989-04 B	DUP-01	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160989-04 A	DUP-01	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160989-05 B	BAP-62	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160989-05 A	BAP-62	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160989-06 A	BAP-61	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160989-06 B	BAP-61	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160989-07 A	BAP-57	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
20160989-07 B	BAP-57	NPW	10/06/16	Plastic	500 ml	HNO3, pH < 2	<input type="checkbox"/>	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						





January 30, 2017

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664

TEL: (512) 671-3434

FAX (512) 671-3446

Order No.: 1612205

RE: Big Brown-Bottom Ash Ponds

Dear Will Vienne:

DHL Analytical, Inc. received 8 sample(s) on 12/17/2016 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read 'John DuPont', is written over a large, light grey watermark that says 'LUMINA'. The signature is written in a cursive style.

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-16-17



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LUMINANT



John Dupont

---

From: Sara Taube [Sara.Taube@pbwllc.com]  
Sent: Wednesday, July 22, 2015 12:05 PM  
To: John Dupont  
Subject: CCR Appendix III and IV  
Follow Up Flag: Follow up  
Flag Status: Completed

Hi John,

Here are the Appendix III and Appendix IV constituents that we will need to have analyzed under the CCR Rule.

Appendix III

Boron  
Calcium  
Chloride  
Fluoride  
pH  
sulfate  
TDS

Appendix IV

Antimony  
Arsenic  
Barium  
Beryllium  
Cadmium  
Chromium  
Cobalt  
Fluoride  
Lead  
Lithium  
Mercury  
Molybdenum  
Selenium  
Thallium  
Radium 226 and 228

We are looking to have approximately 74 wells sampled 8 times over the course of the next two years. Please let me know if there is any more information you might need.

Cheers,

Sara

10/26/2015

ORIGIN ID:FWHA (512) 671-3434  
JOHN  
2201 DOUBLE CREEK DR STE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

RT 512  
FZ

16  
3  
F01722  
IN  
ITY

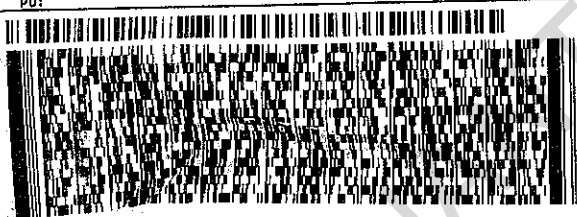
112016101201

TO DHL

2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222 REF: INU: DEPT: PD:



FedEx  
Express



112016101201

2 of 5

SATURDAY 12:00P

MPS# 7850 3628 4317

PRIORITY OVERNIGHT

Metr# 7850 3628 4306

0201

XO BSMA

78664

TX-US AUS







ORIGIN ID:FWHA (512) 671-3434  
JOHN

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 16DEC16  
ACTWT: 57.20 LB  
CAD: 6995323/SSF01722  
DIMS: 24x14x13 IN

BILL THIRD PARTY

1622101910291J

TO DHL

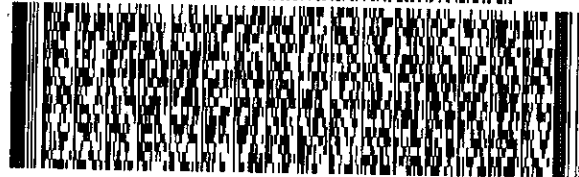
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ROUND ROCK TX 78664

(512) 388-8222

REF: INU: PO: DEPT:

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FedEx Express



AN102101910291J

5 of 5

MPS# 0263 7850 3628 4340

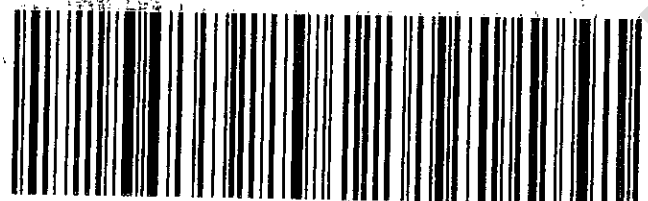
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0201

SATURDAY 12:00P  
PRIORITY OVERNIGHT

XO BSMA

78664  
TX-US AUS



ORIGIN ID:FWHA (512) 671-3434  
JOHN

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 16DEC16  
ACTWT: 59.30 LB  
CAD: 6995323/SSF01722  
DIMS: 23x14x13 IN

BILL THIRD PARTY

1622101910291J

TO DHL

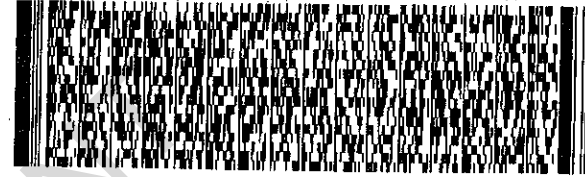
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222

REF: INU: PO: DEPT:

1622101910291J



FedEx Express



AN102101910291J

3 of 5

MPS# 0263 7850 3628 4328

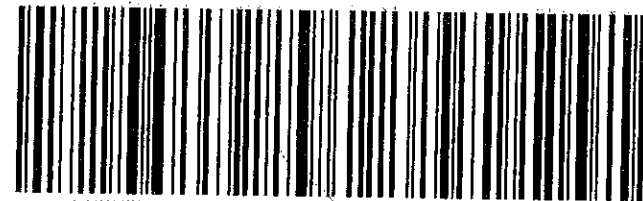
Mstr# 7850 3628 4306

0201

SATURDAY 12:00P  
PRIORITY OVERNIGHT

XO BSMA

78664  
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 12/17/2016

Work Order Number 1612205

Received by JT

Checklist completed by: [Signature] 12/19/2016

Reviewed by [Initials] 12/19/2016

Signature

Date

Initials

Date

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes  No  Not Present
- Custody seals intact on shipping container/cooler? Yes  No  Not Present
- Custody seals intact on sample bottles? Yes  No  Not Present
- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Samples in proper container/bottle? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No
- All samples received within holding time? Yes  No
- Container/Temp Blank temperature in compliance? Yes  No  3.8 °C | 4.0 | 3.0 | 2.4
- Water - VOA vials have zero headspace? Yes  No  No VOA vials submitted
- Water - pH<2 acceptable upon receipt? Yes  No  NA  LOT # 8086
- Adjusted? no Checked by [Signature]
- Water - pH>9 (S) or pH>12 (CN) acceptable upon receipt? Yes  No  NA  LOT #
- Adjusted? \_\_\_\_\_ Checked by \_\_\_\_\_

Any No response must be detailed in the comments section below.

Client contacted \_\_\_\_\_ Date contacted: \_\_\_\_\_ Person contacted \_\_\_\_\_

Contacted by: \_\_\_\_\_ Regarding: \_\_\_\_\_

Comments: \_\_\_\_\_

Corrective Action \_\_\_\_\_

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Lab Order:** 1612205

**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

Method SW6020A - Metals Analysis  
Method SW7470A - Mercury Analysis  
Method E300 - Anions Analysis  
Method M4500-H+ B - pH of a Water Analysis  
Method M2540C - TDS Analysis

Sub-contract - Radium-228 and Radium-226 analyses by methods E904/9320 and SM 7500 Ra B M.  
Analyzed at ESC Lab Sciences.

**LOG IN**

The samples were received and log-in performed on 12/17/16. A total of 8 samples were received. The samples arrived in good condition and were properly packaged.

**METALS ANALYSIS**

For Metals analysis performed on 12/29/16 the matrix spike and matrix spike duplicate recoveries were out of control limits for Boron and/or Calcium. These are flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

For Metals analysis performed on 12/29/16 the RPD for the serial dilution was above control limits for three analytes. These are flagged accordingly. The PDS was within control limits for these analytes. No further corrective actions were taken.

**MERCURY ANALYSIS**

For Mercury analysis performed on 12/22/16 the matrix spike and matrix spike duplicate recoveries were below control limits. In addition, the matrix spike and matrix spike duplicate had the RPD slightly above control limits. These are flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits. No further corrective actions were taken.

---

---

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Lab Order:** 1612205

**Work Order Sample Summary**

---

<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
1612205-01	BAP-61		12/14/16 04:40 PM	12/19/2016
1612205-02	BAP-60		12/14/16 05:35 PM	12/19/2016
1612205-03	BAP-59		12/15/16 08:15 AM	12/19/2016
1612205-04	BAP-58		12/15/16 09:10 AM	12/19/2016
1612205-05	BAP-57		12/15/16 10:00 AM	12/19/2016
1612205-06	BAP-63		12/15/16 11:20 AM	12/19/2016
1612205-07	DUP-01		12/15/16 11:20 AM	12/19/2016
1612205-08	BAP-62		12/15/16 01:20 PM	12/19/2016

LUMINANT

**Lab Order:** 1612205  
**Client:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1612205-01A	BAP-61	12/14/16 04:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-61	12/14/16 04:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-61	12/14/16 04:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-61	12/14/16 04:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612205-01D	BAP-61	12/14/16 04:40 PM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-61	12/14/16 04:40 PM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-61	12/14/16 04:40 PM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 07:58 AM	78402
	BAP-61	12/14/16 04:40 PM	Aqueous	M2540C	TDS Preparation	12/21/16 02:59 PM	78406
1612205-02A	BAP-60	12/14/16 05:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-60	12/14/16 05:35 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612205-02D	BAP-60	12/14/16 05:35 PM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-60	12/14/16 05:35 PM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 07:58 AM	78402
	BAP-60	12/14/16 05:35 PM	Aqueous	M2540C	TDS Preparation	12/21/16 02:59 PM	78406
1612205-03A	BAP-59	12/15/16 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-59	12/15/16 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-59	12/15/16 08:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612205-03D	BAP-59	12/15/16 08:15 AM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-59	12/15/16 08:15 AM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-59	12/15/16 08:15 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 07:58 AM	78402
	BAP-59	12/15/16 08:15 AM	Aqueous	M2540C	TDS Preparation	12/21/16 02:59 PM	78406
1612205-04A	BAP-58	12/15/16 09:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-58	12/15/16 09:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-58	12/15/16 09:10 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612205-04D	BAP-58	12/15/16 09:10 AM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-58	12/15/16 09:10 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 07:58 AM	78402
	BAP-58	12/15/16 09:10 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612205-05A	BAP-57	12/15/16 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-57	12/15/16 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405

**Lab Order:** 1612205  
**Client:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1612205-05A	BAP-57	12/15/16 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-57	12/15/16 10:00 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612205-05D	BAP-57	12/15/16 10:00 AM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-57	12/15/16 10:00 AM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-57	12/15/16 10:00 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 07:58 AM	78402
	BAP-57	12/15/16 10:00 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612205-06A	BAP-63	12/15/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-63	12/15/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-63	12/15/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-63	12/15/16 11:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612205-06D	BAP-63	12/15/16 11:20 AM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-63	12/15/16 11:20 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 07:58 AM	78402
	BAP-63	12/15/16 11:20 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612205-07A	DUP-01	12/15/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	DUP-01	12/15/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	DUP-01	12/15/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	DUP-01	12/15/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	DUP-01	12/15/16 11:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612205-07D	DUP-01	12/15/16 11:20 AM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	DUP-01	12/15/16 11:20 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 07:58 AM	78402
	DUP-01	12/15/16 11:20 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612205-08A	BAP-62	12/15/16 01:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-62	12/15/16 01:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-62	12/15/16 01:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BAP-62	12/15/16 01:20 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612205-08D	BAP-62	12/15/16 01:20 PM	Aqueous	E300	Anion Preparation	12/28/16 09:24 AM	78499
	BAP-62	12/15/16 01:20 PM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 07:58 AM	78402
	BAP-62	12/15/16 01:20 PM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407

Lab Order: 1612205  
 Client: Pastor, Behling & Wheeler  
 Project: Big Brown-Bottom Ash Ponds

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1612205-01A	BAP-61	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:18 PM	CETAC2_HG_161222 B
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	12/29/16 05:35 PM	ICP-MS4_161229D
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 11:59 PM	ICP-MS4_170107D
	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/08/17 07:11 PM	ICP-MS4_170108C
1612205-01D	BAP-61	Aqueous	E300	Anions by IC method - Water	78499	1	12/28/16 11:07 AM	IC4_161228A
	BAP-61	Aqueous	E300	Anions by IC method - Water	78499	10	12/28/16 04:43 PM	IC4_161228A
	BAP-61	Aqueous	M4500-H+ B	pH	78402	1	12/21/16 08:51 AM	TITRATOR_161221A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	78406	1	12/22/16 08:40 AM	WC_161221C
1612205-02A	BAP-60	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:20 PM	CETAC2_HG_161222 B
	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 05:37 PM	ICP-MS4_161229D
1612205-02D	BAP-60	Aqueous	E300	Anions by IC method - Water	78499	1	12/28/16 11:22 AM	IC4_161228A
	BAP-60	Aqueous	M4500-H+ B	pH	78402	1	12/21/16 08:56 AM	TITRATOR_161221A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	78406	1	12/22/16 08:40 AM	WC_161221C
1612205-03A	BAP-59	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:22 PM	CETAC2_HG_161222 B
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:01 PM	ICP-MS4_161229D
	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	01/07/17 02:33 PM	ICP-MS4_170107D
1612205-03D	BAP-59	Aqueous	E300	Anions by IC method - Water	78499	1	12/28/16 11:37 AM	IC4_161228A
	BAP-59	Aqueous	E300	Anions by IC method - Water	78499	10	12/28/16 04:58 PM	IC4_161228A
	BAP-59	Aqueous	M4500-H+ B	pH	78402	1	12/21/16 08:58 AM	TITRATOR_161221A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	78406	1	12/22/16 08:40 AM	WC_161221C
1612205-04A	BAP-58	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:25 PM	CETAC2_HG_161222 B
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:03 PM	ICP-MS4_161229D
	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	5	01/07/17 02:35 PM	ICP-MS4_170107D
1612205-04D	BAP-58	Aqueous	E300	Anions by IC method - Water	78499	1	12/28/16 11:52 AM	IC4_161228A
	BAP-58	Aqueous	M4500-H+ B	pH	78402	1	12/21/16 09:01 AM	TITRATOR_161221A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B



