

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

**MARTIN LAKE STEAM ELECTRIC STATION
A1 AREA LANDFILL
RUSK COUNTY, TEXAS**

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Prepared For:

Luminant Generation Company LLC
6555 Sierra Drive
Irving, TX 75039

Prepared By:

Pastor, Behling & Wheeler, LLC
2201 Double Creek Drive, Suite 4004
Round Rock, Texas 78664
Texas Engineering Firm No. 4760

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1.0 INTRODUCTION

Luminant Generation Company LLC (Luminant) operates the Martin Lake Steam Electric Station (MLSES) located approximately 5 miles southeast of Tatum, Rusk County, Texas (Figure 1). The MLSES consists of three coal/lignite-fired power generation units. Coal Combustion Residuals (CCRs) including fly ash, bottom ash and gypsum are generated as part of the MLSES unit operations. Currently, CCRs generated at the MLSES are transported off-site for beneficial use by third-parties or are managed by Luminant in surface impoundments located on the MLSES property or the A1 Area Landfill located approximately 2.5 miles east of the MLSES. Three CCR Units have been identified within the MLSES operations, the Ash Pond Area (the West Ash Pond (WAP) East Ash Pond (EAP), and the New Scrubber Pond), Permanent Disposal Pond 5 (PDP 5), and A1 Area Landfill. This report discusses the A1 Area Landfill (the Site).

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 A1 Area Landfill is considered an existing CCR unit and is 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 hydraulically upgradient or 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 A1 Area Landfill CCR monitoring well system from October 2015 to December 2016 (BMW-11AR – BMW-24) and from September 2016 through August 2017 (BMW-26 – BMW-28). 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, 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 A1 Area Landfill

The A1 Area Landfill is located at the Beckville Lignite Mine, approximately 2.5 miles southeast of the MLSES power units, on the opposite side of Martin Lake from the MLSES (Figure 2). CCRs generated at the MLSES, including fly ash, bottom ash, and gypsum/scrubber sludge are transported and managed/disposed of by Luminant in the A1 Area Landfill. The A1 Area Landfill was constructed within a mined-out area of the Beckville Lignite Mine, and is surrounded and underlain by spoil material that was previously excavated during lignite mining operations.

2.2 Local Geology and Hydrogeology

The A1 Area Landfill is located in the outcrop area of the Eocene-aged Wilcox Group (Barnes, 1965). The A1 Area Landfill is constructed within the spoil material that was excavated during lignite mining operations at the Beckville Lignite Mine. Based on available lithologic descriptions of the spoil material, the geology primarily consists of a heterogeneous mixture of clay and sand with trace imbedded fragments of lignite. The spoil depth generally increases to the northwest. The spoil/native contact in the southeastern portion of the A1 Area Landfill was encountered at depths ranging from 9 feet bgs to 70 feet bgs, while the spoil/native contact in the northwestern portion of the A1 Area Landfill was encountered at depths ranging from 90 feet bgs to 150 feet bgs. Native material encountered below the spoil zone consists of lignite or native, silty clay (PBW, 2017a). The A1 Area Landfill groundwater monitoring wells are all completed within the spoil zone.

2.3 A1 Area Landfill Groundwater Monitoring System

The CCR groundwater monitoring well system at the Site consists of eleven monitoring wells (BMW-11AR, BMW-18, BMW-19, BMW-20, BMW-21, BMW-22, BMW-23, BMW-24, BMW-26, BMW-27, and BMW-28) 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 2012, 2015, and 2016. No wells were added to or removed from the CCR groundwater monitoring system in 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 318.19 feet above mean sea level (amsl) to 386.98 feet amsl, and depths to water ranging from 1.77 feet bgs to 55.02 feet bgs (Table 2).

Groundwater elevations were generally highest on the north side of the landfill, with an inferred groundwater flow direction radially outward from the north side of the landfill (Figure 3). Based on the inferred groundwater flow direction, the location of each CCR monitoring well relative to the A1 Area Landfill is as follows:

Upgradient Wells	Downgradient Wells
BMW-11A-R	BMW-18 BMW-19 BMW-20 BMW-21 BMW-22 BMW-23 BMW-24 BMW-26 BMW-27 BMW-28

3.0 BACKGROUND GROUNDWATER MONITORING PROGRAM

Eight background groundwater monitoring events were performed using the A1 Area Landfill CCR monitoring well system from October 2015 to December 2016 (BMW-11AR – BMW-24) and from September 2016 through August 2017 (BMW-26 – BMW-28). The results of the background monitoring events are described in this section.

3.1 Background Groundwater Monitoring Results

The A1 Area Landfill CCR groundwater monitoring wells were sampled approximately every two months from October 2015 to December 2016 (BMW-11AR – BMW-24) and periodically from September 2016 through August 2017 (BMW-26 – BMW-28) for a total of eight sampling events per well 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 use 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 A1 Area Landfill 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 A1 Area Landfill 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 A1 Area Landfill CCR groundwater monitoring network.

4.1 Detection Monitoring Results

PBW collected the initial detection monitoring groundwater samples from the A1 Area Landfill 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 based on the 2017/2018 detection monitoring results.

LUMINANT

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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- Environmental Protection Agency (EPA), 2009. Unified Guidance Document: Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, EPA 530-R-09-007, March 2009.
- Pastor, Behling & Wheeler, LLC, 2017a. Coal Combustion Residual Rule Groundwater Monitoring System Certification, Martin Lake Steam Electric Station, A1 Area Landfill, Rusk County, Texas. October 16, 2017.
- Pastor, Behling & Wheeler, LLC, 2017b. Coal Combustion Residual Rule Monitoring Well Design, Installation, Development, and Decommissioning Report, Martin Lake Steam Electric Station, A1 Area Landfill, Rusk County, Texas. October 13, 2017.
- Pastor, Behling & Wheeler, LLC, 2017c. Coal Combustion Residual Rule Statistical Analysis Plan, Martin Lake Steam Electric Station, A1 Area Landfill, Rusk County, Texas. October 11, 2017.

Tables

TABLE 1
WELL CONSTRUCTION SUMMARY
A1 AREA LANDFILL
MARTIN LAKE STEAM ELECTRIC STATION

Well ID	Date Installed	Northing	Easting	Ground Elevation (ft amsl)	TOC Elevation (ft amsl)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)	Screen Length (ft)	Total Design Depth (ft bgs)	Casing Diameter (in)
BMW-11AR	2012	221220	2919014	423.37	426.05	119	139	20	139	4
BMW-18	9/29/15	216951	2915600	355.50	357.83	100	120	20	120	2
BMW-19	10/7/15	219535	2918071	397.47	400.69	25	45	20	45	2
BMW-20	10/8/15	219167	2923996	354.67	357.51	10	30	20	30	2
BMW-21	9/27/15	217793	2923479	347.87	350.98	20	40	20	40	2
BMW-22	9/27/15	216298	2924360	329.53	332.30	20	40	20	40	2
BMW-23	9/28/15	215105	2923180	339.43	341.90	15	35	20	35	2
BMW-24	9/28/15	213874	2921447	344.70	347.07	20	40	20	40	2
BMW-26	8/31/16	221187	2921307	365.96	369.44	20	30	10	30	4
BMW-27	9/1/16	220024	2922347	373.46	376.25	20	30	10	30	4
BMW-28	10/27/16	215307	2917356	371.27	373.21	40	60	20	60	2

Notes:

- Abbreviations: ft - feet; amsl - above mean sea level; bgs - below ground surface

TABLE 2
GROUNDWATER ELEVATION SUMMARY
A1 AREA LANDFILL
MARTIN LAKE STEAM ELECTRIC STATION

Well ID	TOC Elevation (ft amsl)	Date	Depth to Water (ft bgs)	Water Elevation (ft amsl)
BMW-11AR	426.05	10/30/15	43.79	382.26
		12/30/15	43.11	382.94
		02/24/16	41.77	384.28
		04/07/16	40.49	385.56
		06/08/16	39.26	386.79
		08/11/16	39.24	386.81
		10/25/16	39.07	386.98
		12/13/16	40.57	385.48
		09/25/17	39.08	386.97
		10/30/15	33.40	324.43
		12/30/15	32.16	325.67
		02/24/16	29.49	328.34
		04/07/16	28.98	328.85
		06/08/16	28.04	329.79
		08/11/16	28.19	329.64
		10/25/16	28.31	329.52
		12/13/16	29.88	327.95
		09/25/17	27.29	330.54
BMW-19	400.69	10/30/15	21.42	379.27
		12/30/15	20.14	380.55
		02/24/16	20.41	380.28
		04/07/16	19.56	381.13
		06/08/16	19.22	381.47
		08/11/16	20.84	379.85
		10/25/16	20.33	380.36
		12/13/16	24.11	376.58
		09/25/17	23.12	377.57
		10/30/15	8.56	348.95
		12/30/15	8.81	348.70
		02/24/16	8.96	348.55
		04/07/16	9.24	348.27
		06/08/16	8.81	348.70
		08/11/16	8.52	348.99
		10/25/16	8.36	349.15
		12/13/16	10.21	347.30
		09/25/17	8.19	349.32
BMW-21	350.98	10/30/15	5.23	345.75
		12/30/15	4.09	346.89
		02/24/16	3.83	347.15
		04/07/16	3.93	347.05
		06/08/16	3.34	347.64
		08/11/16	4.56	346.42
		10/25/16	3.84	347.14
		12/13/16	6.89	344.09
		09/25/17	4.81	346.17