**Lab Order:** 1612205  
**Client:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1612205-05A	BAP-57	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:27 PM	CETAC2_HG_161222 B
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	01/07/17 02:37 PM	ICP-MS4_170107D
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 02:39 PM	ICP-MS4_170107D
	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:05 PM	ICP-MS4_161229D
1612205-05D	BAP-57	Aqueous	E300	Anions by IC method - Water	78499	1	12/28/16 12:07 PM	IC4_161228A
	BAP-57	Aqueous	E300	Anions by IC method - Water	78499	10	12/28/16 06:28 PM	IC4_161228A
	BAP-57	Aqueous	M4500-H+ B	pH	78402	1	12/21/16 09:02 AM	TITRATOR_161221A
	BAP-57	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612205-06A	BAP-63	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:34 PM	CETAC2_HG_161222 B
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:07 PM	ICP-MS4_161229D
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	01/07/17 02:41 PM	ICP-MS4_170107D
	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	50	01/07/17 10:27 PM	ICP-MS4_170107D
1612205-06D	BAP-63	Aqueous	E300	Anions by IC method - Water	78499	1	12/28/16 12:22 PM	IC4_161228A
	BAP-63	Aqueous	M4500-H+ B	pH	78402	1	12/21/16 09:04 AM	TITRATOR_161221A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612205-07A	DUP-01	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:36 PM	CETAC2_HG_161222 B
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	50	01/07/17 10:29 PM	ICP-MS4_170107D
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 02:46 PM	ICP-MS4_170107D
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:09 PM	ICP-MS4_161229D
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	01/07/17 02:43 PM	ICP-MS4_170107D
1612205-07D	DUP-01	Aqueous	E300	Anions by IC method - Water	78499	1	12/28/16 12:37 PM	IC4_161228A
	DUP-01	Aqueous	M4500-H+ B	pH	78402	1	12/21/16 09:06 AM	TITRATOR_161221A
	DUP-01	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612205-08A	BAP-62	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:38 PM	CETAC2_HG_161222 B
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:11 PM	ICP-MS4_161229D
	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	5	01/07/17 02:48 PM	ICP-MS4_170107D

**Lab Order:** 1612205  
**Client:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1612205-08A	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	50	01/07/17 10:31 PM	ICP-MS4_170107D
1612205-08D	BAP-62	Aqueous	E300	Anions by IC method - Water	78499	1	12/28/16 12:52 PM	IC4_161228A
	BAP-62	Aqueous	M4500-H+ B	pH	78402	1	12/21/16 09:09 AM	TITRATOR_161221A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B

LUMINANT

**DHL Analytical, Inc.**

Date: 30-Jan-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1612205

**Client Sample ID:** BAP-61  
**Lab ID:** 1612205-01  
**Collection Date:** 12/14/16 04:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:18 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	0.00219	0.000800	0.00250	J	mg/L	1	01/07/17 11:59 PM
Arsenic	0.00269	0.00200	0.00500	J	mg/L	1	01/08/17 07:11 PM
Barium	0.0970	0.00300	0.0100		mg/L	1	01/07/17 11:59 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/07/17 11:59 PM
Boron	0.903	0.100	0.300		mg/L	10	12/29/16 05:35 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/07/17 11:59 PM
Calcium	68.9	1.00	3.00		mg/L	10	12/29/16 05:35 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/07/17 11:59 PM
Cobalt	0.00692	0.00300	0.00500		mg/L	1	01/07/17 11:59 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/08/17 07:11 PM
Lithium	0.00540	0.00500	0.0100	J	mg/L	1	01/07/17 11:59 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/07/17 11:59 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/07/17 11:59 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/07/17 11:59 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	217	3.00	10.0		mg/L	10	12/28/16 04:43 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/28/16 11:07 AM
Sulfate	121	1.00	3.00		mg/L	1	12/28/16 11:07 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.70	0	0		pH Units@18.5°C	1	12/21/16 08:51 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	672	10.0	10.0		mg/L	1	12/22/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 30-Jan-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1612205

**Client Sample ID:** BAP-60  
**Lab ID:** 1612205-02  
**Collection Date:** 12/14/16 05:35 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:20 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 05:37 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:37 PM
Barium	0.0734	0.00300	0.0100		mg/L	1	12/29/16 05:37 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:37 PM
Boron	0.447	0.0100	0.0300		mg/L	1	12/29/16 05:37 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:37 PM
Calcium	11.8	0.100	0.300		mg/L	1	12/29/16 05:37 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:37 PM
Cobalt	0.00386	0.00300	0.00500	J	mg/L	1	12/29/16 05:37 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:37 PM
Lithium	0.00796	0.00500	0.0100	J	mg/L	1	12/29/16 05:37 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:37 PM
Selenium	0.00295	0.00200	0.00500	J	mg/L	1	12/29/16 05:37 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 05:37 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	15.5	0.300	1.00		mg/L	1	12/28/16 11:22 AM
Fluoride	0.148	0.100	0.400	J	mg/L	1	12/28/16 11:22 AM
Sulfate	94.1	1.00	3.00		mg/L	1	12/28/16 11:22 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.72	0	0		pH Units@18.5°C	1	12/21/16 08:56 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	347	10.0	10.0		mg/L	1	12/22/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 30-Jan-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1612205

**Client Sample ID:** BAP-59  
**Lab ID:** 1612205-03  
**Collection Date:** 12/15/16 08:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:22 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:01 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:01 PM
Barium	0.0558	0.00300	0.0100		mg/L	1	12/29/16 06:01 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:01 PM
Boron	2.88	0.100	0.300		mg/L	10	01/07/17 02:33 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:01 PM
Calcium	32.7	1.00	3.00		mg/L	10	01/07/17 02:33 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:01 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:01 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:01 PM
Lithium	0.00844	0.00500	0.0100	J	mg/L	1	12/29/16 06:01 PM
Molybdenum	0.00331	0.00200	0.00500	J	mg/L	1	12/29/16 06:01 PM
Selenium	0.00606	0.00200	0.00500		mg/L	1	12/29/16 06:01 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:01 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	71.1	3.00	10.0		mg/L	10	12/28/16 04:58 PM
Fluoride	0.291	0.100	0.400	J	mg/L	1	12/28/16 11:37 AM
Sulfate	181	10.0	30.0		mg/L	10	12/28/16 04:58 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.03	0	0		pH Units@17°C	1	12/21/16 08:58 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	483	10.0	10.0		mg/L	1	12/22/16 08:40 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 30-Jan-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1612205

**Client Sample ID:** BAP-58  
**Lab ID:** 1612205-04  
**Collection Date:** 12/15/16 09:10 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:25 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:03 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:03 PM
Barium	0.0479	0.00300	0.0100		mg/L	1	12/29/16 06:03 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:03 PM
Boron	1.01	0.0500	0.150		mg/L	5	01/07/17 02:35 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:03 PM
Calcium	14.9	0.100	0.300		mg/L	1	12/29/16 06:03 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:03 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:03 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:03 PM
Lithium	0.00818	0.00500	0.0100	J	mg/L	1	12/29/16 06:03 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:03 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:03 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:03 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	29.3	0.300	1.00		mg/L	1	12/28/16 11:52 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/28/16 11:52 AM
Sulfate	76.5	1.00	3.00		mg/L	1	12/28/16 11:52 AM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.71	0	0		pH Units@17.4°C	1	12/21/16 09:01 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	327	10.0	10.0		mg/L	1	12/22/16 08:41 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 30-Jan-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1612205

**Client Sample ID:** BAP-57  
**Lab ID:** 1612205-05  
**Collection Date:** 12/15/16 10:00 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:27 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:05 PM
Arsenic	0.00578	0.00200	0.00500		mg/L	1	12/29/16 06:05 PM
Barium	0.179	0.00300	0.0100		mg/L	1	12/29/16 06:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:05 PM
Boron	0.289	0.0100	0.0300		mg/L	1	01/07/17 02:39 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:05 PM
Calcium	31.1	1.00	3.00		mg/L	10	01/07/17 02:37 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:05 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:05 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:05 PM
Lithium	0.0105	0.00500	0.0100		mg/L	1	12/29/16 06:05 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:05 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:05 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	56.8	3.00	10.0		mg/L	10	12/28/16 06:28 PM
Fluoride	0.103	0.100	0.400	J	mg/L	1	12/28/16 12:07 PM
Sulfate	40.4	1.00	3.00		mg/L	1	12/28/16 12:07 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	7.06	0	0		pH Units@17.6°C	1	12/21/16 09:02 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	409	10.0	10.0		mg/L	1	12/22/16 08:41 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 30-Jan-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1612205

**Client Sample ID:** BAP-63  
**Lab ID:** 1612205-06  
**Collection Date:** 12/15/16 11:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:34 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:07 PM
Arsenic	0.00628	0.00200	0.00500		mg/L	1	12/29/16 06:07 PM
Barium	0.209	0.00300	0.0100		mg/L	1	12/29/16 06:07 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:07 PM
Boron	1.26	0.100	0.300		mg/L	10	01/07/17 02:41 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:07 PM
Calcium	150	5.00	15.0		mg/L	50	01/07/17 10:27 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:07 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:07 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:07 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	12/29/16 06:07 PM
Molybdenum	0.00766	0.00200	0.00500		mg/L	1	12/29/16 06:07 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:07 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:07 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	22.1	0.300	1.00		mg/L	1	12/28/16 12:22 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/28/16 12:22 PM
Sulfate	67.9	1.00	3.00		mg/L	1	12/28/16 12:22 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.89	0	0		pH Units@17.4°C	1	12/21/16 09:04 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	617	10.0	10.0		mg/L	1	12/22/16 08:41 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 30-Jan-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1612205

**Client Sample ID:** DUP-01  
**Lab ID:** 1612205-07  
**Collection Date:** 12/15/16 11:20 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:36 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:09 PM
Arsenic	0.00869	0.00200	0.00500		mg/L	1	12/29/16 06:09 PM
Barium	0.230	0.00300	0.0100		mg/L	1	12/29/16 06:09 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:09 PM
Boron	0.831	0.100	0.300		mg/L	10	01/07/17 02:43 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:09 PM
Calcium	150	5.00	15.0		mg/L	50	01/07/17 10:29 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:09 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:09 PM
Lead	0.000433	0.000300	0.00100	J	mg/L	1	12/29/16 06:09 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	12/29/16 06:09 PM
Molybdenum	0.00774	0.00200	0.00500		mg/L	1	12/29/16 06:09 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:09 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:09 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	24.1	0.300	1.00		mg/L	1	12/28/16 12:37 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/28/16 12:37 PM
Sulfate	71.8	1.00	3.00		mg/L	1	12/28/16 12:37 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.89	0	0		pH Units@17.5°C	1	12/21/16 09:06 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	612	10.0	10.0		mg/L	1	12/22/16 08:41 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 30-Jan-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Big Brown-Bottom Ash Ponds  
**Project No:** 5164-A  
**Lab Order:** 1612205

**Client Sample ID:** BAP-62  
**Lab ID:** 1612205-08  
**Collection Date:** 12/15/16 01:20 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>MERCURY TOTAL: AQUEOUS</b>		<b>SW7470A</b>		Analyst: <b>AH</b>			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:38 PM
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>CVD</b>			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:11 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:11 PM
Barium	0.0706	0.00300	0.0100		mg/L	1	12/29/16 06:11 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:11 PM
Boron	0.963	0.0500	0.150		mg/L	5	01/07/17 02:48 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:11 PM
Calcium	68.7	5.00	15.0		mg/L	50	01/07/17 10:31 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:11 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:11 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:11 PM
Lithium	0.0439	0.00500	0.0100		mg/L	1	12/29/16 06:11 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:11 PM
Selenium	0.0180	0.00200	0.00500		mg/L	1	12/29/16 06:11 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:11 PM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>AV</b>			
Chloride	8.09	0.300	1.00		mg/L	1	12/28/16 12:52 PM
Fluoride	0.159	0.100	0.400	J	mg/L	1	12/28/16 12:52 PM
Sulfate	87.1	1.00	3.00		mg/L	1	12/28/16 12:52 PM
<b>PH</b>		<b>M4500-H+ B</b>		Analyst: <b>BJT</b>			
pH	6.75	0	0		pH Units@17.9°C	1	12/21/16 09:09 AM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>AJH</b>			
Total Dissolved Solids (Residue, Filterable)	430	10.0	10.0		mg/L	1	12/22/16 08:41 AM

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT: Pastor, Behling & Wheeler

**ANALYTICAL QC SUMMARY REPORT**

Work Order: 1612205

Project: Big Brown-Bottom Ash Ponds

RunID: CETAC2\_HG\_161222B

The QC data in batch 78414 applies to the following samples: 1612205-01A, 1612205-02A, 1612205-03A, 1612205-04A, 1612205-05A, 1612205-06A, 1612205-07A, 1612205-08A

Sample ID	<b>MB-78414</b>	Batch ID:	<b>78414</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MBLK</b>	Run ID:	<b>CETAC2_HG_161222B</b>	Analysis Date:	<b>12/22/2016 1:17:18 PM</b>	Prep Date:	<b>12/21/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	<b>LCS-78414</b>	Batch ID:	<b>78414</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCS</b>	Run ID:	<b>CETAC2_HG_161222B</b>	Analysis Date:	<b>12/22/2016 1:19:33 PM</b>	Prep Date:	<b>12/21/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00203 0.000200 0.00200 0 102 85 115

Sample ID	<b>LCSD-78414</b>	Batch ID:	<b>78414</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCSD</b>	Run ID:	<b>CETAC2_HG_161222B</b>	Analysis Date:	<b>12/22/2016 1:21:50 PM</b>	Prep Date:	<b>12/21/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00198 0.000200 0.00200 0 99.0 85 115 2.49 15