TABLE 2
GROUNDWATER ELEVATION SUMMARY
A1 AREA LANDFILL
MARTIN LAKE STEAM ELECTRIC STATION

Well ID	TOC Elevation (ft amsl)	Date	Depth to Water (ft bgs)	Water Elevation (ft amsl)
BMW-22	332.30	10/30/15	7.11	325.19
		12/30/15	6.17	326.13
		02/24/16	5.74	326.56
		04/07/16	7.33	324.97
		06/08/16	6.91	325.39
		08/11/16	5.96	326.34
		10/25/16	6.07	326.23
		12/13/16	7.86	324.44
		09/25/17	6.09	326.21
BMW-23	341.90	10/30/15	16.47	325.43
		12/30/15	15.34	326.56
		02/24/16	14.78	327.12
		04/07/16	13.98	327.92
		06/08/16	11.72	330.18
		08/11/16	15.21	326.69
		10/25/16	15.51	326.39
		12/13/16	17.56	324.34
		09/25/17	15.97	325.93
BMW-24	347.07	10/30/15	14.26	332.81
		12/30/15	12.09	334.98
		02/24/16	12.11	334.96
		04/07/16	12.03	335.04
		06/08/16	11.22	335.85
		08/11/16	12.73	334.34
		10/25/16	12.72	334.35
		12/13/16	14.27	332.80
		09/25/17	12.33	334.74
BMW-25*	339.95	10/30/15	13.79	326.16
		12/30/15	12.91	327.04
		02/24/16	11.96	327.99
		04/07/16	11.92	328.03
		06/08/16	10.62	329.33
		08/11/16	12.61	327.34
		10/25/16	12.46	327.49
		12/13/16	13.92	326.03
		09/25/17	15.97	323.98
BMW-26	369.44	9/13/16	1.77	367.67
		10/25/16	2.39	367.05
		12/13/16	4.02	365.42
		1/23/17	2.21	367.23
		2/23/17	2.67	366.77
		3/24/17	2.46	366.98
		4/24/17	2.24	367.20
		5/25/17	2.13	367.31
		06/29/17	2.12	367.32
		09/25/17	2.12	367.32

TABLE 2
GROUNDWATER ELEVATION SUMMARY
A1 AREA LANDFILL
MARTIN LAKE STEAM ELECTRIC STATION

Well ID	TOC Elevation (ft amsl)	Date	Depth to Water (ft bgs)	Water Elevation (ft amsl)
BMW-27	376.25	9/13/16	2.12	374.13
		10/25/16	2.46	373.79
		12/13/16	4.11	372.14
		1/23/17	2.51	373.74
		2/23/17	2.84	373.41
		3/24/17	2.67	373.58
		4/24/17	3.07	373.18
		5/25/17	2.67	373.58
		06/29/17	2.24	374.01
		09/25/17	2.47	373.78
BMW-28	373.21	12/13/16	55.02	318.19
		1/23/17	45.94	327.27
		2/23/17	39.97	333.24
		3/24/17	39.82	333.39
		4/24/17	36.81	336.40
		5/25/17	34.91	338.30
		6/29/17	33.85	339.36
		8/1/2017	39.05	334.16
		09/25/17	32.52	340.69

Notes:

1. Abbreviations: ft - feet; amsl - above mean sea level; bgs - below ground surface
2. * - Non-CCR well used only to evaluate groundwater water elevations.

TABLE 3
APPENDIX III BACKGROUND GROUNDWATER ANALYTICAL DATA
MARTIN LAKE STEAM ELECTRIC STATION
A1 LANDFILL

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	Fl (mg/L)	pH (s.u.)	SO ₄ (mg/L)	TDS (mg/L)
BMW-11-AR	10/29/15	0.332	91.5	11.3	<0.1	6.97	243	923
	12/30/15	0.285	92.3	2.39	0.26 J	6.87	114	642
	02/25/16	0.44	136	18.8	0.123 J	6.52	382	1,450
	04/07/16	0.391	151	17.5	<0.1	6.34	334	1,290
	06/09/16	0.417	182	19.8	<0.1	6.63	603	1,700
	08/11/16	0.389	170	20.8	<0.1	6.68	682	1,790
	10/26/16	0.316	99.7	15.8	<0.1	6.85	495	1,590
	12/14/16	0.409	201	19.8	<0.1	6.65	665	1,970
BMW-18	10/30/15	0.41	7.2	26.6	0.148 J	6.65	97	768
	12/30/15	0.322	346	7.14	0.101 J	6.77	1,570	2,470
	02/26/16	0.406	9.49	17.1	0.164 J	6.91	90	508
	04/07/16	0.423	7.08	16.3	0.117 J	6.52	87	489
	06/09/16	0.429	7.32	18.7	0.128 J	6.64	101	498
	08/11/16	0.415	7.02	18.5	<0.1	6.81	100	493
	10/26/16	0.45	6.55	18.1	0.158 J	6.67	94.3	534
	12/14/16	0.411	9.26	17.6	0.134 J	6.77	94.1	493
BMW-19	10/29/18	0.385	417	16.2	<0.1	6.77	2,070	4,060
	12/30/15	0.4	441	11.4	0.127 J	6.49	2,100	3,260
	02/25/16	0.458	504	8.4	<0.1	6.14	2,330	2,960
	04/07/16	0.424	480	8.46	<0.1	6.71	2,270	3,740
	06/09/16	0.444	489	8.04	<0.1	6.32	2,390	4,180
	08/11/16	0.419	458	8.26	<0.1	6.95	2,370	3,780
	10/26/16	0.417	443	8.26	<0.1	6.97	2,210	4,410
	12/14/16	0.427	481	7.2	<0.1	6.75	2220	3,660
BMW-20	10/23/15	0.139 J	71.2	64.8	<0.1	6.28	223	804
	12/30/15	0.144	96	36.4	0.12 J	6.32	443	987
	02/25/16	0.202	157	30.7	<0.1	5.7	131	888
	04/07/16	0.0787	80	30	<0.1	6.22	219	600
	06/09/16	0.129	128	37.5	<0.1	6.24	557	1,220
	08/11/16	0.106	107	39.4	<0.1	6.86	602	1,310
	10/26/16	0.113	93.5	48.2	<0.1	6.93	801	1,610
	12/13/16	0.0687	62.8	42.8	<0.1	6.64	335	757
BMW-21	10/23/15	0.973	157	496	<0.1	7.28	484	2,510
	12/30/15	0.951	142	365	0.126 J	7.08	444	2,020
	02/25/16	1.01	148	393	<0.1	6.64	462	1,990
	04/07/16	0.99	158	373	<0.1	7.02	454	2,190
	06/09/16	1.17	155	415	<0.1	7.09	477	2,230
	08/11/16	1.04	143	425	<0.1	6.66	484	1,860
	10/26/16	1.14	145	399	<0.1	6.85	434	2,170
	12/13/16	0.993	149	426	<0.1	6.93	483	2,170

TABLE 3
APPENDIX III BACKGROUND GROUNDWATER ANALYTICAL DATA
MARTIN LAKE STEAM ELECTRIC STATION
A1 LANDFILL

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	Fl (mg/L)	pH (s.u.)	SO ₄ (mg/L)	TDS (mg/L)
BMW-22	10/23/15	2.76	209	377	<0.1	6.86	927	2,720
	12/30/15	2.54	150	215	0.186 J	6.92	670	1,870
	02/25/16	3.18	209	295	<0.1	6.27	949	2,430
	04/07/16	3.34	202	256	<0.1	6.84	839	2,230
	06/08/16	3.53	193	279	<0.1	6.84	890	2,340
	08/11/16	3.18	198	311	<0.1	6.25	946	2,520
	10/26/16	3.38	183	241	<0.1	6.89	803	2,600
	12/13/16	3.45	191	281	<0.1	6.73	896	2,370
BMW-23	10/23/15	1.19	102	287	<0.1	6.84	577	1,980
	12/30/15	1.25	95.2	214	0.122 J	6.76	529	1,500
	02/25/16	1.31	97.7	225	<0.1	6.16	527	1,520
	04/07/16	1.22	95.1	221	<0.1	6.63	503	1,510
	06/08/16	1.31	102	254	<0.1	6.71	558	1,720
	08/11/16	1.28	90.4	242	<0.1	6.15	539	1,430
	10/26/16	1.22	86.8	219	<0.1	6.85	467	1,700
	12/13/16	1.25	91.8	237	<0.1	6.63	510	1,870
BMW-24	10/23/15	0.144 J	61.6	633	0.247 J	7.14	45	1,510
	12/30/15	0.347	58.8	404	0.391 J	7.07	125	1,210
	02/25/16	0.431	61.6	332	0.236 J	5.8	184	1,210
	04/07/16	0.532	63.4	224	0.109 J	7.07	240	1,100
	06/08/16	0.612	60.1	201	0.147 J	7.06	259	984
	08/11/16	0.248	58.5	481	0.225 J	5.84	97.8	1,150
	10/26/16	0.225	59.2	518	0.305 J	6.78	34.2	1,490
	12/13/16	0.225	62.5	518	0.3 J	6.78	33	1,480
BMW-26	9/13/16	0.457	234	97.8	<0.1	6.51	671	2,120
	10/26/16	0.127	44.3	16.2	<0.1	6.87	140	414
	12/14/16	0.251	130	152	0.344 J	6.96	1210	2,050
	01/23/17	0.478	224	126	<0.1	6.33	669	1,950
	02/23/17	0.0683	52	23.9	0.106 J	6.22	20.4	209
	03/24/17	0.44	215	112	<0.1	6.68	610	1,690
	04/24/17	0.495	218	111	<0.1	6.37	576	2,210
	05/25/17	0.613	178	115	<0.1	6.82	613	2,110
BMW-27	06/29/17	0.507	233	111	<0.1	-- ³	604	1700
	9/13/16	0.486	160	133	0.668	5.87	1,150	2,750
	10/26/16	0.548	196	102	<0.1	6.73	700	2,020
	12/14/16	0.529	211	101	<0.1	6.9	674	1,810
	01/23/17	0.393	152	143	0.573	5.62	1,280	2,260
	02/23/17	0.0832	52.4	24	0.252 J	6.4	20.6	239
	03/24/17	0.304	120	132	0.738	6.35	1,190	2,100
	04/24/17	0.34	132	130	0.663	6.22	1,150	2,290
	05/25/17	0.331	122	124	1.61	6.67	1,150	2,320
	06/29/17	0.39	144	129	0.717	-- ³	1,180	2,080