Sample ID	<b>1612145-01A MS</b>	Batch ID:	<b>78414</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MS</b>	Run ID:	<b>CETAC2_HG_161222B</b>	Analysis Date:	<b>12/22/2016 1:51:23 PM</b>	Prep Date:	<b>12/21/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.000230 0.000200 0.00200 0 11.5 80 120 S

Sample ID	<b>1612145-01A MSD</b>	Batch ID:	<b>78414</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>MSD</b>	Run ID:	<b>CETAC2_HG_161222B</b>	Analysis Date:	<b>12/22/2016 1:53:39 PM</b>	Prep Date:	<b>12/21/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.000183 0.000200 0.00200 0 9.15 80 120 22.8 15 SR

Sample ID	<b>1612205-01A SD</b>	Batch ID:	<b>78414</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>SD</b>	Run ID:	<b>CETAC2_HG_161222B</b>	Analysis Date:	<b>12/22/2016 2:04:44 PM</b>	Prep Date:	<b>12/21/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.000400 0.00100 0 0 0 0 10

Sample ID	<b>1612205-01A PDS</b>	Batch ID:	<b>78414</b>	TestNo:	<b>SW7470A</b>	Units:	<b>mg/L</b>			
SampType:	<b>PDS</b>	Run ID:	<b>CETAC2_HG_161222B</b>	Analysis Date:	<b>12/22/2016 2:06:59 PM</b>	Prep Date:	<b>12/21/2016</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00240 0.000200 0.00250 0 96.0 85 115

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID:** CETAC2\_HG\_161222B

Sample ID <b>ICV-161222</b>	Batch ID: <b>R89600</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>CETAC2_HG_161222B</b>	Analysis Date: <b>12/22/2016 10:43:02 A</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00397	0.000200	0.00400	0	99.2	90	110
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Sample ID <b>CCV3-161222</b>	Batch ID: <b>R89600</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_161222B</b>	Analysis Date: <b>12/22/2016 12:41:08 P</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00202	0.000200	0.00200	0	101	90	110
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Sample ID <b>CCV-161222</b>	Batch ID: <b>R89600</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_161222B</b>	Analysis Date: <b>12/22/2016 2:00:08 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00213	0.000200	0.00200	0	106	90	110
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Sample ID <b>CCV4-161222</b>	Batch ID: <b>R89600</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_161222B</b>	Analysis Date: <b>12/22/2016 2:29:41 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00209	0.000200	0.00200	0	104	90	110
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Sample ID <b>CCV5-161222</b>	Batch ID: <b>R89600</b>	TestNo: <b>SW7470A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>CETAC2_HG_161222B</b>	Analysis Date: <b>12/22/2016 2:56:59 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00211	0.000200	0.00200	0	106	90	110
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**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161229D**

The QC data in batch 78405 applies to the following samples: 1612205-01A, 1612205-02A, 1612205-03A, 1612205-04A, 1612205-05A, 1612205-06A, 1612205-07A, 1612205-08A

Sample ID: <b>MB-78405</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:11:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
Arsenic	<0.00200	0.00500								
Barium	<0.00300	0.0100								
Beryllium	<0.000300	0.00100								
Boron	<0.0100	0.0300								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Chromium	<0.00200	0.00500								
Cobalt	<0.00300	0.00500								
Lead	<0.000300	0.00100								
Lithium	<0.00500	0.0100								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID: <b>LCS-78405</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:13:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	101	80	120			
Arsenic	0.212	0.00500	0.200	0	106	80	120			
Barium	0.204	0.0100	0.200	0	102	80	120			
Beryllium	0.214	0.00100	0.200	0	107	80	120			
Boron	0.201	0.0300	0.200	0	101	80	120			
Cadmium	0.203	0.00100	0.200	0	102	80	120			
Calcium	4.88	0.300	5.00	0	97.5	80	120			
Chromium	0.210	0.00500	0.200	0	105	80	120			
Cobalt	0.210	0.00500	0.200	0	105	80	120			
Lead	0.195	0.00100	0.200	0	97.7	80	120			
Lithium	0.205	0.0100	0.200	0	102	80	120			
Molybdenum	0.193	0.00500	0.200	0	96.7	80	120			
Selenium	0.213	0.00500	0.200	0	107	80	120			
Thallium	0.198	0.00150	0.200	0	98.8	80	120			

Sample ID: <b>LCSD-78405</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:15:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.206	0.00250	0.200	0	103	80	120	1.65	15	

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161229D**

Sample ID <b>LCSD-78405</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:15:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.215	0.00500	0.200	0	107	80	120	1.12	15	
Barium	0.208	0.0100	0.200	0	104	80	120	2.07	15	
Beryllium	0.218	0.00100	0.200	0	109	80	120	1.59	15	
Boron	0.209	0.0300	0.200	0	104	80	120	3.85	15	
Cadmium	0.207	0.00100	0.200	0	103	80	120	1.85	15	
Calcium	4.85	0.300	5.00	0	96.9	80	120	0.610	15	
Chromium	0.210	0.00500	0.200	0	105	80	120	0.150	15	
Cobalt	0.211	0.00500	0.200	0	105	80	120	0.431	15	
Lead	0.196	0.00100	0.200	0	98.1	80	120	0.382	15	
Lithium	0.205	0.0100	0.200	0	102	80	120	0.105	15	
Molybdenum	0.196	0.00500	0.200	0	98.2	80	120	1.58	15	
Selenium	0.213	0.00500	0.200	0	106	80	120	0.300	15	
Thallium	0.199	0.00150	0.200	0	99.7	80	120	0.968	15	

Sample ID <b>1612145-04A SD</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:21:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.649	1.50	0	0.993				41.8	10	R
Calcium	150	15.0	0	149				0.809	10	

Sample ID <b>1612145-04A PDS</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:41:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	2.91	0.300	2.00	0.993	95.8	80	120			
Calcium	192	3.00	50.0	149	86.4	80	120			

Sample ID <b>1612145-04A MS</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:43:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	1.21	0.300	0.200	0.993	110	80	120			
Calcium	152	3.00	5.00	149	60.8	80	120			S

Sample ID <b>1612145-04A MSD</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:45:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	1.25	0.300	0.200	0.993	128	80	120	2.91	15	S
Calcium	156	3.00	5.00	149	139	80	120	2.54	15	S

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161229D**

Sample ID <b>1612145-04A SD</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:59:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	<0.0100	0.0250	0	0.00217				0	10	
Barium	0.0245	0.0500	0	0.0438				56.3	10	R
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	0.0382	0.0500	0	0.0631				49.1	10	R
Molybdenum	<0.0100	0.0250	0	0				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID <b>1612145-04A PDS</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 6:19:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.204	0.00250	0.200	0	102	80	120			
Arsenic	0.209	0.00500	0.200	0.00217	103	80	120			
Barium	0.240	0.0100	0.200	0.0438	98.0	80	120			
Beryllium	0.190	0.00100	0.200	0	95.0	80	120			
Cadmium	0.186	0.00100	0.200	0	92.9	80	120			
Chromium	0.195	0.00500	0.200	0	97.4	80	120			
Cobalt	0.192	0.00500	0.200	0	95.8	80	120			
Lead	0.190	0.00100	0.200	0	95.1	80	120			
Lithium	0.238	0.0100	0.200	0.0631	87.5	80	120			
Molybdenum	0.186	0.00500	0.200	0	93.1	80	120			
Selenium	0.201	0.00500	0.200	0	100	80	120			
Thallium	0.193	0.00150	0.200	0	96.4	80	120			

Sample ID <b>1612145-04A MS</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 6:21:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.205	0.00250	0.200	0	102	80	120			
Arsenic	0.218	0.00500	0.200	0.00217	108	80	120			
Barium	0.249	0.0100	0.200	0.0438	103	80	120			
Beryllium	0.199	0.00100	0.200	0	99.3	80	120			
Cadmium	0.195	0.00100	0.200	0	97.4	80	120			
Chromium	0.196	0.00500	0.200	0	97.9	80	120			
Cobalt	0.196	0.00500	0.200	0	97.8	80	120			

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161229D**

Sample ID: <b>1612145-04A MS</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 6:21:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.197	0.00100	0.200	0	98.7	80	120			
Lithium	0.245	0.0100	0.200	0.0631	90.8	80	120			
Molybdenum	0.200	0.00500	0.200	0	100	80	120			
Selenium	0.213	0.00500	0.200	0	107	80	120			
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID: <b>1612145-04A MSD</b>	Batch ID: <b>78405</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 6:23:00 PM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.204	0.00250	0.200	0	102	80	120	0.234	15	
Arsenic	0.219	0.00500	0.200	0.00217	109	80	120	0.527	15	
Barium	0.250	0.0100	0.200	0.0438	103	80	120	0.305	15	
Beryllium	0.192	0.00100	0.200	0	95.8	80	120	3.62	15	
Cadmium	0.194	0.00100	0.200	0	97.2	80	120	0.164	15	
Chromium	0.197	0.00500	0.200	0	98.4	80	120	0.493	15	
Cobalt	0.200	0.00500	0.200	0	99.8	80	120	2.05	15	
Lead	0.199	0.00100	0.200	0	99.3	80	120	0.543	15	
Lithium	0.249	0.0100	0.200	0.0631	93.0	80	120	1.81	15	
Molybdenum	0.199	0.00500	0.200	0	99.6	80	120	0.484	15	
Selenium	0.216	0.00500	0.200	0	108	80	120	1.15	15	
Thallium	0.202	0.00150	0.200	0	101	80	120	0.022	15	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161229D**

Sample ID <b>ICV-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 12:28:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.100	0.00250	0.100	0	100	90	110			
Arsenic	0.103	0.00500	0.100	0	103	90	110			
Barium	0.102	0.0100	0.100	0	102	90	110			
Beryllium	0.105	0.00100	0.100	0	105	90	110			
Boron	0.0957	0.0300	0.100	0	95.7	90	110			
Cadmium	0.102	0.00100	0.100	0	102	90	110			
Calcium	2.29	0.300	2.50	0	91.7	90	110			
Chromium	0.108	0.00500	0.100	0	108	90	110			
Cobalt	0.108	0.00500	0.100	0	108	90	110			
Lead	0.0994	0.00100	0.100	0	99.4	90	110			
Lithium	0.0994	0.0100	0.100	0	99.4	90	110			
Molybdenum	0.0958	0.00500	0.100	0	95.8	90	110			
Selenium	0.104	0.00500	0.100	0	104	90	110			
Thallium	0.101	0.00150	0.100	0	101	90	110			

Sample ID <b>LCVL-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 12:34:00 P</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00207	0.00250	0.00200	0	104	70	130			
Arsenic	0.00545	0.00500	0.00500	0	109	70	130			
Barium	0.00541	0.0100	0.00500	0	108	70	130			
Beryllium	0.00116	0.00100	0.00100	0	116	70	130			
Boron	0.0175	0.0300	0.0200	0	87.3	70	130			
Cadmium	0.00108	0.00100	0.00100	0	108	70	130			
Calcium	0.107	0.300	0.100	0	107	70	130			
Chromium	0.00562	0.00500	0.00500	0	112	70	130			
Cobalt	0.00551	0.00500	0.00500	0	110	70	130			
Lead	0.00114	0.00100	0.00100	0	114	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			
Molybdenum	0.00529	0.00500	0.00500	0	106	70	130			
Selenium	0.00594	0.00500	0.00500	0	119	70	130			
Thallium	0.00105	0.00150	0.00100	0	105	70	130			

Sample ID <b>CCV4-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 4:51:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.207	0.00250	0.200	0	103	90	110			
Arsenic	0.217	0.00500	0.200	0	108	90	110			
Barium	0.212	0.0100	0.200	0	106	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161229D**

Sample ID <b>CCV4-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 4:51:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.214	0.00100	0.200	0	107	90	110			
Boron	0.217	0.0300	0.200	0	109	90	110			
Cadmium	0.211	0.00100	0.200	0	106	90	110			
Calcium	4.88	0.300	5.00	0	97.7	90	110			
Chromium	0.211	0.00500	0.200	0	105	90	110			
Cobalt	0.214	0.00500	0.200	0	107	90	110			
Lead	0.199	0.00100	0.200	0	99.6	90	110			
Lithium	0.208	0.0100	0.200	0	104	90	110			
Molybdenum	0.202	0.00500	0.200	0	101	90	110			
Selenium	0.217	0.00500	0.200	0	108	90	110			
Thallium	0.204	0.00150	0.200	0	102	90	110			

Sample ID <b>LCVL4-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:05:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00202	0.00250	0.00200	0	101	70	130			
Arsenic	0.00562	0.00500	0.00500	0	112	70	130			
Barium	0.00544	0.0100	0.00500	0	109	70	130			
Beryllium	0.00102	0.00100	0.00100	0	102	70	130			
Boron	0.0228	0.0300	0.0200	0	114	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.125	0.300	0.100	0	125	70	130			
Chromium	0.00536	0.00500	0.00500	0	107	70	130			
Cobalt	0.00554	0.00500	0.00500	0	111	70	130			
Lead	0.000998	0.00100	0.00100	0	99.8	70	130			
Lithium	0.0105	0.0100	0.0100	0	105	70	130			
Molybdenum	0.00495	0.00500	0.00500	0	99.1	70	130			
Selenium	0.00614	0.00500	0.00500	0	123	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID <b>CCV5-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:47:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.5	90	110			
Arsenic	0.212	0.00500	0.200	0	106	90	110			
Barium	0.204	0.0100	0.200	0	102	90	110			
Beryllium	0.207	0.00100	0.200	0	104	90	110			
Boron	0.196	0.0300	0.200	0	97.8	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161229D**

Sample ID <b>CCV5-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:47:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.81	0.300	5.00	0	96.2	90	110			
Chromium	0.206	0.00500	0.200	0	103	90	110			
Cobalt	0.207	0.00500	0.200	0	104	90	110			
Lead	0.196	0.00100	0.200	0	98.0	90	110			
Lithium	0.199	0.0100	0.200	0	99.6	90	110			
Molybdenum	0.193	0.00500	0.200	0	96.7	90	110			
Selenium	0.211	0.00500	0.200	0	105	90	110			
Thallium	0.200	0.00150	0.200	0	99.8	90	110			

Sample ID <b>LCVL5-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 5:51:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00214	0.00250	0.00200	0	107	70	130			
Arsenic	0.00577	0.00500	0.00500	0	115	70	130			
Barium	0.00535	0.0100	0.00500	0	107	70	130			
Beryllium	0.00108	0.00100	0.00100	0	108	70	130			
Boron	0.0194	0.0300	0.0200	0	96.8	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.107	0.300	0.100	0	107	70	130			
Chromium	0.00553	0.00500	0.00500	0	111	70	130			
Cobalt	0.00557	0.00500	0.00500	0	111	70	130			
Lead	0.00104	0.00100	0.00100	0	104	70	130			
Lithium	0.0101	0.0100	0.0100	0	101	70	130			
Molybdenum	0.00520	0.00500	0.00500	0	104	70	130			
Selenium	0.00626	0.00500	0.00500	0	125	70	130			
Thallium	0.00111	0.00150	0.00100	0	111	70	130			

Sample ID <b>CCV6-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 6:25:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.201	0.00250	0.200	0	100	90	110			
Arsenic	0.211	0.00500	0.200	0	105	90	110			
Barium	0.205	0.0100	0.200	0	103	90	110			
Beryllium	0.202	0.00100	0.200	0	101	90	110			
Cadmium	0.200	0.00100	0.200	0	100	90	110			
Calcium	4.74	0.300	5.00	0	94.9	90	110			
Chromium	0.201	0.00500	0.200	0	101	90	110			
Cobalt	0.204	0.00500	0.200	0	102	90	110			
Lead	0.192	0.00100	0.200	0	96.0	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_161229D**

Sample ID: <b>CCV6-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 6:25:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.197	0.0100	0.200	0	98.4	90	110			
Molybdenum	0.193	0.00500	0.200	0	96.4	90	110			
Selenium	0.216	0.00500	0.200	0	108	90	110			
Thallium	0.196	0.00150	0.200	0	98.0	90	110			

Sample ID: <b>LCVL6-161229</b>	Batch ID: <b>R89722</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_161229D</b>	Analysis Date: <b>12/29/2016 6:29:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00208	0.00250	0.00200	0	104	70	130			
Arsenic	0.00578	0.00500	0.00500	0	116	70	130			
Barium	0.00545	0.0100	0.00500	0	109	70	130			
Beryllium	0.00105	0.00100	0.00100	0	104	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.116	0.300	0.100	0	116	70	130			
Chromium	0.00544	0.00500	0.00500	0	109	70	130			
Cobalt	0.00556	0.00500	0.00500	0	111	70	130			
Lead	0.00105	0.00100	0.00100	0	105	70	130			
Lithium	0.0108	0.0100	0.0100	0	108	70	130			
Molybdenum	0.00510	0.00500	0.00500	0	102	70	130			
Selenium	0.00606	0.00500	0.00500	0	121	70	130			
Thallium	0.00108	0.00150	0.00100	0	108	70	130			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_170107D**

Sample ID: <b>ICV-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 12:28:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.0993	0.00250	0.100	0	99.3	90	110			
Barium	0.103	0.0100	0.100	0	103	90	110			
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Cadmium	0.102	0.00100	0.100	0	102	90	110			
Chromium	0.107	0.00500	0.100	0	107	90	110			
Cobalt	0.106	0.00500	0.100	0	106	90	110			
Lithium	0.100	0.0100	0.100	0	100	90	110			
Molybdenum	0.0993	0.00500	0.100	0	99.3	90	110			
Selenium	0.103	0.00500	0.100	0	103	90	110			
Thallium	0.101	0.00150	0.100	0	101	90	110			

Sample ID: <b>LCVL-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 12:32:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00190	0.00250	0.00200	0	95.0	70	130			
Barium	0.00514	0.0100	0.00500	0	103	70	130			
Beryllium	0.000982	0.00100	0.00100	0	98.2	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Chromium	0.00526	0.00500	0.00500	0	105	70	130			
Cobalt	0.00522	0.00500	0.00500	0	104	70	130			
Lithium	0.00973	0.0100	0.0100	0	97.3	70	130			
Molybdenum	0.00532	0.00500	0.00500	0	106	70	130			
Selenium	0.00521	0.00500	0.00500	0	104	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID: <b>CCV1-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 1:36:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.216	0.0300	0.200	0	108	90	110			
Calcium	4.93	0.300	5.00	0	98.5	90	110			

Sample ID: <b>LCVL1-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 2:28:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0253	0.0300	0.0200	0	127	70	130			
Calcium	0.0989	0.300	0.100	0	98.9	70	130			

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_170107D**

Sample ID <b>CCV2-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 2:54:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.210	0.0300	0.200	0	105	90	110			
Calcium	5.18	0.300	5.00	0	104	90	110			

Sample ID <b>LCVL2-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 3:42:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0243	0.0300	0.0200	0	121	70	130			
Calcium	0.0985	0.300	0.100	0	98.5	70	130			

Sample ID <b>CCV10-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 10:05:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.78	0.300	5.00	0	95.5	90	110			

Sample ID <b>LCVL10-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 10:09:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0788	0.300	0.100	0	78.8	70	130			

Sample ID <b>CCV11-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 10:33:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.88	0.300	5.00	0	97.7	90	110			

Sample ID <b>LCVL11-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 10:37:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0887	0.300	0.100	0	88.7	70	130			

Sample ID <b>CCV12-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 11:26:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.203	0.00250	0.200	0	101	90	110			
Barium	0.202	0.0100	0.200	0	101	90	110			
Beryllium	0.209	0.00100	0.200	0	105	90	110			

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_170107D**

Sample ID <b>CCV12-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 11:26:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cadmium	0.205	0.00100	0.200	0	103	90	110			
Chromium	0.203	0.00500	0.200	0	102	90	110			
Cobalt	0.214	0.00500	0.200	0	107	90	110			
Lithium	0.201	0.0100	0.200	0	101	90	110			
Molybdenum	0.198	0.00500	0.200	0	98.9	90	110			
Selenium	0.219	0.00500	0.200	0	109	90	110			
Thallium	0.204	0.00150	0.200	0	102	90	110			

Sample ID <b>LCVL12-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/7/2017 11:30:00 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00221	0.00250	0.00200	0	110	70	130			
Barium	0.00499	0.0100	0.00500	0	99.8	70	130			
Beryllium	0.00113	0.00100	0.00100	0	113	70	130			
Cadmium	0.00110	0.00100	0.00100	0	110	70	130			
Chromium	0.00503	0.00500	0.00500	0	101	70	130			
Cobalt	0.00540	0.00500	0.00500	0	108	70	130			
Lithium	0.00995	0.0100	0.0100	0	99.5	70	130			
Molybdenum	0.00494	0.00500	0.00500	0	98.8	70	130			
Selenium	0.00604	0.00500	0.00500	0	121	70	130			
Thallium	0.00109	0.00150	0.00100	0	109	70	130			

Sample ID <b>CCV13-170107</b>	Batch ID: <b>R89825</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170107D</b>	Analysis Date: <b>1/8/2017 12:01:00 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.204	0.00250	0.200	0	102	90	110			
Barium	0.200	0.0100	0.200	0	100	90	110			
Beryllium	0.209	0.00100	0.200	0	104	90	110			
Cadmium	0.204	0.00100	0.200	0	102	90	110			
Chromium	0.203	0.00500	0.200	0	102	90	110			
Cobalt	0.210	0.00500	0.200	0	105	90	110			
Lithium	0.193	0.0100	0.200	0	96.6	90	110			
Molybdenum	0.196	0.00500	0.200	0	98.0	90	110			
Selenium	0.220	0.00500	0.200	0	110	90	110			
Thallium	0.203	0.00150	0.200	0	102	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_170107D**

Sample ID	LCVL13-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_170107D	Analysis Date:	1/8/2017 12:05:00 AM	Prep Date:	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00253	0.00250	0.00200	0	126	70	130			
Barium	0.00515	0.0100	0.00500	0	103	70	130			
Beryllium	0.00124	0.00100	0.00100	0	124	70	130			
Cadmium	0.00108	0.00100	0.00100	0	108	70	130			
Chromium	0.00509	0.00500	0.00500	0	102	70	130			
Cobalt	0.00540	0.00500	0.00500	0	108	70	130			
Lithium	0.00977	0.0100	0.0100	0	97.7	70	130			
Molybdenum	0.00501	0.00500	0.00500	0	100	70	130			
Selenium	0.00649	0.00500	0.00500	0	130	70	130			
Thallium	0.00106	0.00150	0.00100	0	106	70	130			

LUMINANT

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank	DF Dilution Factor
	J Analyte detected between MDL and RL	MDL Method Detection Limit
	ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
	RL Reporting Limit	S Spike Recovery outside control limits
	J Analyte detected between SDL and RL	N Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_170108C**

Sample ID <b>ICV-170108</b>	Batch ID: <b>R89833</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_170108C</b>	Analysis Date: <b>1/8/2017 11:44:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.101	0.00500	0.100	0	101	90	110			
Lead	0.101	0.00100	0.100	0	101	90	110			

Sample ID <b>LCVL-170108</b>	Batch ID: <b>R89833</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170108C</b>	Analysis Date: <b>1/8/2017 11:49:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00506	0.00500	0.00500	0	101	70	130			
Lead	0.00109	0.00100	0.00100	0	109	70	130			

Sample ID <b>CCV11-170108</b>	Batch ID: <b>R89833</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170108C</b>	Analysis Date: <b>1/8/2017 6:44:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.212	0.00500	0.200	0	106	90	110			
Lead	0.198	0.00100	0.200	0	99.0	90	110			

Sample ID <b>LCVL11-170108</b>	Batch ID: <b>R89833</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170108C</b>	Analysis Date: <b>1/8/2017 6:48:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00533	0.00500	0.00500	0	107	70	130			
Lead	0.00104	0.00100	0.00100	0	104	70	130			

Sample ID <b>CCV12-170108</b>	Batch ID: <b>R89833</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_170108C</b>	Analysis Date: <b>1/8/2017 7:17:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.209	0.00500	0.200	0	105	90	110			
Lead	0.196	0.00100	0.200	0	98.0	90	110			

Sample ID <b>LCVL12-170108</b>	Batch ID: <b>R89833</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_170108C</b>	Analysis Date: <b>1/8/2017 7:21:00 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00527	0.00500	0.00500	0	105	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_161228A**

The QC data in batch 78499 applies to the following samples: 1612205-01D, 1612205-02D, 1612205-03D, 1612205-04D, 1612205-05D, 1612205-06D, 1612205-07D, 1612205-08D

Sample ID <b>MB-78499</b>	Batch ID: <b>78499</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 10:06:27 A</b>	Prep Date: <b>12/28/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID <b>LCS-78499</b>	Batch ID: <b>78499</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 10:21:27 A</b>	Prep Date: <b>12/28/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.86	1.00	10.00	0	98.6	90	110			
Fluoride	3.79	0.400	4.000	0	94.8	90	110			
Sulfate	29.8	3.00	30.00	0	99.2	90	110			

Sample ID <b>LCS-D-78499</b>	Batch ID: <b>78499</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>LCS-D</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 10:36:27 A</b>	Prep Date: <b>12/28/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.87	1.00	10.00	0	98.7	90	110	0.093	20	
Fluoride	3.79	0.400	4.000	0	94.7	90	110	0.113	20	
Sulfate	29.8	3.00	30.00	0	99.4	90	110	0.261	20	

Sample ID <b>1612205-03DMS</b>	Batch ID: <b>78499</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 5:13:48 PM</b>	Prep Date: <b>12/28/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	259	10.0	200.0	71.09	93.7	90	110			
Fluoride	197	4.00	200.0	0	98.5	90	110			
Sulfate	379	30.0	200.0	180.6	99.1	90	110			

Sample ID <b>1612205-03DMSD</b>	Batch ID: <b>78499</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 5:28:48 PM</b>	Prep Date: <b>12/28/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	259	10.0	200.0	71.09	93.8	90	110	0.032	20	
Fluoride	198	4.00	200.0	0	98.8	90	110	0.342	20	
Sulfate	380	30.0	200.0	180.6	99.6	90	110	0.268	20	

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_161228A**

Sample ID: <b>1612205-05DMS</b>	Batch ID: <b>78499</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 6:43:48 PM</b>	Prep Date: <b>12/28/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	249	10.0	200.0	56.80	95.9	90	110			
Fluoride	199	4.00	200.0	0	99.4	90	110			
Sulfate	236	30.0	200.0	39.71	98.3	90	110			

Sample ID: <b>1612205-05DMSD</b>	Batch ID: <b>78499</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>MSD</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 6:58:48 PM</b>	Prep Date: <b>12/28/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	250	10.0	200.0	56.80	96.5	90	110	0.532	20	
Fluoride	200	4.00	200.0	0	100	90	110	0.838	20	
Sulfate	236	30.0	200.0	39.71	98.3	90	110	0.058	20	

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_161228A**

Sample ID <b>ICV-161228</b>	Batch ID: <b>R89697</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 9:25:24 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.5	1.00	25.00	0	97.8	90	110			
Fluoride	9.38	0.400	10.00	0	93.8	90	110			
Sulfate	74.9	3.00	75.00	0	99.9	90	110			