TABLE 3
APPENDIX III BACKGROUND GROUNDWATER ANALYTICAL DATA
MARTIN LAKE STEAM ELECTRIC STATION
A1 LANDFILL

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	Fl (mg/L)	pH (s.u.)	SO ₄ (mg/L)	TDS (mg/L)
BMW-28	12/14/16	1.22	234	111	<0.1	6.87	1280	2,360
	01/23/17	1.18	221	122	0.104 J	6.85	1,370	2,810
	02/23/17	0.0776	53.3	24	0.11 J	6.43	20.3	203
	03/24/17	1.14	242	121	<0.1	6.36	1,350	2,580
	04/24/17	1.16	266	121	0.19 J	6.57	1,330	2,980
	05/25/17	1.23	255	130	<0.1	6.70	1,410	3,180
	06/29/17	1.21	269	130	0.137 J	6.98	1,450	2,950
	08/01/17	1.17	260	132	<0.1	-- ³	1,460	2,780
Equipment Blank								
EB	04/06/16	0.0324	2.98	7.93	<0.1	5.94	1.66 J	13
	06/08/16	0.0247 J	7.71	17.5	<0.1	6.54	15.9	36
	08/10/16	0.0375	5.33	11.4	<0.1	6.97	24.7	<10
	10/19/16	0.081	0.129 J	1.07	<0.1	6.88	<1	43
	12/14/16	0.0222 J	<0.1	<0.3	<0.1	6.91	<1	<10

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.
3. --³: pH meter malfunctioned in field.

TABLE 4
APPENDIX IV BACKGROUND GROUNDWATER ANALYTICAL DATA
MARTIN LAKE STEAM ELECTRIC STATION

A1 LANDFILL

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 Comb.^
BMW-11-AR	10/29/15	<0.0008	0.0116	0.0659	<0.0003	<0.0003	<0.002	0.0124	<0.1	0.000391 J	0.0594	<0.00008	0.00496 J	<0.002	<0.0005	1.60	4.75	6.35
	12/30/15	<0.0008	0.00362 J	0.0433	<0.0003	<0.0003	<0.002	<0.003	0.26 J	0.000362 J	0.0589	<0.00008	0.00384 J	<0.002	<0.0005	1.66	3.19	4.85
	02/25/16	<0.0008	0.00608	0.0724	<0.0003	<0.0003	<0.002	0.00486 J	0.123 J	<0.0003	0.0276	<0.00008	0.00597	<0.002	<0.0005	2.43	3.80	6.23
	04/07/16	<0.0008	0.00614	0.0929	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0195	<0.00008	0.00444 J	<0.002	<0.0005	0.885	1.48	2.37
	06/09/16	<0.0008	0.00532	0.0891	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0187	<0.00008	0.00355 J	<0.002	<0.0005	0.47	<0.674	1.14
	08/11/16	<0.0008	0.00271 J	0.0772	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0147	<0.00008	0.00346 J	<0.002	<0.0005	0.810	2.42	3.23
	10/26/16	<0.0008	<0.002	0.0429	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0508	<0.00008	0.00363 J	<0.002	<0.0005	0.631	0.922	1.55
BMW-18	12/14/16	<0.0008	0.0061	0.074	<0.0003	<0.0003	<0.002	<0.003	<0.1	0.00347	0.0139	<0.00008	0.00303 J	<0.002	<0.0005	<0.821	<1.73	2.55
	10/30/15	<0.0008	<0.002	0.0401	<0.0003	<0.0003	0.00944	<0.003	0.148 J	<0.0003	0.14	<0.00008	<0.002	<0.002	<0.0005	0.526	<1.51	2.04
	12/30/15	<0.0008	<0.002	0.0168	<0.0003	<0.0003	<0.002	0.0129	0.101 J	<0.0003	0.0415	<0.00008	<0.002	<0.002	<0.0005	<0.405	<2.04	2.45
	02/26/16	<0.0008	<0.002	0.0446	<0.0003	<0.0003	0.00214 J	<0.003	0.164 J	<0.0003	0.0156	<0.00008	<0.002	<0.002	<0.0005	<0.406	<1.9	2.31
	04/07/16	<0.0008	<0.002	0.0306	<0.0003	<0.0003	<0.002	<0.003	0.117 J	<0.0003	0.0171	<0.00008	<0.002	<0.002	<0.0005	<0.109	<1.00	1.11
	06/09/16	<0.0008	<0.002	0.0283	<0.0003	<0.0003	<0.002	<0.003	0.128 J	<0.0003	0.0152	<0.00008	<0.002	<0.002	<0.0005	<0.143	0.857	1.00
	08/11/16	<0.0008	<0.002	0.0291	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0147	<0.00008	<0.002	<0.002	<0.0005	<0.22	<1.07	1.29
BMW-19	10/26/16	<0.0008	<0.002	0.029	<0.0003	<0.0003	<0.002	<0.003	0.158 J	<0.0003	0.0156	<0.00008	<0.002	<0.002	<0.0005	<0.132	<0.534	0.67
	12/14/16	<0.0008	<0.002	0.0384	<0.0003	<0.0003	<0.002	<0.003	0.134 J	<0.0003	0.0158	<0.00008	<0.002	<0.002	<0.0005	0.140	<1.99	2.13
BMW-20	10/29/18	<0.0008	<0.002	0.0231	<0.0003	<0.0003	<0.002	0.0161	<0.1	<0.0003	0.0545	<0.00008	<0.002	<0.002	<0.0005	0.395	<1.56	1.96
	12/30/15	<0.0008	<0.002	0.0222	<0.0003	<0.0003	<0.002	0.0166	0.127 J	<0.0003	0.0506	<0.00008	<0.002	<0.002	<0.0005	0.598	<2.89	3.49
	02/25/16	<0.0008	0.00235 J	0.0169	<0.0003	<0.0003	<0.002	0.0149	<0.1	<0.0003	0.0711	<0.00008	<0.002	<0.002	<0.0005	0.571	1.94	2.51
	04/07/16	<0.0008	<0.002	0.0178	<0.0003	<0.0003	<0.002	0.0137	<0.1	<0.0003	0.0591	<0.00008	<0.002	<0.002	<0.0005	<0.185	<0.715	0.90
	06/09/16	<0.0008	<0.002	0.0158	<0.0003	<0.0003	<0.002	0.0141	<0.1	<0.0003	0.0644	<0.00008	<0.002	<0.002	<0.0005	<0.142	1.98	2.12
	08/11/16	<0.0008	0.00711	0.0158	<0.0003	<0.0003	<0.002	0.0128	<0.1	<0.0003	0.0568	<0.00008	<0.002	<0.002	<0.0005	0.927	<0.812	1.74
	10/26/16	<0.0008	<0.002	0.0144	<0.0003	<0.0003	<0.002	0.0104	<0.1	<0.0003	0.0495	<0.00008	<0.002	<0.002	<0.0005	<0.152	<0.48	0.63
BMW-21	12/14/16	<0.0008	0.00369 J	0.0171	<0.0003	<0.0003	<0.002	0.0125	<0.1	<0.0003	0.0584	<0.00008	<0.002	<0.002	<0.0005	0.309	0.827	1.14
	10/23/15	<0.0008	0.00236 J	0.0778	<0.0003	<0.0003	<0.002	0.0256	<0.1	0.000501 J	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.463	<1.89	2.35
	12/30/15	<0.0008	0.00344 J	0.0777	<0.0003	<0.0003	<0.002	0.051	0.12 J	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.816	<2.41	3.23
	02/25/16	<0.0008	0.00474 J	0.0989	<0.0003	<0.0003	<0.002	0.022	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	<0.61	2.85	3.46
	04/07/16	<0.0008	0.00411 J	0.0912	<0.0003	<0.0003	<0.002	0.0276	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.221	<1.08	1.30
	06/09/16	<0.0008	0.0103	0.0776	<0.0003	<0.0003	<0.002	0.054	<0.1	0.000696 J	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.51	<0.716	1.23
	08/11/16	<0.0008	<0.002	0.0637	<0.0003	<0.0003	<0.002	0.0513	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.322	1.40	1.72
BMW-22	10/26/16	<0.0008	0.00444 J	0.0421	<0.0003	<0.0003	<0.002	0.0786	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.347	0.848	1.20
	12/13/16	<0.0008	0.00483 J	0.0377	<0.0003	<0.0003	<0.002	0.0451	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.246	1.15	1.40
	10/23/15	<0.0008	0.00324 J	0.0703	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0623	<0.00008	<0.002	<0.002	<0.0005	<0.436	<0.948	1.38
	12/30/15	<0.0008	0.00247 J	0.0478	<0.0003	<0.0003	<0.002	<0.003	0.126 J	<0.0003	0.0602	<0.00008	<0.002	<0.002	<0.0005	0.584	<2.00	2.58
	02/25/16	<0.0008	0.00327 J	0.0471	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0602	<0.00008	<0.002	<0.002	<0.0005	0.735	2.13	2.87
	04/07/16	<0.0008	0.00337 J	0.0472	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0653	<0.00008	<0.002	<0.002	<0.0005	0.470	<2.78	3.25
	06/09/16	<0.0008	0.0034 J	0.0457	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0675	<0.00008	<0.002	<0.002	<0.0005	0.32	<0.917	1.24
BMW-22	08/11/16	<0.0008	0.00373 J	0.0445	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0527	<0.00008	<0.002	<0.002	<0.0005	0.655	<0.728	1.38
	10/26/16	<0.0008	0.0037 J	0.0443	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0611	<0.00008	<0.002	<0.002	<0.0005	0.383	1.61	1.99
	12/13/16	<0.0008	0.00217 J	0.0438	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0631	<0.00008	<0.002	<0.002	<0.0005	0.213	1.00	1.21
	10/23/15	<0.0008	<0.002	0.106	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0675	<0.00008	<0.002	<0.002	<0.0005	1.59	2.11	3.70
	12/30/15	<0.0008	<0.002	0.084	<0.0003	<0.0003	<0.002	<0.003	0.186 J	<0.0003	0.0594	<0.00008	<0.002	<0.002	<0.0005	0.973	<1.55	2.52
	02/25/16	<0.0008	<0.002	0.0761	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0801	<0.00008	<0.002	<0.002	<0.0005	0.594	<1.93	2.52
	04/07/16	<0.0008	<0.002	0.072	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0773	<0.00008	<0.002	<0.002	<0.0005	0.480	1.46	1.94
BMW-22	06/08/16	<0.0008	0.00206 J	0.0667	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0847	<0.00008	<0.002	<0.002	<0.0005	0.888	1.88	2.77
	08/11/16	<0.0008	<0.002	0.0679	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0675	<0.00008	<0.002	<0.002	<0.0005	0.607	1.93	2.54
	10/26/16	<0.0008	0.00216 J	0.0645	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0753	<0.00008	<0.002	<0.002	<0.0005	0.633	1.02	1.65
	12/13/16	<0.0008	0.00232 J	0.0655	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0689	<0.00008	<0.002	<0.002	<0.0005	<0.209	1.05	1.26

TABLE 4
APPENDIX IV BACKGROUND GROUNDWATER ANALYTICAL DATA
MARTIN LAKE STEAM ELECTRIC STATION
A1 LANDFILL

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 Comb.^ (pCi/L)
BMW-23	10/23/15	<0.0008	<0.002	0.0519	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0802	<0.00008	<0.002	<0.002	<0.0005	1.19	<1.91	3.10
	12/30/15	<0.0008	<0.002	0.0462	<0.0003	<0.0003	<0.002	<0.003	0.122 J	<0.0003	0.0897	<0.00008	<0.002	<0.002	<0.0005	0.711	<2.62	3.33
	02/25/16	<0.0008	<0.002	0.0488	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0959	<0.00008	<0.002	<0.002	<0.0005	0.604	<1.78	2.38
	04/07/16	<0.0008	<0.002	0.0472	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.095	<0.00008	<0.002	<0.002	<0.0005	0.723	1.98	2.70
	06/08/16	<0.0008	<0.002	0.0497	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.103	<0.00008	<0.002	<0.002	<0.0005	0.654	1.29	1.94
	08/11/16	<0.0008	<0.002	0.0458	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.077	<0.00008	<0.002	<0.002	<0.0005	0.936	1.94	2.88
	10/26/16	<0.0008	<0.002	0.0437	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0856	<0.00008	<0.002	<0.002	<0.0005	0.472	1.76	2.23
BMW-24	12/13/16	<0.0008	<0.002	0.0407	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0817	<0.00008	<0.002	<0.002	<0.0005	<0.225	0.704	0.93
	10/23/15	<0.0008	0.00494 J	1.87	<0.0003	<0.0003	<0.002	0.00802	0.247 J	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	1.83	3.32	5.15
	12/30/15	<0.0008	0.00579	0.801	<0.0003	<0.0003	<0.002	0.0146	0.391 J	<0.0003	0.0161	<0.00008	<0.002	<0.002	<0.0005	0.485	<1.66	2.15
	02/25/16	<0.0008	0.00442 J	0.645	<0.0003	<0.0003	<0.002	0.0137	0.236 J	<0.0003	0.0267	<0.00008	<0.002	<0.002	<0.0005	1.20	<1.93	3.13
	04/07/16	<0.0008	0.00376 J	0.202	<0.0003	<0.0003	<0.002	0.0238	0.109 J	<0.0003	0.0415	<0.00008	<0.002	<0.002	<0.0005	<0.349	<1.58	1.93
	06/08/16	<0.0008	0.00481 J	0.181	<0.0003	<0.0003	<0.002	0.0227	0.147 J	<0.0003	0.0475	<0.00008	<0.002	<0.002	<0.0005	0.360	1.26	1.62
	08/11/16	<0.0008	0.00414 J	1.26	<0.0003	<0.0003	<0.002	0.00707	0.225 J	<0.0003	0.00938 J	<0.00008	<0.002	<0.002	<0.0005	0.564	<0.942	1.51
BMW-26	10/26/16	<0.0008	0.00364 J	1.88	<0.0003	<0.0003	<0.002	<0.003	0.305 J	<0.0003	0.00767 J	<0.00008	<0.002	<0.002	<0.0005	1.37	1.31	2.68
	12/13/16	<0.0008	0.00498 J	1.96	<0.0003	<0.0003	<0.002	0.00326 J	0.3 J	<0.0003	0.00914 J	<0.00008	<0.002	<0.002	<0.0005	0.270	1.16	1.43
	9/13/16	<0.0008	0.017	0.0425	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0944	<0.00008	0.00215 J	<0.002	<0.0005	0.154	<1.02	1.17
	10/26/16	<0.0008	0.00318 J	0.0731	<0.0003	<0.0003	<0.002	0.00402 J	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.175	<0.695	0.87
	12/14/16	<0.0008	<0.002	0.0424	<0.0003	0.000823 J	<0.002	0.236	0.344 J	<0.0003	0.0527	<0.00008	<0.002	<0.002	<0.0005	0.177	<1.29	1.47
	01/23/17	<0.0008	0.0325	0.0446	<0.0003	<0.0003	<0.002	<0.003	<0.1	0.000594 J	0.0977	<0.00008	0.0035 J	<0.002	<0.0005	0.351	0.936	1.29
	02/23/27	<0.0008	<0.002	0.0705	<0.0003	<0.0003	<0.002	<0.003	0.106 J	0.000726 J	0.0052 J	<0.00008	<0.002	<0.002	<0.0005	0.306	0.951	1.26
BMW-27	03/24/17	<0.0008	0.0107	0.0371	<0.0003	<0.0003	<0.002	<0.003	<0.1	0.000742 J	0.0964	<0.00008	0.00461 J	<0.002	<0.0005	0.335	<0.627	0.96
	04/24/17	<0.0008	0.00732	0.0322	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.099	<0.00008	0.00303 J	<0.002	<0.0005	<0.363	1.60	1.96
	05/25/17	<0.0008	0.00347 J	0.0243	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0951	<0.00008	0.00302 J	<0.002	<0.0005	<0.477	0.818	1.30
	06/29/17	<0.0008	0.0328	0.0352	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0985	<0.00008	0.00257 J	<0.002	<0.0005	0.198	0.677	0.88
	9/13/16	<0.0008	0.00536	0.0434	<0.0003	0.000615 J	<0.002	0.15	0.668	0.000432 J	0.0541	<0.00008	<0.002	<0.002	<0.0005	0.308	<1.14	1.45
	10/26/16	<0.0008	0.00625	0.0339	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0933	<0.00008	<0.002	<0.002	<0.0005	0.156	1.94	2.10
	12/14/16	<0.0008	0.0051	0.0342	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.0932	<0.00008	<0.002	<0.002	<0.0005	<0.12	<1.05	1.17
BMW-28	01/23/17	<0.0008	0.00845	0.0333	<0.0003	0.000707 J	0.00278 J	0.195	0.573	0.000323 J	0.0484	<0.00008	<0.002	<0.002	<0.0005	0.369	0.934	1.30
	02/23/27	<0.0008	<0.002	0.0704	<0.0003	<0.0003	<0.002	<0.003	0.252 J	0.000736 J	<0.005	<0.00008	<0.002	<0.002	<0.0005	<0.209	0.660	0.87
	03/24/17	<0.0008	0.00319 J	0.0296	<0.0003	0.000776 J	<0.002	0.222	0.738	<0.0003	0.0474	<0.00008	<0.002	<0.002	<0.0005	0.414	<0.725	1.14
	04/24/17	<0.0008	<0.002	0.0269	<0.0003	0.000659 J	<0.002	0.21	0.663	<0.0003	0.0497	<0.00008	<0.002	<0.002	<0.0005	<0.452	1.53	1.98
	05/25/17	<0.0008	<0.002	0.0266	<0.0003	0.000521 J	<0.002	0.2	1.61	0.000439 J	0.0471	<0.00008	<0.002	<0.002	<0.0005	<0.443	1.38	1.82
	06/29/17	<0.0008	0.00593	0.0307	<0.0003	0.000851 J	0.00266 J	0.255	0.717	<0.0003	0.048	<0.00008	<0.002	<0.002	<0.0005	0.303	0.628	0.93
	12/14/16	0.0012 J	<0.002	0.0509	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.11	<0.00008	0.0103	0.00445 J	<0.0005	<0.566	<2.22	2.79
Equipment Blank	01/23/17	0.001 J	<0.002	0.0518	<0.0003	<0.0003	<0.002	<0.003	0.104 J	<0.0003	0.116	<0.00008	0.00881 J	<0.002	<0.0005	0.626	1.12	1.75
	02/23/27	<0.0008	<0.002	0.0734	<0.0003	<0.0003	<0.002	<0.003	0.11 J	0.000965 J	0.00514 J	<0.00008	<0.002	<0.002	<0.0005	0.168	0.835	1.00
	03/24/17	0.0012 J	<0.002	0.046	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	0.1	<0.00008	0.00773	0.00208 J	<0.0005	1.04	1.17	2.21
	04/24/17	0.0011 J	<0.002	0.047	<0.0003	<0.0003	<0.002	<0.003	0.19 J	<0.0003	0.109	<0.00008	0.00766	<0.002	<0.0005	0.356	1.880	2.24
	05/25/17	0.00119 J	<0.002	0.0468	<0.0003	<0.0003	<0.002	<0.003	<0.1	0.000427 J	0.102	<0.00008	0.00764	<0.002	<0.0005	<0.739	1.170	1.91
	06/29/17	<0.0008	0.00253 J	0.0549	<0.0003	<0.0003	<0.002	0.0084	0.137 J	<0.0003	0.104	<0.00008	0.00754	<0.002	<0.0005	0.489	2.310	2.80
	08/01/17	<0.0008	0.0057	0.0524	<0.0003	<0.0003	<0.002	0.0115	<0.1	<0.0003	0.114	<0.00008	0.00707	<0.002	<0.0005	0.536	2.43	2.97
EB	04/06/16	<0.0008	<0.002	0.0641	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	<0.003	<0.00008	<0.002	<0.002	<0.0005	0.409	<0.838	1.25
	06/08/16	<0.0008	<0.002	<0.003	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	<0.463	<1.13	1.59
	08/10/16	<0.0008	<0.002	<0.003	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	<0.239	1.45	1.69
	10/19/16	<0.0008	<0.002	<0.003	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	<0.123	1.09	1.21
	12/14/16	<0.0008	<0.002	<0.003	<0.0003	<0.0003	<0.002	<0.003	<0.1	<0.0003	<0.005	<0.00008	<0.002	<0.002	<0.0005	0.192	<0.914	1.11