Sample ID <b>CCV1-161228</b>	Batch ID: <b>R89697</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 1:52:21 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	1.00	10.00	0	100	90	110			
Fluoride	3.83	0.400	4.000	0	95.7	90	110			
Sulfate	30.3	3.00	30.00	0	101	90	110			

Sample ID <b>CCV2-161228</b>	Batch ID: <b>R89697</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 5:58:48 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110			
Fluoride	3.98	0.400	4.000	0	99.5	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

Sample ID <b>CCV3-161228</b>	Batch ID: <b>R89697</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_161228A</b>	Analysis Date: <b>12/28/2016 9:43:48 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Fluoride	3.93	0.400	4.000	0	98.3	90	110			
Sulfate	30.2	3.00	30.00	0	101	90	110			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_161221A**

The QC data in batch 78402 applies to the following samples: 1612205-01D, 1612205-02D, 1612205-03D, 1612205-04D, 1612205-05D, 1612205-06D, 1612205-07D, 1612205-08D

Sample ID: <b>1612205-01D-DUP</b>	Batch ID: <b>78402</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@18°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_161221A</b>	Analysis Date: <b>12/21/2016 8:53:00 AM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.68	0	0	6.700				0.299	5	

Sample ID: <b>1612206-01D-DUP</b>	Batch ID: <b>78402</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@18.8°C</b>
SampType: <b>DUP</b>	Run ID: <b>TITRATOR_161221A</b>	Analysis Date: <b>12/21/2016 9:15:00 AM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.29	0	0	6.370				1.26	5	



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|--|---|
| <p><b>Qualifiers:</b></p> <ul style="list-style-type: none"> <li>B Analyte detected in the associated Method Blank</li> <li>J Analyte detected between MDL and RL</li> <li>ND Not Detected at the Method Detection Limit</li> <li>RL Reporting Limit</li> <li>J Analyte detected between SDL and RL</li> </ul> | <ul style="list-style-type: none"> <li>DF Dilution Factor</li> <li>MDL Method Detection Limit</li> <li>R RPD outside accepted control limits</li> <li>S Spike Recovery outside control limits</li> <li>N Parameter not NELAC certified</li> </ul> |
|--|---|

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: TITRATOR\_161221A**

Sample ID <b>ICV-161221</b>	Batch ID: <b>R89586</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@21°C</b>
SampType: <b>ICV</b>	Run ID: <b>TITRATOR_161221A</b>	Analysis Date: <b>12/21/2016 8:19:00 AM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.90	0	10.00	0	99.0	99	101			

Sample ID <b>CCV1-161221</b>	Batch ID: <b>R89586</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@20.3°C</b>
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_161221A</b>	Analysis Date: <b>12/21/2016 9:13:00 AM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.96	0	7.000	0	99.4	97.1	102.9			

Sample ID <b>CCV2-161221</b>	Batch ID: <b>R89586</b>	TestNo: <b>M4500-H+ B</b>	Units: <b>pH Units@20.7°C</b>
SampType: <b>CCV</b>	Run ID: <b>TITRATOR_161221A</b>	Analysis Date: <b>12/21/2016 9:37:00 AM</b>	Prep Date: <b>12/21/2016</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.96	0	7.000	0	99.4	97.1	102.9			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_161221B**

The QC data in batch 78407 applies to the following samples: 1612205-04D, 1612205-05D, 1612205-06D, 1612205-07D, 1612205-08D

Sample ID <b>MB-78407</b>	Batch ID: <b>78407</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>								
SampType: <b>MBLK</b>	Run ID: <b>WC_161221B</b>	Analysis Date: <b>12/22/2016 8:41:00 AM</b>	Prep Date: <b>12/21/2016</b>								
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Dissolved Solids (Residue, Filtera		<10.0	10.0								

Sample ID <b>LCS-78407</b>	Batch ID: <b>78407</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_161221B</b>	Analysis Date: <b>12/22/2016 8:41:00 AM</b>	Prep Date: <b>12/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		748	10.0	745.6	0	100	90	113		

Sample ID <b>1612207-01D-DUP</b>	Batch ID: <b>78407</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_161221B</b>	Analysis Date: <b>12/22/2016 8:41:00 AM</b>	Prep Date: <b>12/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		3710	50.0	0	3660			1.22	5	

Sample ID <b>1612207-05D-DUP</b>	Batch ID: <b>78407</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_161221B</b>	Analysis Date: <b>12/22/2016 8:41:00 AM</b>	Prep Date: <b>12/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		2150	50.0	0	2050			4.76	5	

<b>Qualifiers:</b>	B Analyte detected in the associated Method Blank J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit RL Reporting Limit J Analyte detected between SDL and RL	DF Dilution Factor MDL Method Detection Limit R RPD outside accepted control limits S Spike Recovery outside control limits N Parameter not NELAC certified
--------------------	--	---

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1612205  
**Project:** Big Brown-Bottom Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: WC\_161221C**

The QC data in batch 78406 applies to the following samples: 1612205-01D, 1612205-02D, 1612205-03D

Sample ID <b>MB-78406</b>	Batch ID: <b>78406</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>MBLK</b>	Run ID: <b>WC_161221C</b>	Analysis Date: <b>12/22/2016 8:40:00 AM</b>	Prep Date: <b>12/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		<10.0	10.0							

Sample ID <b>LCS-78406</b>	Batch ID: <b>78406</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>LCS</b>	Run ID: <b>WC_161221C</b>	Analysis Date: <b>12/22/2016 8:40:00 AM</b>	Prep Date: <b>12/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		753	10.0	745.6	0	101	90	113		

Sample ID <b>1612163-27D-DUP</b>	Batch ID: <b>78406</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_161221C</b>	Analysis Date: <b>12/22/2016 8:40:00 AM</b>	Prep Date: <b>12/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		3610	50.0	0	3725			3.27	5	

Sample ID <b>1612205-03D-DUP</b>	Batch ID: <b>78406</b>	TestNo: <b>M2540C</b>	Units: <b>mg/L</b>							
SampType: <b>DUP</b>	Run ID: <b>WC_161221C</b>	Analysis Date: <b>12/22/2016 8:40:00 AM</b>	Prep Date: <b>12/21/2016</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera		486	10.0	0	483.0			0.619	5	

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
---	--



## Case Narrative

### Lab No: 20161255

This report contains the analytical results for the 8 sample(s) received under chain of custody by ESC Lab Sciences on 12/20/2016 11:11:21 AM. These samples are associated with your 1612205 project.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below:

The test results in this report meet all NELAC requirements unless noted below:

This report shall not be reproduced, except in full, without the written approval of ESC Lab Sciences.

All radiochemical sample results for solids are reported on a dry weight basis with the exception of tritium, carbon-14 and radon, unless wet weight was requested by the client.

Results have been reviewed by the Director of Radiochemistry or their designees and is approved for release.

### Observations / Nonconformances

L879998



Client : DHL Analytical, Inc.  
 Client Project : 1612205  
 Lab Number : 20161255  
 Date Reported : 01/27/17  
 Date Received : 12/20/16  
 Page Number : 2 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20161255-01  
**Client ID** : BAP-61  
**Date Sampled** : 12/14/2016 4:40:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		2.84 +/- 0.735	0.889	pCi/l			
Radium-226	SM 7500 Ra B M*	0.267 +/- 0.147	0.152	pCi/l	01/17/17	01/18/17	RE
Radium-228	EPA 904*/9320*	2.57 +/- 0.588	0.737	pCi/l	01/16/17	01/25/17	JR

**Lab ID** : 20161255-02  
**Client ID** : BAP-60  
**Date Sampled** : 12/14/2016 5:35:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.468 +/- 0.729	0.992	pCi/l			
Radium-226	SM 7500 Ra B M*	0.127 +/- 0.122	0.174	pCi/l	01/17/17	01/18/17	AK
Radium-228	EPA 904*/9320*	0.341 +/- 0.607	0.818	pCi/l	01/16/17	01/25/17	JR

**Lab ID** : 20161255-03  
**Client ID** : BAP-59  
**Date Sampled** : 12/15/2016 8:15:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.095 +/- 0.722	1.05	pCi/l			
Radium-226	SM 7500 Ra B M*	0.095 +/- 0.118	0.179	pCi/l	01/17/17	01/18/17	AK
Radium-228	EPA 904*/9320*	-0.307 +/- 0.604	0.867	pCi/l	01/16/17	01/25/17	JR

**Lab ID** : 20161255-04  
**Client ID** : BAP-58  
**Date Sampled** : 12/15/2016 9:10:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.008 +/- 0.827	1.25	pCi/l			
Radium-226	SM 7500 Ra B M*	0.008 +/- 0.087	0.171	pCi/l	01/17/17	01/18/17	AK
Radium-228	EPA 904*/9320*	-0.083 +/- 0.740	1.08	pCi/l	01/16/17	01/25/17	JR



Client : DHL Analytical, Inc.  
 Client Project : 1612205  
 Lab Number : 20161255  
 Date Reported : 01/27/17  
 Date Received : 12/20/16  
 Page Number : 3 of 4

## Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
--------	--------	----	-------	------	-----------	---------------	---------

**Lab ID** : 20161255-05  
**Client ID** : BAP-57  
**Date Sampled** : 12/15/2016 10:00:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.878 +/- 0.708	1.08	pCi/l			
Radium-226	SM 7500 Ra B M*	0.165 +/- 0.166	0.242	pCi/l	01/17/17	01/18/17	AK
Radium-228	EPA 904*/9320*	0.713 +/- 0.542	0.840	pCi/l	01/16/17	01/25/17	JR

**Lab ID** : 20161255-06  
**Client ID** : BAP-63  
**Date Sampled** : 12/15/2016 11:20:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.072 +/- 0.885	1.30	pCi/l			
Radium-226	SM 7500 Ra B M*	0.072 +/- 0.210	0.338	pCi/l	01/17/17	01/18/17	AK
Radium-228	EPA 904*/9320*	-0.282 +/- 0.675	0.959	pCi/l	01/16/17	01/25/17	JR

**Lab ID** : 20161255-07  
**Client ID** : DUP-01  
**Date Sampled** : 12/15/2016 11:20:00 AM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		1.32 +/- 0.692	0.861	pCi/l			
Radium-226	SM 7500 Ra B M*	0.312 +/- 0.147	0.141	pCi/l	01/17/17	01/18/17	AK
Radium-228	EPA 904*/9320*	1.01 +/- 0.545	0.720	pCi/l	01/16/17	01/25/17	JR

**Lab ID** : 20161255-08  
**Client ID** : BAP-62  
**Date Sampled** : 12/15/2016 1:20:00 PM  
**Matrix** : NPW

### Radiochemical Analyses

Combined Radium		0.000 +/- 0.732	0.622	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.023 +/- 0.093	0.191	pCi/l	01/17/17	01/18/17	AK
Radium-228	EPA 904*/9320*	-0.318 +/- 0.639	0.431	pCi/l	01/16/17	01/25/17	JR



Client : DHL Analytical, Inc.  
Client Project : 1612205  
Lab Number : 20161255  
Date Reported : 01/27/17  
Date Received : 12/20/16  
Page Number : 4 of 4

### QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.000	118.0			NC	0.262	113.0	117.0	3.1	R1178
Radium-228	0.142	90.7			NC	0.029	90.0	92.4	2.5	R3908

Lab Approval:

Ron Eidson  
Director of Radiochemistry

LUMINANT

DHL Analytical, Inc.  
 2300 Double Creek Drive  
 Round Rock, TX 78664

# CHAIN-OF-CUSTODY RECORD

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1612205

**Subcontractor:**

ESC Laboratory  
 311 North Aspen  
 Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515  
 FAX:  
 Acct #: DHLRRTX

19-Dec-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
1 BAP-61	Aqueous	-01B	12/14/16 04:40 PM	1LHDPEHNO3	1					
BAP-61	Aqueous	-01C	12/14/16 04:40 PM	500HDPEHNO3		1				
2 BAP-60	Aqueous	-02B	12/14/16 05:35 PM	1LHDPEHNO3	1					
BAP-60	Aqueous	-02C	12/14/16 05:35 PM	500HDPEHNO3		1				
3 BAP-59	Aqueous	-03B	12/15/16 08:15 AM	1LHDPEHNO3	1					
BAP-59	Aqueous	-03C	12/15/16 08:15 AM	500HDPEHNO3		1				
4 BAP-58	Aqueous	-04B	12/15/16 09:10 AM	1LHDPEHNO3	1					
BAP-58	Aqueous	-04C	12/15/16 09:10 AM	500HDPEHNO3		1				
5 BAP-57	Aqueous	-05B	12/15/16 10:00 AM	1LHDPEHNO3	1					
BAP-57	Aqueous	-05C	12/15/16 10:00 AM	500HDPEHNO3		1				
6 BAP-63	Aqueous	-06B	12/15/16 11:20 AM	1LHDPEHNO3	1					
BAP-63	Aqueous	-06C	12/15/16 11:20 AM	500HDPEHNO3		1				
7 DUP-01	Aqueous	-07B	12/15/16 11:20 AM	1LHDPEHNO3	1					
DUP-01	Aqueous	-07C	12/15/16 11:20 AM	500HDPEHNO3		1				
8 BAP-62	Aqueous	-08B	12/15/16 01:20 PM	1LHDPEHNO3	1					
BAP-62	Aqueous	-08C	12/15/16 01:20 PM	500HDPEHNO3		1				

**General Comments:**

Please analyze these samples with Normal Turnaround Time.  
 Report RA-226, Ra-228 & Combined per Specs.  
 Quality Control Package Needed: Standard - NELAC Rad Test compliant  
 Email to cac@dhlanalytical.com & dupont@dhlanalytical.com

C 879998

		Date/Time			Date/Time
Relinquished by:	<i>[Signature]</i>	12/19/16 17:30	Received by:	<i>[Signature]</i>	12/19/16 17:30
Relinquished by:			Received by:	<i>[Signature]</i>	12/20/16 1111