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

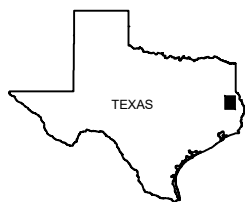
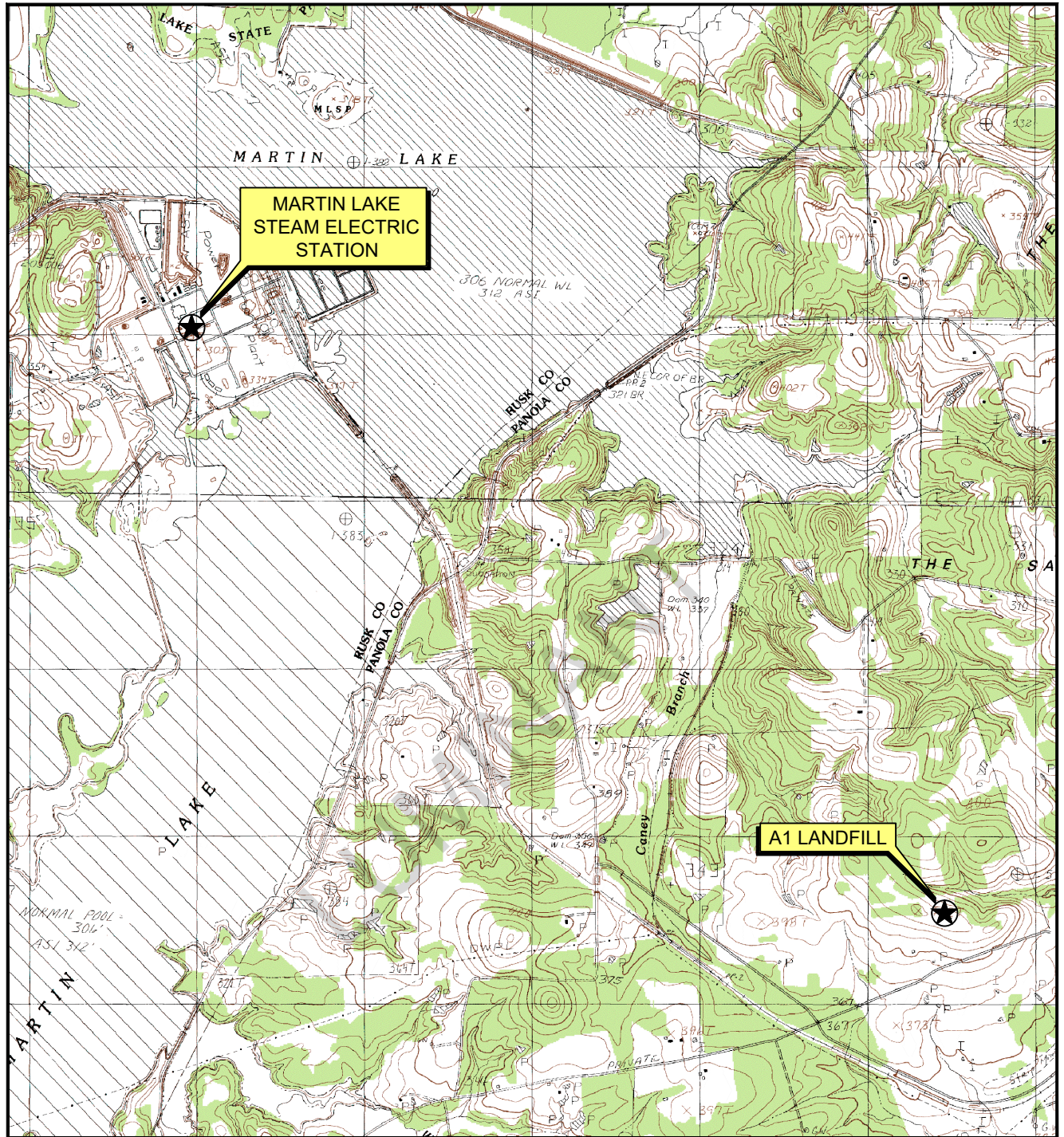
TABLE 5
APPENDIX III DETECTION MONITORING GROUNDWATER ANALYTICAL DATA
MARTIN LAKE STEAM ELECTRIC STATION
A1 LANDFILL

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	Fl (mg/L)	pH (s.u.)	SO ₄ (mg/L)	TDS (mg/L)
BMW-11-AR	09/25/17	0.448	199	15.2	<0.100	6.97	561	1,620
BMW-18	09/25/17	0.437	6.49	16.9	0.128 J	6.87	87.2	476
BMW-19	09/25/17	0.481	496	6.11	<0.100	6.95	2360	3,670
BMW-20	09/26/17	0.0973	116	33.5	<0.100	6.73	472	986
BMW-21	09/26/17	1.02	138	364	<0.100	6.76	417	1,850
BMW-22	09/26/17	3.53	209	270	<0.100	6.82	860	2,250
BMW-23	09/26/17	1.46	99.6	223	<0.100	6.65	482	1,550
BMW-24	9/26/17	0.656	66.8	229	<0.100	6.82	242	940
BMW-26	09/25/17	0.514	71	112	<0.100	6.95	606	1,510
BMW-27	09/25/17	0.336	128	126	0.254 J	6.89	1160	2,110
BMW-28	09/25/17	1.35 J	262	130	<0.100	6.85	1,430	3,060

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.

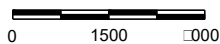
Figures



□ UADRANGLE LOCATION



Scale in Feet



SOURCE:
Base map from www.tnris.gov, Tatum, TX 7.5 min. USGS □ uadrangle dated 198□