20161255

**SAMPLE LOGIN**

Date Received: 12/20/2016 11:11:

Lab Number: 20161255

Due: 1/19/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20161255-01 B	BAP-61	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161255-01 A	BAP-61	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20161255-02 A	BAP-60	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161255-02 B	BAP-60	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20161255-03 A	BAP-59	NPW	12/15/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161255-03 B	BAP-59	NPW	12/15/16	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20161255-04 B	BAP-58	NPW	12/15/16	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161255-04 A	BAP-58	NPW	12/15/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20161255-05 B	BAP-57	NPW	12/15/16	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161255-05 A	BAP-57	NPW	12/15/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20161255-06 A	BAP-63	NPW	12/15/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161255-06 B	BAP-63	NPW	12/15/16	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						
20161255-07 A	DUP-01	NPW	12/15/16	Plastic	500 ml	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
20161255-07 B	DUP-01	NPW	12/15/16	Plastic	1 L	HNO3, pH < 2	<input checked="" type="checkbox"/>	Yes	Yes
			SM 7500 Ra B M*						
			EPA 904*/9320*						



Radium-226

SM 7500 Ra B M\*

Radium-228

EPA 904\*/9320\*

CONTAINER INSPECTION

#Coolers 3 Custody Seals Broken  Temperature: Sub C Ice Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken  Chain of Custody Record  Labels in Tact  Radiation Survey Complete

Anomalles

Inspected By: [Signature] DATE 12/20/16

QA or Designee Review: [Signature] DATE 12/20/16

Sample Custodian Review: [Signature] DATE 12/20/16

Project Notes:

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**Appendix B**

**Laboratory Analytical Reports – Detection Monitoring Data**





October 10, 2017

Will Vienne  
Pastor, Behling & Wheeler  
2201 Double Creek Dr #4004  
Round Rock, Texas 78664  
TEL: (512) 671-3434  
FAX (512) 671-3446  
RE: Luminant - BBSES - Ash Ponds

Order No.: 1709308

Dear Will Vienne:

DHL Analytical, Inc. received 7 sample(s) on 9/29/2017 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont  
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-17-19



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**John DuPont**

---

**From:** Will Vienne <will.vienne@pbwllc.com>  
**Sent:**  
**To:** John DuPont  
**Cc:** John Brayton; Keith Starek; Pat Behling  
**Subject:** CCR Sampling  
  
**Follow Up Flag:** Follow up  
**Flag Status:** Completed

Hi John,

We are starting the second phase of sampling for the CCR project, which includes sampling the CCR wells on a semi-annual basis. Only Appendix III constituents will be analyzed:

Boron  
Calcium  
Chloride  
Fluoride  
Field pH  
Sulfate  
Total Dissolved  
Solids

LUMINANT

lay

ORIGIN ID:FWHA (512) 671-3434  
JOHN BRAYTON

2201 DOUBLE CREEK DR  
SUITE 4004  
ROUND ROCK, TX 78664  
UNITED STATES US

SHIP DATE: 28SEP17  
ACTWGT: 59.30 LB  
CAD: 6995323/SSFO1802  
DIMS: 26x14x14 IN

BILL THIRD PARTY

Part # 1532320002/6181/17/18 08/18

TO

DHL  
2300 DOUBLE CREEK DR

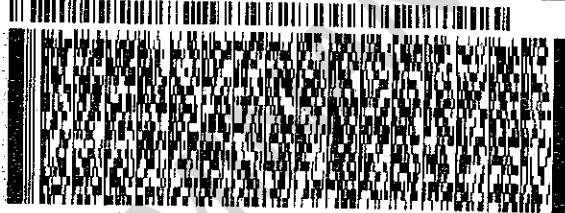
ROUND ROCK TX 78664

(512) 388-8222

REF:

INU:

DEPT:



FedEx  
Express



TRK# 7878 9633 3308  
0201

FRI - 29 SEP 10:30A  
PRIORITY OVERNIGHT

A8 BSMA

AHS  
78664

TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 9/29/2017

Work Order Number 1709308

Received by CVD

Checklist completed by: [Signature] 9/29/2017
Signature Date

Reviewed by [Signature] 9/29/2017
Initials Date

Carrier name FedEx 1day

- Shipping container/cooler in good condition? Yes [checked] No [ ] Not Present [ ]
Custody seals intact on shipping container/cooler? Yes [ ] No [ ] Not Present [checked]
Custody seals intact on sample bottles? Yes [ ] No [ ] Not Present [checked]
Chain of custody present? Yes [checked] No [ ]
Chain of custody signed when relinquished and received? Yes [checked] No [ ]
Chain of custody agrees with sample labels? Yes [checked] No [ ]
Samples in proper container/bottle? Yes [checked] No [ ]
Sample containers intact? Yes [checked] No [ ]
Sufficient sample volume for indicated test? Yes [checked] No [ ]
All samples received within holding time? Yes [checked] No [ ]
Container/Temp Blank temperature in compliance? Yes [checked] No [ ] 1.1 °C
Water - VOA vials have zero headspace? Yes [ ] No [ ] No VOA vials submitted [checked]
Water - pH<2 acceptable upon receipt? Yes [checked] No [ ] NA [ ] LOT # 8086
Adjusted? No Checked by EC
Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt? Yes [ ] No [ ] NA [checked] LOT #
Adjusted? Checked by

Any No response must be detailed in the comments section below.

Client contacted Date contacted: Person contacted

Contacted by: Regarding:

Comments:

Corrective Action

---

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Lab Order:** 1709308

**CASE NARRATIVE**

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Samples were analyzed using the methods outlined in the following references:

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition, EPA and Standard Methods.

All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

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**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Lab Order:** 1709308

**Work Order Sample Summary**

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<b>Lab Smp ID</b>	<b>Client Sample ID</b>	<b>Tag Number</b>	<b>Date Collected</b>	<b>Date Recved</b>
1709308-01	BAP-63		09/27/17 11:15 AM	9/29/2017
1709308-02	BAP-62		09/27/17 12:20 PM	9/29/2017
1709308-03	BAP-61		09/27/17 01:25 PM	9/29/2017
1709308-04	BAP-60		09/27/17 02:15 PM	9/29/2017
1709308-05	BAP-59		09/27/17 03:00 PM	9/29/2017
1709308-06	BAP-58		09/27/17 03:55 PM	9/29/2017
1709308-07	BAP-57		09/27/17 04:40 PM	9/29/2017

LUMINANT



**Lab Order:** 1709308  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1709308-01A	BAP-63	09/27/17 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/04/17 08:22 AM	82647
1709308-01B	BAP-63	09/27/17 11:15 AM	Aqueous	E300	Anion Preparation	10/04/17 10:17 AM	82655
	BAP-63	09/27/17 11:15 AM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669
	BAP-63	09/27/17 11:15 AM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669
	BAP-63	09/27/17 11:15 AM	Aqueous	M2540C	TDS Preparation	10/02/17 09:37 AM	82622
1709308-02A	BAP-62	09/27/17 12:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/04/17 08:22 AM	82647
1709308-02B	BAP-62	09/27/17 12:20 PM	Aqueous	E300	Anion Preparation	10/04/17 10:17 AM	82655
	BAP-62	09/27/17 12:20 PM	Aqueous	M2540C	TDS Preparation	10/02/17 09:37 AM	82622
1709308-03A	BAP-61	09/27/17 01:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/04/17 08:22 AM	82647
1709308-03B	BAP-61	09/27/17 01:25 PM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669
	BAP-61	09/27/17 01:25 PM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669
	BAP-61	09/27/17 01:25 PM	Aqueous	E300	Anion Preparation	10/06/17 10:37 AM	82690
	BAP-61	09/27/17 01:25 PM	Aqueous	M2540C	TDS Preparation	10/02/17 09:37 AM	82622
1709308-04A	BAP-60	09/27/17 02:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/04/17 08:22 AM	82647
1709308-04B	BAP-60	09/27/17 02:15 PM	Aqueous	E300	Anion Preparation	10/04/17 10:17 AM	82655
	BAP-60	09/27/17 02:15 PM	Aqueous	M2540C	TDS Preparation	10/02/17 09:37 AM	82622
1709308-05A	BAP-59	09/27/17 03:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/04/17 08:22 AM	82647
1709308-05B	BAP-59	09/27/17 03:00 PM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669
	BAP-59	09/27/17 03:00 PM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669
	BAP-59	09/27/17 03:00 PM	Aqueous	E300	Anion Preparation	10/06/17 10:37 AM	82690
	BAP-59	09/27/17 03:00 PM	Aqueous	M2540C	TDS Preparation	10/02/17 09:37 AM	82622
1709308-06A	BAP-58	09/27/17 03:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/04/17 08:22 AM	82647
1709308-06B	BAP-58	09/27/17 03:55 PM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669
	BAP-58	09/27/17 03:55 PM	Aqueous	E300	Anion Preparation	10/06/17 10:37 AM	82690
	BAP-58	09/27/17 03:55 PM	Aqueous	M2540C	TDS Preparation	10/02/17 09:37 AM	82622
1709308-07A	BAP-57	09/27/17 04:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/04/17 08:22 AM	82647
1709308-07B	BAP-57	09/27/17 04:40 PM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669
	BAP-57	09/27/17 04:40 PM	Aqueous	E300	Anion Preparation	10/05/17 09:38 AM	82669

**Lab Order:** 1709308  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds

**PREP DATES REPORT**

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1709308-07B	BAP-57	09/27/17 04:40 PM	Aqueous	E300	Anion Preparation	10/06/17 10:37 AM	82690
	BAP-57	09/27/17 04:40 PM	Aqueous	M2540C	TDS Preparation	10/02/17 09:37 AM	82622

LUMINANT

**Lab Order:** 1709308  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1709308-01A	BAP-63	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82647	10	10/06/17 11:21 AM	ICP-MS4_171006A
1709308-01B	BAP-63	Aqueous	E300	Anions by IC method - Water	82655	1	10/04/17 05:23 PM	IC2_171004A
	BAP-63	Aqueous	E300	Anions by IC method - Water	82669	10	10/05/17 02:41 PM	IC2_171005A
	BAP-63	Aqueous	E300	Anions by IC method - Water	82669	1	10/05/17 06:39 PM	IC2_171005A
	BAP-63	Aqueous	M2540C	Total Dissolved Solids	82622	1	10/03/17 10:45 AM	WC_171002A
1709308-02A	BAP-62	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82647	10	10/06/17 11:25 AM	ICP-MS4_171006A
1709308-02B	BAP-62	Aqueous	E300	Anions by IC method - Water	82655	1	10/04/17 05:37 PM	IC2_171004A
	BAP-62	Aqueous	M2540C	Total Dissolved Solids	82622	1	10/03/17 10:45 AM	WC_171002A
1709308-03A	BAP-61	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82647	10	10/06/17 11:27 AM	ICP-MS4_171006A
1709308-03B	BAP-61	Aqueous	E300	Anions by IC method - Water	82669	10	10/05/17 03:23 PM	IC2_171005A
	BAP-61	Aqueous	E300	Anions by IC method - Water	82669	1	10/05/17 06:53 PM	IC2_171005A
	BAP-61	Aqueous	E300	Anions by IC method - Water	82690	1	10/06/17 01:03 PM	IC4_171006A
	BAP-61	Aqueous	M2540C	Total Dissolved Solids	82622	1	10/03/17 10:45 AM	WC_171002A
1709308-04A	BAP-60	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82647	1	10/06/17 11:29 AM	ICP-MS4_171006A
1709308-04B	BAP-60	Aqueous	E300	Anions by IC method - Water	82655	1	10/04/17 05:51 PM	IC2_171004A
	BAP-60	Aqueous	M2540C	Total Dissolved Solids	82622	1	10/03/17 10:45 AM	WC_171002A
1709308-05A	BAP-59	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82647	10	10/06/17 11:31 AM	ICP-MS4_171006A
1709308-05B	BAP-59	Aqueous	E300	Anions by IC method - Water	82669	10	10/05/17 03:37 PM	IC2_171005A
	BAP-59	Aqueous	E300	Anions by IC method - Water	82669	1	10/05/17 07:07 PM	IC2_171005A
	BAP-59	Aqueous	E300	Anions by IC method - Water	82690	1	10/06/17 01:15 PM	IC4_171006A
	BAP-59	Aqueous	M2540C	Total Dissolved Solids	82622	1	10/03/17 10:45 AM	WC_171002A
1709308-06A	BAP-58	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82647	5	10/06/17 11:32 AM	ICP-MS4_171006A
1709308-06B	BAP-58	Aqueous	E300	Anions by IC method - Water	82669	1	10/05/17 03:51 PM	IC2_171005A
	BAP-58	Aqueous	E300	Anions by IC method - Water	82690	1	10/06/17 01:27 PM	IC4_171006A
	BAP-58	Aqueous	M2540C	Total Dissolved Solids	82622	1	10/03/17 10:45 AM	WC_171002A
1709308-07A	BAP-57	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82647	5	10/06/17 11:34 AM	ICP-MS4_171006A
1709308-07B	BAP-57	Aqueous	E300	Anions by IC method - Water	82669	10	10/05/17 04:05 PM	IC2_171005A
	BAP-57	Aqueous	E300	Anions by IC method - Water	82669	1	10/05/17 07:21 PM	IC2_171005A

**Lab Order:** 1709308  
**Client:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds

**ANALYTICAL DATES REPORT**

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1709308-07B	BAP-57	Aqueous	E300	Anions by IC method - Water	82690	1	10/06/17 01:39 PM	IC4_171006A
	BAP-57	Aqueous	M2540C	Total Dissolved Solids	82622	1	10/03/17 10:45 AM	WC_171002A

LUMINANT

**DHL Analytical, Inc.**

Date: 10-Oct-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Project No:** 5347-A  
**Lab Order:** 1709308

**Client Sample ID:** BAP-63  
**Lab ID:** 1709308-01  
**Collection Date:** 09/27/17 11:15 AM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>SP</b>			
Boron	1.91	0.100	0.300		mg/L	10	10/06/17 11:21 AM
Calcium	150	1.00	3.00		mg/L	10	10/06/17 11:21 AM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>JL</b>			
Chloride	55.1	3.00	10.0		mg/L	10	10/05/17 02:41 PM
Fluoride	0.260	0.100	0.400	J	mg/L	1	10/04/17 05:23 PM
Sulfate	132	1.00	3.00		mg/L	1	10/04/17 05:23 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JW</b>			
Total Dissolved Solids (Residue, Filterable)	591	10.0	10.0		mg/L	1	10/03/17 10:45 AM

LUMINANT

<b>Qualifiers:</b>	* Value exceeds TCLP Maximum Concentration Level	B Analyte detected in the associated Method Blank
	C Sample Result or QC discussed in the Case Narrative	DF Dilution Factor
	E TPH pattern not Gas or Diesel Range Pattern	J Analyte detected between MDL and RL
MDL	Method Detection Limit	ND Not Detected at the Method Detection Limit
RL	Reporting Limit	S Spike Recovery outside control limits
N	Parameter not NELAC certified	

**DHL Analytical, Inc.**

Date: 10-Oct-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Project No:** 5347-A  
**Lab Order:** 1709308

**Client Sample ID:** BAP-62  
**Lab ID:** 1709308-02  
**Collection Date:** 09/27/17 12:20 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>SP</b>			
Boron	0.820	0.100	0.300		mg/L	10	10/06/17 11:25 AM
Calcium	63.6	1.00	3.00		mg/L	10	10/06/17 11:25 AM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>JL</b>			
Chloride	20.4	0.300	1.00		mg/L	1	10/04/17 05:37 PM
Fluoride	0.163	0.100	0.400	J	mg/L	1	10/04/17 05:37 PM
Sulfate	109	1.00	3.00		mg/L	1	10/04/17 05:37 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JW</b>			
Total Dissolved Solids (Residue, Filterable)	363	10.0	10.0		mg/L	1	10/03/17 10:45 AM

LUMINANT

<b>Qualifiers:</b>	* Value exceeds TCLP Maximum Concentration Level	B Analyte detected in the associated Method Blank
	C Sample Result or QC discussed in the Case Narrative	DF Dilution Factor
	E TPH pattern not Gas or Diesel Range Pattern	J Analyte detected between MDL and RL
MDL	Method Detection Limit	ND Not Detected at the Method Detection Limit
RL	Reporting Limit	S Spike Recovery outside control limits
N	Parameter not NELAC certified	

**DHL Analytical, Inc.**

Date: 10-Oct-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Project No:** 5347-A  
**Lab Order:** 1709308

**Client Sample ID:** BAP-61  
**Lab ID:** 1709308-03  
**Collection Date:** 09/27/17 01:25 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>SP</b>			
Boron	1.22	0.100	0.300		mg/L	10	10/06/17 11:27 AM
Calcium	91.5	1.00	3.00		mg/L	10	10/06/17 11:27 AM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>JL</b>			
Chloride	214	3.00	10.0		mg/L	10	10/05/17 03:23 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/06/17 01:03 PM
Sulfate	116	1.00	3.00		mg/L	1	10/05/17 06:53 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JW</b>			
Total Dissolved Solids (Residue, Filterable)	688	10.0	10.0		mg/L	1	10/03/17 10:45 AM

LUMINANT

- |                    |   |  |
|--------------------|---|--|
| <b>Qualifiers:</b> | <ul style="list-style-type: none"> <li>* Value exceeds TCLP Maximum Concentration Level</li> <li>C Sample Result or QC discussed in the Case Narrative</li> <li>E TPH pattern not Gas or Diesel Range Pattern</li> <li>MDL Method Detection Limit</li> <li>RL Reporting Limit</li> <li>N Parameter not NELAC certified</li> </ul> | <ul style="list-style-type: none"> <li>B Analyte detected in the associated Method Blank</li> <li>DF Dilution Factor</li> <li>J Analyte detected between MDL and RL</li> <li>ND Not Detected at the Method Detection Limit</li> <li>S Spike Recovery outside control limits</li> </ul> |
|--------------------|---|--|

**DHL Analytical, Inc.**

Date: 10-Oct-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Project No:** 5347-A  
**Lab Order:** 1709308

**Client Sample ID:** BAP-60  
**Lab ID:** 1709308-04  
**Collection Date:** 09/27/17 02:15 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>SP</b>			
Boron	0.531	0.0100	0.0300		mg/L	1	10/06/17 11:29 AM
Calcium	12.9	0.100	0.300		mg/L	1	10/06/17 11:29 AM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>JL</b>			
Chloride	13.5	0.300	1.00		mg/L	1	10/04/17 05:51 PM
Fluoride	0.197	0.100	0.400	J	mg/L	1	10/04/17 05:51 PM
Sulfate	91.3	1.00	3.00		mg/L	1	10/04/17 05:51 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JW</b>			
Total Dissolved Solids (Residue, Filterable)	328	10.0	10.0		mg/L	1	10/03/17 10:45 AM

LUMINANT

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		



**DHL Analytical, Inc.**

Date: 10-Oct-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Project No:** 5347-A  
**Lab Order:** 1709308

**Client Sample ID:** BAP-59  
**Lab ID:** 1709308-05  
**Collection Date:** 09/27/17 03:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>SP</b>			
Boron	2.85	0.100	0.300		mg/L	10	10/06/17 11:31 AM
Calcium	26.4	1.00	3.00		mg/L	10	10/06/17 11:31 AM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>JL</b>			
Chloride	55.4	3.00	10.0		mg/L	10	10/05/17 03:37 PM
Fluoride	0.205	0.100	0.400	J	mg/L	1	10/06/17 01:15 PM
Sulfate	157	10.0	30.0		mg/L	10	10/05/17 03:37 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JW</b>			
Total Dissolved Solids (Residue, Filterable)	500	10.0	10.0		mg/L	1	10/03/17 10:45 AM

LUMINANT

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

**DHL Analytical, Inc.**

Date: 10-Oct-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Project No:** 5347-A  
**Lab Order:** 1709308

**Client Sample ID:** BAP-58  
**Lab ID:** 1709308-06  
**Collection Date:** 09/27/17 03:55 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>SP</b>			
Boron	1.06	0.0500	0.150		mg/L	5	10/06/17 11:32 AM
Calcium	18.4	0.500	1.50		mg/L	5	10/06/17 11:32 AM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>JL</b>			
Chloride	35.1	0.300	1.00		mg/L	1	10/05/17 03:51 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/06/17 01:27 PM
Sulfate	70.4	1.00	3.00		mg/L	1	10/05/17 03:51 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JW</b>			
Total Dissolved Solids (Residue, Filterable)	328	10.0	10.0		mg/L	1	10/03/17 10:45 AM

LUMINANT

- Qualifiers:**
- \* Value exceeds TCLP Maximum Concentration Level
  - C Sample Result or QC discussed in the Case Narrative
  - E TPH pattern not Gas or Diesel Range Pattern
  - MDL Method Detection Limit
  - RL Reporting Limit
  - N Parameter not NELAC certified
  - B Analyte detected in the associated Method Blank
  - DF Dilution Factor
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - S Spike Recovery outside control limits

**DHL Analytical, Inc.**

Date: 10-Oct-17

**CLIENT:** Pastor, Behling & Wheeler  
**Project:** Luminant - BBSES - Ash Ponds  
**Project No:** 5347-A  
**Lab Order:** 1709308

**Client Sample ID:** BAP-57  
**Lab ID:** 1709308-07  
**Collection Date:** 09/27/17 04:40 PM  
**Matrix:** AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
<b>TRACE METALS: ICP-MS - WATER</b>		<b>SW6020A</b>		Analyst: <b>SP</b>			
Boron	0.376	0.0500	0.150		mg/L	5	10/06/17 11:34 AM
Calcium	16.1	0.500	1.50		mg/L	5	10/06/17 11:34 AM
<b>ANIONS BY IC METHOD - WATER</b>		<b>E300</b>		Analyst: <b>JL</b>			
Chloride	85.4	3.00	10.0		mg/L	10	10/05/17 04:05 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/06/17 01:39 PM
Sulfate	55.8	1.00	3.00		mg/L	1	10/05/17 07:21 PM
<b>TOTAL DISSOLVED SOLIDS</b>		<b>M2540C</b>		Analyst: <b>JW</b>			
Total Dissolved Solids (Residue, Filterable)	352	10.0	10.0		mg/L	1	10/03/17 10:45 AM

LUMINANT

**Qualifiers:**

*	Value exceeds TCLP Maximum Concentration Level	B	Analyte detected in the associated Method Blank
C	Sample Result or QC discussed in the Case Narrative	DF	Dilution Factor
E	TPH pattern not Gas or Diesel Range Pattern	J	Analyte detected between MDL and RL
MDL	Method Detection Limit	ND	Not Detected at the Method Detection Limit
RL	Reporting Limit	S	Spike Recovery outside control limits
N	Parameter not NELAC certified		

CLIENT: Pastor, Behling & Wheeler

**ANALYTICAL QC SUMMARY REPORT**

Work Order: 1709308

Project: Luminant - BBSES - Ash Ponds

RunID: ICP-MS4\_171006A

The QC data in batch 82647 applies to the following samples: 1709308-01A, 1709308-02A, 1709308-03A, 1709308-04A, 1709308-05A, 1709308-06A, 1709308-07A

Sample ID <b>MB-82647</b>	Batch ID: <b>82647</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MBLK</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 10:46:00 AM</b>	Prep Date: <b>10/4/2017</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	<0.0100	0.0300								
Calcium	<0.100	0.300								

Sample ID <b>LCS-82647</b>	Batch ID: <b>82647</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCS</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 10:48:00 AM</b>	Prep Date: <b>10/4/2017</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.209	0.0300	0.200	0	105	80	120			
Calcium	5.07	0.300	5.00	0	101	80	120			

Sample ID <b>LCSD-82647</b>	Batch ID: <b>82647</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>LCSD</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 10:50:00 AM</b>	Prep Date: <b>10/4/2017</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.210	0.0300	0.200	0	105	80	120	0.544	15	
Calcium	5.07	0.300	5.00	0	101	80	120	0.117	15	

Sample ID <b>1709308-01A SD</b>	Batch ID: <b>82647</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>SD</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 11:23:00 AM</b>	Prep Date: <b>10/4/2017</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	2.10	1.50	0	1.91				9.13	10	
Calcium	153	15.0	0	150				1.87	10	

Sample ID <b>1709308-01A PDS</b>	Batch ID: <b>82647</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>PDS</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 11:36:00 AM</b>	Prep Date: <b>10/4/2017</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	4.09	0.300	2.00	1.91	109	80	120			
Calcium	205	3.00	50.0	150	111	80	120			

Sample ID <b>1709308-01A MS</b>	Batch ID: <b>82647</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>
SampType: <b>MS</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 11:38:00 AM</b>	Prep Date: <b>10/4/2017</b>

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	2.09	0.300	0.200	1.91	90.1	80	120			
Calcium	154	3.00	5.00	150	72.8	80	120			S

- Qualifiers:**
- B Analyte detected in the associated Method Blank
  - J Analyte detected between MDL and RL
  - ND Not Detected at the Method Detection Limit
  - RL Reporting Limit
  - J Analyte detected between SDL and RL
  - DF Dilution Factor
  - MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1709308  
**Project:** Luminant - BBSES - Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_171006A**

Sample ID <b>1709308-01A MSD</b>	Batch ID: <b>82647</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 11:40:00 AM</b>	Prep Date: <b>10/4/2017</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	2.13	0.300	0.200	1.91	111	80	120	1.99	15	
Calcium	155	3.00	5.00	150	94.4	80	120	0.697	15	

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1709308  
**Project:** Luminant - BSES - Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: ICP-MS4\_171006A**

Sample ID <b>ICV-171006</b>	Batch ID: <b>R94555</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 10:34:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.103	0.0300	0.100	0	103	90	110			
Calcium	2.51	0.300	2.50	0	100	90	110			

Sample ID <b>LCVL-171006</b>	Batch ID: <b>R94555</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 10:38:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0203	0.0300	0.0200	0	102	70	130			
Calcium	0.0915	0.300	0.100	0	91.5	70	130			

Sample ID <b>CCV1-171006</b>	Batch ID: <b>R94555</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 11:13:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.209	0.0300	0.200	0	105	90	110			
Calcium	4.99	0.300	5.00	0	99.9	90	110			

Sample ID <b>LCVL1-171006</b>	Batch ID: <b>R94555</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 11:17:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0218	0.0300	0.0200	0	109	70	130			
Calcium	0.104	0.300	0.100	0	104	70	130			

Sample ID <b>CCV2-171006</b>	Batch ID: <b>R94555</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 11:46:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.209	0.0300	0.200	0	104	90	110			
Calcium	4.97	0.300	5.00	0	99.4	90	110			

Sample ID <b>LCVL2-171006</b>	Batch ID: <b>R94555</b>	TestNo: <b>SW6020A</b>	Units: <b>mg/L</b>							
SampType: <b>LCVL</b>	Run ID: <b>ICP-MS4_171006A</b>	Analysis Date: <b>10/6/2017 11:50:00 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0259	0.0300	0.0200	0	130	70	130			
Calcium	0.0912	0.300	0.100	0	91.2	70	130			

**Qualifiers:**

B Analyte detected in the associated Method Blank	DF Dilution Factor
J Analyte detected between MDL and RL	MDL Method Detection Limit
ND Not Detected at the Method Detection Limit	R RPD outside accepted control limits
RL Reporting Limit	S Spike Recovery outside control limits
J Analyte detected between SDL and RL	N Parameter not NELAC certified