MARTIN LAKE STEAM ELECTRIC STATION

A1 Area Landfill

Figure 1

A1 AREA LANDFILL SITE LOCATION MAP

PROJECT: 512□B

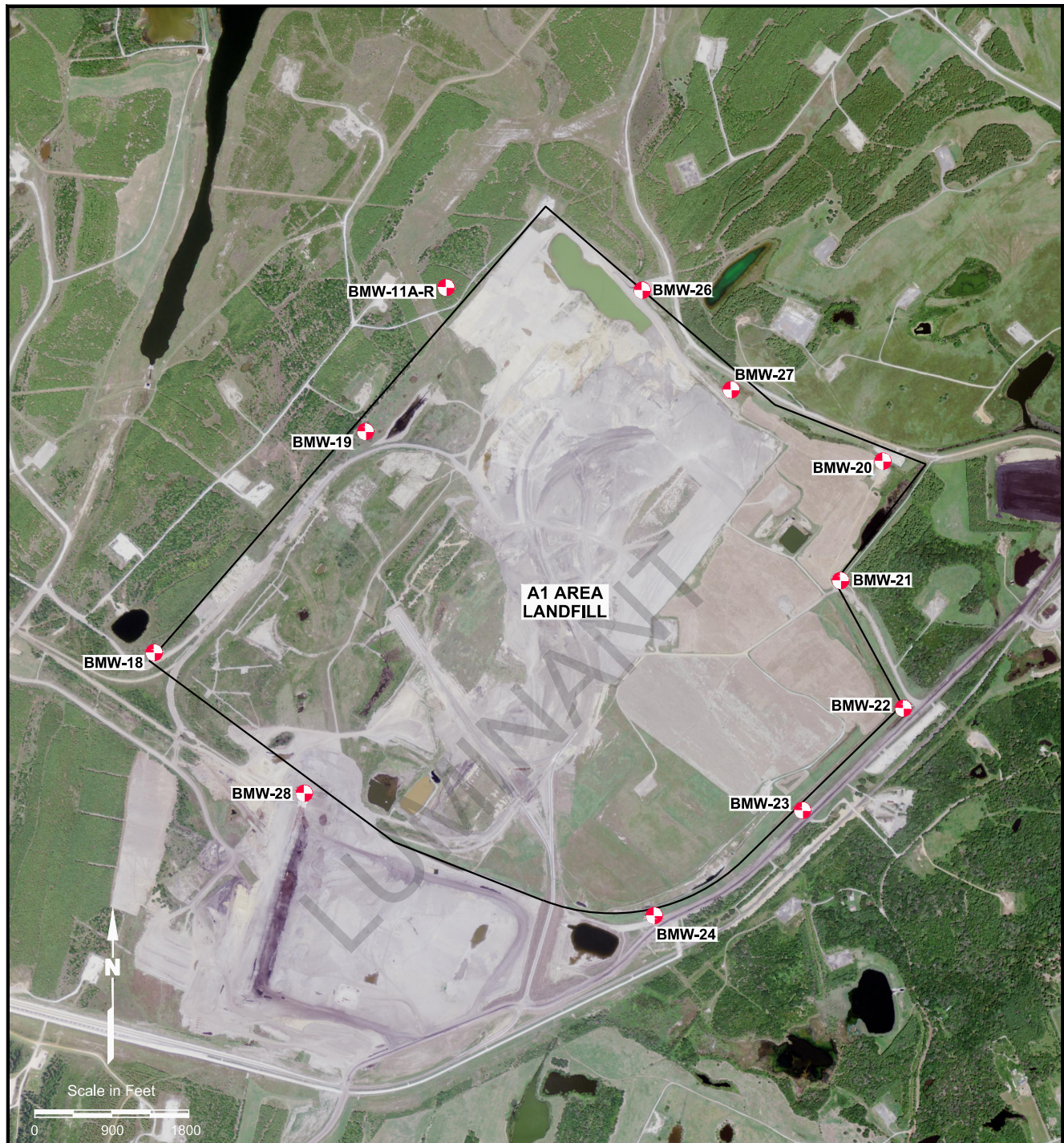
BY: AJD

REVISIONS

DATE: JUNE, 2015

CHECKED: PJB

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS



EXPLANATION

 CCR Monitoring Well

MARTIN LAKE STEAM ELECTRIC STATION TATUM, TEXAS

Figure 2

A1 AREA LANDFILL DETAILED SITE MAP

PROJECT: 5164B

BY: AJD

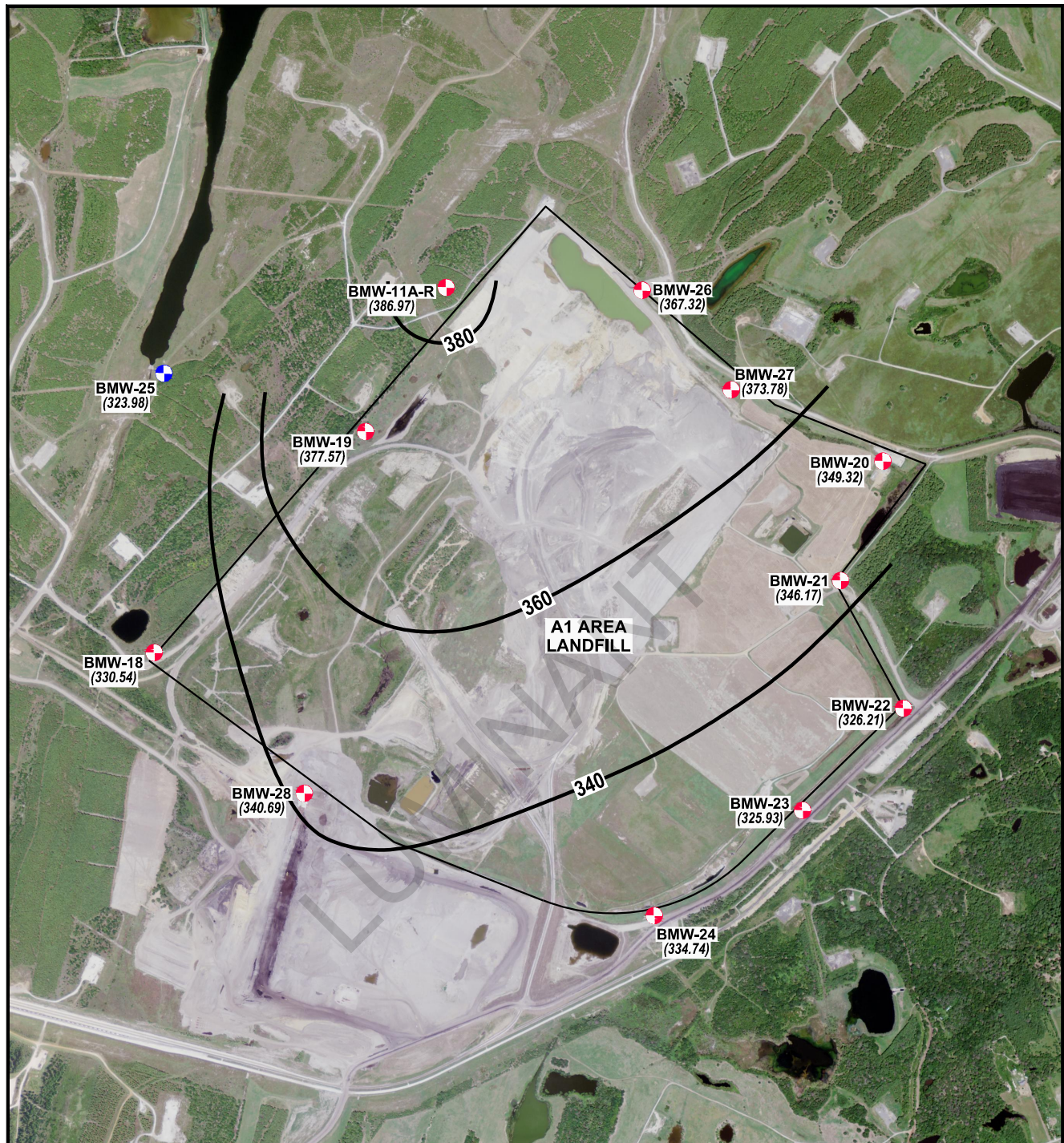
REVISIONS

DATE: SEPT., 2017

CHECKED: PJB

PASTOR, BEHLING & WHEELER, LLC
CONSULTING ENGINEERS AND SCIENTISTS

SOURCE:
Imagery from www.tnris.gov, Rusk County, aerial photographs, 2012.



EXPLANATION

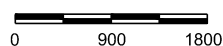
-  CCR Monitoring Well Location
-  Non-CCR Monitoring Well Used to Further Evaluate Groundwater Flow Direction

(358.02) Groundwater Potentiometric Surface (ft. MSL)

— 360 — Groundwater Potentiometric Surface Contour (C.I. = 20 ft.)



Scale in Feet



SOURCE:

Imagery from www.tnris.gov, Rusk County, aerial photographs, 2012.

MARTIN LAKE STEAM ELECTRIC STATION TATUM, TEXAS

Figure 3

A1 AREA LANDFILL GROUNDWATER POTENTIOMETRIC SURFACE MAP SEPTEMBER 25, 2017

PROJECT: 5347C

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

LUMINANT



November 27, 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 -Beckville

Order No.: 1510228

Dear Will Vienne:

DHL Analytical, Inc. received 5 sample(s) on 10/24/2015 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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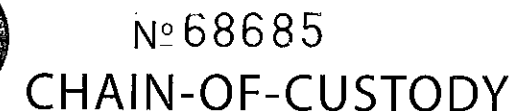
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AnalyticalQCSummaryReport 1510228 18

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DATE: 10-23-15 PAGE 1 OF 1
PO #: 5164-B DHL WORK ORDER #: 1510228
PROJECT LOCATION OR NAME: LUMINANT- BECKVILLE
CLIENT PROJECT #: 5164-B COLLECTOR: J. BRANTON

[illegible]

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

2201 DOUBLE CREEK DR STE 4004
ROUND ROCK, TX 786643843
UNITED STATES US

BILL SENDER

TO DHL ANALYTICAL

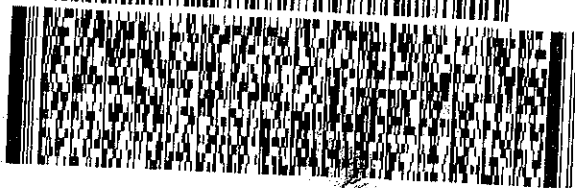
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222

REF:

DEPT:



FedEx
Express



TRK# 8086 3023 8961
0200

**SATURDAY 12:00P
PRIORITY OVERNIGHT**

XO BSMA

78664
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 10/24/2015

Work Order Number 1510228

Received by MB

Checklist completed by:

Signature

10/26/2015

Date

Reviewed by

Initials

10/26/2015

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 ☐ 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 MO

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 -Beckville
Lab Order: 1510228

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 10/24/15. A total of 5 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 11/3/15 the matrix spike and matrix spike duplicate recoveries were out of control limits for Antimony and/or Calcium. In addition, the matrix spike and matrix spike duplicate had the RPD above control limits for Antimony. 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 11/3/15 CCV3-151103 and LCVL3-151103 were above control limits for Boron and Calcium. This was due to sample carryover. The affected samples were the matrix spike and matrix spike duplicate. No further corrective actions were taken.