CLIENT: Pastor, Behling & Wheeler

Work Order: 1709308

Project: Luminant - BBSES - Ash Ponds

# ANALYTICAL QC SUMMARY REPORT

RunID: IC2\_171004A

The QC data in batch 82655 applies to the following samples: 1709308-01B, 1709308-02B, 1709308-04B

Sample ID	<b>MB-82655</b>	Batch ID:	<b>82655</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MBLK</b>	Run ID:	<b>IC2_171004A</b>	Analysis Date:	<b>10/4/2017 11:53:11 AM</b>	Prep Date:	<b>10/4/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Fluoride	<0.100	0.400								
Sulfate	<1.00	3.00								

Sample ID	<b>LCS-82655</b>	Batch ID:	<b>82655</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCS</b>	Run ID:	<b>IC2_171004A</b>	Analysis Date:	<b>10/4/2017 12:07:12 PM</b>	Prep Date:	<b>10/4/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.70	1.00	10.00	0	97.0	90	110			
Fluoride	4.30	0.400	4.000	0	108	90	110			
Sulfate	29.1	3.00	30.00	0	96.9	90	110			

Sample ID	<b>LCSD-82655</b>	Batch ID:	<b>82655</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCSD</b>	Run ID:	<b>IC2_171004A</b>	Analysis Date:	<b>10/4/2017 12:21:12 PM</b>	Prep Date:	<b>10/4/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.63	1.00	10.00	0	96.3	90	110	0.683	20	
Fluoride	4.19	0.400	4.000	0	105	90	110	2.69	20	
Sulfate	29.0	3.00	30.00	0	96.5	90	110	0.328	20	

Sample ID	<b>1709307-02BMS</b>	Batch ID:	<b>82655</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MS</b>	Run ID:	<b>IC2_171004A</b>	Analysis Date:	<b>10/4/2017 4:04:22 PM</b>	Prep Date:	<b>10/4/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	3030	100	2000	910.6	106	90	110			
Fluoride	2020	40.0	2000	0	101	90	110			
Sulfate	2080	300	2000	0	104	90	110			

Sample ID	<b>1709307-02BMSD</b>	Batch ID:	<b>82655</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MSD</b>	Run ID:	<b>IC2_171004A</b>	Analysis Date:	<b>10/4/2017 4:27:50 PM</b>	Prep Date:	<b>10/4/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	3070	100	2000	910.6	108	90	110	1.37	20	
Fluoride	2040	40.0	2000	0	102	90	110	1.19	20	
Sulfate	2100	300	2000	0	105	90	110	0.950	20	

Sample ID	<b>1710008-01BMS</b>	Batch ID:	<b>82655</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MS</b>	Run ID:	<b>IC2_171004A</b>	Analysis Date:	<b>10/4/2017 4:55:49 PM</b>	Prep Date:	<b>10/4/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1709308  
**Project:** Luminant - BBSES - Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_171004A**

Sample ID: <b>1710008-01BMS</b>	Batch ID: <b>82655</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MS</b>	Run ID: <b>IC2_171004A</b>	Analysis Date: <b>10/4/2017 4:55:49 PM</b>	Prep Date: <b>10/4/2017</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2490	100	2000	337.5	108	90	110			
Fluoride	2040	40.0	2000	20.74	101	90	110			
Sulfate	4030	300	2000	1917	105	90	110			

Sample ID: <b>1710008-01BMSD</b>	Batch ID: <b>82655</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>MSD</b>	Run ID: <b>IC2_171004A</b>	Analysis Date: <b>10/4/2017 5:09:50 PM</b>	Prep Date: <b>10/4/2017</b>							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2500	100	2000	337.5	108	90	110	0.388	20	
Fluoride	2050	40.0	2000	20.74	102	90	110	0.430	20	
Sulfate	4060	300	2000	1917	107	90	110	0.921	20	

LUMINANT

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified



**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1709308  
**Project:** Luminant - BBSES - Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_171004A**

Sample ID <b>ICV-171004</b>	Batch ID: <b>R94535</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>IC2_171004A</b>	Analysis Date: <b>10/4/2017 11:25:12 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.7	1.00	25.00	0	98.9	90	110			
Fluoride	10.2	0.400	10.00	0	102	90	110			
Sulfate	74.1	3.00	75.00	0	98.8	90	110			

Sample ID <b>CCV1-171004</b>	Batch ID: <b>R94535</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_171004A</b>	Analysis Date: <b>10/4/2017 7:01:49 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.86	1.00	10.00	0	98.6	90	110			
Fluoride	4.34	0.400	4.000	0	109	90	110			
Sulfate	29.3	3.00	30.00	0	97.7	90	110			

LUMINANT

<p><b>Qualifiers:</b></p> <p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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CLIENT: Pastor, Behling & Wheeler

Work Order: 1709308

Project: Luminant - BBSES - Ash Ponds

# ANALYTICAL QC SUMMARY REPORT

RunID: IC2\_171005A

The QC data in batch 82669 applies to the following samples: 1709308-01B, 1709308-03B, 1709308-05B, 1709308-06B, 1709308-07B

Sample ID	<b>MB-82669</b>	Batch ID:	<b>82669</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MBLK</b>	Run ID:	<b>IC2_171005A</b>	Analysis Date:	<b>10/5/2017 12:21:19 PM</b>	Prep Date:	<b>10/5/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								
Sulfate	<1.00	3.00								

Sample ID	<b>LCS-82669</b>	Batch ID:	<b>82669</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCS</b>	Run ID:	<b>IC2_171005A</b>	Analysis Date:	<b>10/5/2017 12:35:19 PM</b>	Prep Date:	<b>10/5/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

Sample ID	<b>LCSD-82669</b>	Batch ID:	<b>82669</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCSD</b>	Run ID:	<b>IC2_171005A</b>	Analysis Date:	<b>10/5/2017 12:49:19 PM</b>	Prep Date:	<b>10/5/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.1	1.00	10.00	0	101	90	110	0.615	20	
Sulfate	30.3	3.00	30.00	0	101	90	110	0.705	20	

Sample ID	<b>1709308-01BMS</b>	Batch ID:	<b>82669</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MS</b>	Run ID:	<b>IC2_171005A</b>	Analysis Date:	<b>10/5/2017 2:55:32 PM</b>	Prep Date:	<b>10/5/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	272	10.0	200.0	55.07	109	90	110			
Sulfate	342	30.0	200.0	129.2	107	90	110			

Sample ID	<b>1709308-01BMSD</b>	Batch ID:	<b>82669</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MSD</b>	Run ID:	<b>IC2_171005A</b>	Analysis Date:	<b>10/5/2017 3:09:32 PM</b>	Prep Date:	<b>10/5/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	271	10.0	200.0	55.07	108	90	110	0.709	20	
Sulfate	342	30.0	200.0	129.2	107	90	110	0.027	20	

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1709308  
**Project:** Luminant - BBESES - Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC2\_171005A**

Sample ID <b>ICV-171005</b>	Batch ID: <b>R94545</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>ICV</b>	Run ID: <b>IC2_171005A</b>	Analysis Date: <b>10/5/2017 11:53:19 AM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.0	1.00	25.00	0	100	90	110			
Sulfate	74.7	3.00	75.00	0	99.6	90	110			

Sample ID <b>CCV1-171005</b>	Batch ID: <b>R94545</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_171005A</b>	Analysis Date: <b>10/5/2017 5:57:31 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110			
Sulfate	30.5	3.00	30.00	0	102	90	110			

Sample ID <b>CCV2-171005</b>	Batch ID: <b>R94545</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>							
SampType: <b>CCV</b>	Run ID: <b>IC2_171005A</b>	Analysis Date: <b>10/5/2017 8:17:31 PM</b>	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Sulfate	30.5	3.00	30.00	0	102	90	110			

LUMINANT

**Qualifiers:**

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAC certified

CLIENT: Pastor, Behling & Wheeler

Work Order: 1709308

Project: Luminant - BBSES - Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

RunID: IC4\_171006A

The QC data in batch 82690 applies to the following samples: 1709308-03B, 1709308-05B, 1709308-06B, 1709308-07B

Sample ID	<b>MB-82690</b>	Batch ID:	<b>82690</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MBLK</b>	Run ID:	<b>IC4_171006A</b>	Analysis Date:	<b>10/6/2017 11:30:46 AM</b>	Prep Date:	<b>10/6/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	<0.100	0.400								

Sample ID	<b>LCS-82690</b>	Batch ID:	<b>82690</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCS</b>	Run ID:	<b>IC4_171006A</b>	Analysis Date:	<b>10/6/2017 11:42:46 AM</b>	Prep Date:	<b>10/6/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	3.95	0.400	4.000	0	98.9	90	110			

Sample ID	<b>LCSD-82690</b>	Batch ID:	<b>82690</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>LCSD</b>	Run ID:	<b>IC4_171006A</b>	Analysis Date:	<b>10/6/2017 11:54:46 AM</b>	Prep Date:	<b>10/6/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	4.01	0.400	4.000	0	100	90	110	1.29	20	

Sample ID	<b>1710037-05BMS</b>	Batch ID:	<b>82690</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MS</b>	Run ID:	<b>IC4_171006A</b>	Analysis Date:	<b>10/6/2017 12:27:42 PM</b>	Prep Date:	<b>10/6/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	20.3	0.400	20.00	0.1780	101	90	110			

Sample ID	<b>1710037-05BMSD</b>	Batch ID:	<b>82690</b>	TestNo:	<b>E300</b>	Units:	<b>mg/L</b>			
SampType:	<b>MSD</b>	Run ID:	<b>IC4_171006A</b>	Analysis Date:	<b>10/6/2017 12:39:42 PM</b>	Prep Date:	<b>10/6/2017</b>			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	20.6	0.400	20.00	0.1780	102	90	110	1.28	20	

**Qualifiers:** B Analyte detected in the associated Method Blank  
J Analyte detected between MDL and RL  
ND Not Detected at the Method Detection Limit  
RL Reporting Limit  
J Analyte detected between SDL and RL

DF Dilution Factor  
MDL Method Detection Limit  
R RPD outside accepted control limits  
S Spike Recovery outside control limits  
N Parameter not NELAC certified

**CLIENT:** Pastor, Behling & Wheeler  
**Work Order:** 1709308  
**Project:** Luminant - BBSES - Ash Ponds

## ANALYTICAL QC SUMMARY REPORT

**RunID: IC4\_171006A**

Sample ID <b>ICV-171006</b>	Batch ID: <b>R94565</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>ICV</b>	Run ID: <b>IC4_171006A</b>	Analysis Date: <b>10/6/2017 11:06:46 AM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.9	1.00	25.00	0	99.5	90	110			
Fluoride	9.91	0.400	10.00	0	99.1	90	110			
Sulfate	75.7	3.00	75.00	0	101	90	110			

Sample ID <b>CCV1-171006</b>	Batch ID: <b>R94565</b>	TestNo: <b>E300</b>	Units: <b>mg/L</b>
SampType: <b>CCV</b>	Run ID: <b>IC4_171006A</b>	Analysis Date: <b>10/6/2017 3:03:42 PM</b>	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.86	1.00	10.00	0	98.6	90	110			
Fluoride	4.01	0.400	4.000	0	100	90	110			
Sulfate	29.5	3.00	30.00	0	98.4	90	110			

LUMINANT

<b>Qualifiers:</b>	<p>B Analyte detected in the associated Method Blank</p> <p>J Analyte detected between MDL and RL</p> <p>ND Not Detected at the Method Detection Limit</p> <p>RL Reporting Limit</p> <p>J Analyte detected between SDL and RL</p>	<p>DF Dilution Factor</p> <p>MDL Method Detection Limit</p> <p>R RPD outside accepted control limits</p> <p>S Spike Recovery outside control limits</p> <p>N Parameter not NELAC certified</p>
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CLIENT: Pastor, Behling & Wheeler

Work Order: 1709308

Project: Luminant - BBSES - Ash Ponds

# ANALYTICAL QC SUMMARY REPORT

RunID: WC\_171002A

The QC data in batch 82622 applies to the following samples: 1709308-01B, 1709308-02B, 1709308-03B, 1709308-04B, 1709308-05B, 1709308-06B, 1709308-07B

Sample ID	<b>MB-82622</b>	Batch ID:	<b>82622</b>	TestNo:	<b>M2540C</b>	Units:	<b>mg/L</b>
SampType:	<b>MBLK</b>	Run ID:	<b>WC_171002A</b>	Analysis Date:	<b>10/3/2017 10:45:00 AM</b>	Prep Date:	<b>10/2/2017</b>
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera		<10.0	10.0				

Sample ID	<b>LCS-82622</b>	Batch ID:	<b>82622</b>	TestNo:	<b>M2540C</b>	Units:	<b>mg/L</b>
SampType:	<b>LCS</b>	Run ID:	<b>WC_171002A</b>	Analysis Date:	<b>10/3/2017 10:45:00 AM</b>	Prep Date:	<b>10/2/2017</b>
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera		745	10.0	745.6	0	99.9	90 113

Sample ID	<b>1709307-02B-DUP</b>	Batch ID:	<b>82622</b>	TestNo:	<b>M2540C</b>	Units:	<b>mg/L</b>
SampType:	<b>DUP</b>	Run ID:	<b>WC_171002A</b>	Analysis Date:	<b>10/3/2017 10:45:00 AM</b>	Prep Date:	<b>10/2/2017</b>
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera		1820	50.0	0	1745		3.93 5

Sample ID	<b>1709307-03B-DUP</b>	Batch ID:	<b>82622</b>	TestNo:	<b>M2540C</b>	Units:	<b>mg/L</b>
SampType:	<b>DUP</b>	Run ID:	<b>WC_171002A</b>	Analysis Date:	<b>10/3/2017 10:45:00 AM</b>	Prep Date:	<b>10/2/2017</b>
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
Total Dissolved Solids (Residue, Filtera		1010	50.0	0	995.0		1.50 5

**Qualifiers:**

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit
- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAC certified