MERCURY ANALYSIS

For Mercury analysis performed on 10/29/15 the PDS recovery was slightly below control limits. This is flagged accordingly in the QC summary report. The serial dilution was within control limits. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: Luminant -Beckville
Lab Order: 1510228**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1510228-01	BMW-22		10/23/15 08:30 AM	10/24/2015
1510228-02	BMW-23		10/23/15 09:20 AM	10/24/2015
1510228-03	BMW-24		10/23/15 10:10 AM	10/24/2015
1510228-04	BMW-20		10/23/15 11:00 AM	10/24/2015
1510228-05	BMW-21		10/23/15 11:50 AM	10/24/2015

LUMINANT

Lab Order: 1510228
Client: Pastor, Behling & Wheeler
Project: Luminant -Beckville

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1510228-01A	BMW-22	10/23/15 08:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-22	10/23/15 08:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-22	10/23/15 08:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/28/15 11:22 AM	72064
1510228-01D	BMW-22	10/23/15 08:30 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-22	10/23/15 08:30 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-22	10/23/15 08:30 AM	Aqueous	M4500-H+ B	pH Preparation	10/26/15 10:43 AM	72020
	BMW-22	10/23/15 08:30 AM	Aqueous	M2540C	TDS Preparation	10/29/15 09:51 AM	72083
1510228-02A	BMW-23	10/23/15 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-23	10/23/15 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-23	10/23/15 09:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/28/15 11:22 AM	72064
1510228-02D	BMW-23	10/23/15 09:20 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-23	10/23/15 09:20 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-23	10/23/15 09:20 AM	Aqueous	M4500-H+ B	pH Preparation	10/26/15 10:43 AM	72020
	BMW-23	10/23/15 09:20 AM	Aqueous	M2540C	TDS Preparation	10/29/15 09:51 AM	72083
1510228-03A	BMW-24	10/23/15 10:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-24	10/23/15 10:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-24	10/23/15 10:10 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/28/15 11:22 AM	72064
1510228-03D	BMW-24	10/23/15 10:10 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-24	10/23/15 10:10 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-24	10/23/15 10:10 AM	Aqueous	M4500-H+ B	pH Preparation	10/26/15 10:43 AM	72020
	BMW-24	10/23/15 10:10 AM	Aqueous	M2540C	TDS Preparation	10/29/15 09:51 AM	72083
1510228-04A	BMW-20	10/23/15 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-20	10/23/15 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-20	10/23/15 11:00 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/28/15 11:22 AM	72064
1510228-04D	BMW-20	10/23/15 11:00 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-20	10/23/15 11:00 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-20	10/23/15 11:00 AM	Aqueous	M4500-H+ B	pH Preparation	10/26/15 10:43 AM	72020
	BMW-20	10/23/15 11:00 AM	Aqueous	M2540C	TDS Preparation	10/29/15 09:51 AM	72083

Lab Order: 1510228
Client: Pastor, Behling & Wheeler
Project: Luminant -Beckville

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1510228-05A	BMW-21	10/23/15 11:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-21	10/23/15 11:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/28/15 08:56 AM	72050
	BMW-21	10/23/15 11:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	10/28/15 11:22 AM	72064
1510228-05D	BMW-21	10/23/15 11:50 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-21	10/23/15 11:50 AM	Aqueous	E300	Anion Preparation	10/30/15 11:19 AM	72099
	BMW-21	10/23/15 11:50 AM	Aqueous	M4500-H+ B	pH Preparation	10/26/15 10:43 AM	72020
	BMW-21	10/23/15 11:50 AM	Aqueous	M2540C	TDS Preparation	10/29/15 09:51 AM	72083

Lab Order: 1510228
Client: Pastor, Behling & Wheeler
Project: Luminant -Beckville

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1510228-01A	BMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	72064	1	10/29/15 02:23 PM	CETAC2_HG_151029 B
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	10	11/03/15 12:42 PM	ICP-MS3_151103A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	1	11/03/15 03:49 PM	ICP-MS3_151103A
1510228-01D	BMW-22	Aqueous	E300	Anions by IC method - Water	72099	1	10/30/15 12:39 PM	IC2_151030B
	BMW-22	Aqueous	E300	Anions by IC method - Water	72099	100	10/30/15 01:59 PM	IC2_151030B
	BMW-22	Aqueous	M4500-H+ B	pH	72020	1	10/26/15 11:26 AM	TITRATOR_151026A
	BMW-22	Aqueous	M2540C	Total Dissolved Solids	72083	1	10/30/15 08:30 AM	WC_151029C
1510228-02A	BMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	72064	1	10/29/15 02:25 PM	CETAC2_HG_151029 B
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	10	11/03/15 12:48 PM	ICP-MS3_151103A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	1	11/03/15 03:55 PM	ICP-MS3_151103A
1510228-02D	BMW-23	Aqueous	E300	Anions by IC method - Water	72099	1	10/30/15 12:54 PM	IC2_151030B
	BMW-23	Aqueous	E300	Anions by IC method - Water	72099	100	10/30/15 02:14 PM	IC2_151030B
	BMW-23	Aqueous	M4500-H+ B	pH	72020	1	10/26/15 11:28 AM	TITRATOR_151026A
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	72083	1	10/30/15 08:30 AM	WC_151029C
1510228-03A	BMW-24	Aqueous	SW7470A	Mercury Total: Aqueous	72064	1	10/29/15 02:28 PM	CETAC2_HG_151029 B
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	1	11/03/15 04:01 PM	ICP-MS3_151103A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	5	11/03/15 12:54 PM	ICP-MS3_151103A
1510228-03D	BMW-24	Aqueous	E300	Anions by IC method - Water	72099	1	10/30/15 01:12 PM	IC2_151030B
	BMW-24	Aqueous	E300	Anions by IC method - Water	72099	100	10/30/15 02:28 PM	IC2_151030B
	BMW-24	Aqueous	M4500-H+ B	pH	72020	1	10/26/15 11:29 AM	TITRATOR_151026A
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	72083	1	10/30/15 08:30 AM	WC_151029C
1510228-04A	BMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	72064	1	10/29/15 02:30 PM	CETAC2_HG_151029 B
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	1	11/03/15 02:06 PM	ICP-MS3_151103A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	5	11/03/15 02:18 PM	ICP-MS3_151103A
1510228-04D	BMW-20	Aqueous	E300	Anions by IC method - Water	72099	10	10/30/15 02:43 PM	IC2_151030B
	BMW-20	Aqueous	E300	Anions by IC method - Water	72099	1	10/30/15 01:27 PM	IC2_151030B

Lab Order: 1510228
Client: Pastor, Behling & Wheeler
Project: Luminant -Beckville

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1510228-04D	BMW-20	Aqueous	M4500-H+ B	pH	72020	1	10/26/15 11:30 AM	TITRATOR_151026A
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	72083	1	10/30/15 08:30 AM	WC_151029C
1510228-05A	BMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	72064	1	10/29/15 02:32 PM	CETAC2_HG_151029 B
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	1	11/03/15 02:12 PM	ICP-MS3_151103A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72050	10	11/03/15 02:24 PM	ICP-MS3_151103A
1510228-05D	BMW-21	Aqueous	E300	Anions by IC method - Water	72099	1	10/30/15 01:41 PM	IC2_151030B
	BMW-21	Aqueous	E300	Anions by IC method - Water	72099	100	10/30/15 02:57 PM	IC2_151030B
	BMW-21	Aqueous	M4500-H+ B	pH	72020	1	10/26/15 11:33 AM	TITRATOR_151026A
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	72083	1	10/30/15 08:30 AM	WC_151029C

DHL Analytical, Inc.

Date: 27-Nov-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant -Beckville
Project No: 5164-B
Lab Order: 1510228

Client Sample ID: BMW-22
Lab ID: 1510228-01
Collection Date: 10/23/15 08:30 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
		SW7470A				Analyst: ABO	
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/29/15 02:23 PM
TRACE METALS: ICP-MS - WATER							
		SW6020A				Analyst: SW	
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/03/15 03:49 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 03:49 PM
Barium	0.106	0.00300	0.0100		mg/L	1	11/03/15 03:49 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 03:49 PM
Boron	2.76	0.100	0.300		mg/L	10	11/03/15 12:42 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 03:49 PM
Calcium	209	1.00	3.00		mg/L	10	11/03/15 12:42 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 03:49 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/03/15 03:49 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 03:49 PM
Lithium	0.0675	0.00500	0.0100		mg/L	1	11/03/15 03:49 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 03:49 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 03:49 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/03/15 03:49 PM
ANIONS BY IC METHOD - WATER							
		E300				Analyst: AV	
Chloride	377	30.0	100		mg/L	100	10/30/15 01:59 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/30/15 12:39 PM
Sulfate	927	100	300		mg/L	100	10/30/15 01:59 PM
PH							
		M4500-H+ B				Analyst: LM	
pH	6.76	0	0		pH Units@16.7°C	1	10/26/15 11:26 AM
TOTAL DISSOLVED SOLIDS							
		M2540C				Analyst: BJT	
Total Dissolved Solids (Residue, Filterable)	2720	50.0	50.0		mg/L	1	10/30/15 08:30 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: 27-Nov-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant -Beckville
Project No: 5164-B
Lab Order: 1510228

Client Sample ID: BMW-23
Lab ID: 1510228-02
Collection Date: 10/23/15 09:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/29/15 02:25 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: SW			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/03/15 03:55 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 03:55 PM
Barium	0.0519	0.00300	0.0100		mg/L	1	11/03/15 03:55 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 03:55 PM
Boron	1.19	0.100	0.300		mg/L	10	11/03/15 12:48 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 03:55 PM
Calcium	102	1.00	3.00		mg/L	10	11/03/15 12:48 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 03:55 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/03/15 03:55 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 03:55 PM
Lithium	0.0802	0.00500	0.0100		mg/L	1	11/03/15 03:55 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 03:55 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 03:55 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/03/15 03:55 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	287	30.0	100		mg/L	100	10/30/15 02:14 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/30/15 12:54 PM
Sulfate	577	100	300		mg/L	100	10/30/15 02:14 PM
PH		M4500-H+ B		Analyst: LM			
pH	6.64	0	0		pH Units@16.3°C	1	10/26/15 11:28 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	1980	50.0	50.0		mg/L	1	10/30/15 08:30 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: 27-Nov-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant -Beckville
Project No: 5164-B
Lab Order: 1510228

Client Sample ID: BMW-24
Lab ID: 1510228-03
Collection Date: 10/23/15 10:10 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/29/15 02:28 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: SW			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/03/15 04:01 PM
Arsenic	0.00494	0.00200	0.00500	J	mg/L	1	11/03/15 04:01 PM
Barium	1.87	0.00300	0.0100		mg/L	1	11/03/15 04:01 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 04:01 PM
Boron	0.144	0.0500	0.150	J	mg/L	5	11/03/15 12:54 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 04:01 PM
Calcium	61.6	0.500	1.50		mg/L	5	11/03/15 12:54 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 04:01 PM
Cobalt	0.00802	0.00300	0.00500		mg/L	1	11/03/15 04:01 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 04:01 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	11/03/15 04:01 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 04:01 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 04:01 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/03/15 04:01 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	633	30.0	100		mg/L	100	10/30/15 02:28 PM
Fluoride	0.247	0.100	0.400	J	mg/L	1	10/30/15 01:12 PM
Sulfate	44.8	1.00	3.00		mg/L	1	10/30/15 01:12 PM
PH							
M4500-H+ B				Analyst: LM			
pH	6.49	0	0		pH Units@16.7°C	1	10/26/15 11:29 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	1510	50.0	50.0		mg/L	1	10/30/15 08:30 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: 27-Nov-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant -Beckville
Project No: 5164-B
Lab Order: 1510228

Client Sample ID: BMW-20
Lab ID: 1510228-04
Collection Date: 10/23/15 11:00 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/29/15 02:30 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: SW			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/03/15 02:06 PM
Arsenic	0.00236	0.00200	0.00500	J	mg/L	1	11/03/15 02:06 PM
Barium	0.0778	0.00300	0.0100		mg/L	1	11/03/15 02:06 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 02:06 PM
Boron	0.139	0.0500	0.150	J	mg/L	5	11/03/15 02:18 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 02:06 PM
Calcium	71.2	0.500	1.50		mg/L	5	11/03/15 02:18 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 02:06 PM
Cobalt	0.0256	0.00300	0.00500		mg/L	1	11/03/15 02:06 PM
Lead	0.000501	0.000300	0.00100	J	mg/L	1	11/03/15 02:06 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	11/03/15 02:06 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 02:06 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 02:06 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/03/15 02:06 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	64.8	3.00	10.0		mg/L	10	10/30/15 02:43 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/30/15 01:27 PM
Sulfate	223	10.0	30.0		mg/L	10	10/30/15 02:43 PM
PH		M4500-H+ B		Analyst: LM			
pH	5.96	0	0		pH Units@16.5°C	1	10/26/15 11:30 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	804	10.0	10.0		mg/L	1	10/30/15 08:30 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: 27-Nov-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant -Beckville
Project No: 5164-B
Lab Order: 1510228

Client Sample ID: BMW-21
Lab ID: 1510228-05
Collection Date: 10/23/15 11:50 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	10/29/15 02:32 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: SW			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/03/15 02:12 PM
Arsenic	0.00324	0.00200	0.00500	J	mg/L	1	11/03/15 02:12 PM
Barium	0.0703	0.00300	0.0100		mg/L	1	11/03/15 02:12 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 02:12 PM
Boron	0.973	0.100	0.300		mg/L	10	11/03/15 02:24 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 02:12 PM
Calcium	157	1.00	3.00		mg/L	10	11/03/15 02:24 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 02:12 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/03/15 02:12 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/03/15 02:12 PM
Lithium	0.0623	0.00500	0.0100		mg/L	1	11/03/15 02:12 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 02:12 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/03/15 02:12 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/03/15 02:12 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	496	30.0	100		mg/L	100	10/30/15 02:57 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/30/15 01:41 PM
Sulfate	484	100	300		mg/L	100	10/30/15 02:57 PM
PH		M4500-H+ B		Analyst: LM			
pH	7.24	0	0		pH Units@17.3°C	1	10/26/15 11:33 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	2510	50.0	50.0		mg/L	1	10/30/15 08:30 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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT**RunID: CETAC2_HG_151029B**

The QC data in batch 72064 applies to the following samples: 1510228-01A, 1510228-02A, 1510228-03A, 1510228-04A, 1510228-05A

Sample ID	MB-72064		Batch ID:	72064		TestNo:	SW7470A		Units:	mg/L	
SampType:	MBLK		Run ID:	CETAC2_HG_151029B		Analysis Date:	10/29/2015 1:31:41 PM		Prep Date:	10/28/2015	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-72064			Batch ID:	72064		TestNo:	SW7470A		Units:	mg/L		
SampType:	LCS			Run ID:	CETAC2_HG_151029B		Analysis Date:	10/29/2015 1:33:59 PM		Prep Date:	10/28/2015		
Analyte	Result			RL	SPK value		Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00222 0.000200 0.00200 0 111 85 115

Sample ID	LCSD-72064	Batch ID:	72064	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCSD	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 1:36:16 PM	Prep Date:	10/28/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00202 0.000200 0.00200 0 101 85 115 9.43 15

Sample ID	1510154-01A SD	Batch ID:	72064	TestNo:	SW7470A	Units:	mg/L				
SampType:	SD	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 1:40:52 PM	Prep Date:	10/28/2015				
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	1510154-01A PDS	Batch ID:	72064	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 1:43:10 PM	Prep Date:	10/28/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00190 0.000200 0.00250 0 76.0 85 115 S

Sample ID	1510154-01A MS	Batch ID:	72064	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 1:45:28 PM	Prep Date:	10/28/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00170 0.000200 0.00200 0 85.0 80 120

Sample ID	1510154-01A MSD	Batch ID:	72064	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 1:47:46 PM	Prep Date:	10/28/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00182 0.000200 0.00200 0 91.0 80 120 6.82 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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_151029B

Sample ID	ICV-151029	Batch ID:	R82414	TestNo:	SW7470A	Units:	mg/L			
SampType:	ICV	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 11:25:42 A	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00406	0.000200	0.00400	0	102	90	110			

Sample ID	CCV3-151029	Batch ID:	R82414	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 1:24:47 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	90	110			

Sample ID	CCV4-151029	Batch ID:	R82414	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 2:12:20 PM	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			

Sample ID	CCV5-151029	Batch ID:	R82414	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_151029B	Analysis Date:	10/29/2015 2:35:04 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00203	0.000200	0.00200	0	102	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151103A

The QC data in batch 72050 applies to the following samples: 1510228-01A, 1510228-02A, 1510228-03A, 1510228-04A, 1510228-05A

Sample ID MB-72050	Batch ID: 72050	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS3_151103A	Analysis Date: 11/3/2015 11:29:00 AM	Prep Date: 10/28/2015

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 LCS-72050	Batch ID: 72050	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS3_151103A	Analysis Date: 11/3/2015 11:35:00 AM	Prep Date: 10/28/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.181	0.00250	0.200	0	90.4	80	120			
Arsenic	0.199	0.00500	0.200	0	99.4	80	120			
Barium	0.193	0.0100	0.200	0	96.6	80	120			
Beryllium	0.202	0.00100	0.200	0	101	80	120			
Boron	0.182	0.0300	0.200	0	91.0	80	120			
Cadmium	0.189	0.00100	0.200	0	94.6	80	120			
Calcium	4.80	0.300	5.00	0	96.0	80	120			
Chromium	0.197	0.00500	0.200	0	98.6	80	120			
Cobalt	0.194	0.00500	0.200	0	97.2	80	120			
Lead	0.191	0.00100	0.200	0	95.7	80	120			
Lithium	0.185	0.0100	0.200	0	92.6	80	120			
Molybdenum	0.179	0.00500	0.200	0	89.3	80	120			
Selenium	0.200	0.00500	0.200	0	100	80	120			
Thallium	0.205	0.00150	0.200	0	102	80	120			

Sample ID LCSD-72050	Batch ID: 72050	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS3_151103A	Analysis Date: 11/3/2015 11:41:00 AM	Prep Date: 10/28/2015

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.178	0.00250	0.200	0	89.0	80	120	1.50	15	
Arsenic	0.195	0.00500	0.200	0	97.6	80	120	1.93	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151103A

Sample ID	LCSD-72050	Batch ID:	72050	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 11:41:00 AM	Prep Date:	10/28/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.186	0.0100	0.200	0	93.2	80	120	3.53	15
Beryllium	0.199	0.00100	0.200	0	99.5	80	120	1.45	15
Boron	0.181	0.0300	0.200	0	90.6	80	120	0.386	15
Cadmium	0.186	0.00100	0.200	0	93.2	80	120	1.49	15
Calcium	4.64	0.300	5.00	0	92.8	80	120	3.43	15
Chromium	0.192	0.00500	0.200	0	96.2	80	120	2.57	15
Cobalt	0.193	0.00500	0.200	0	96.4	80	120	0.826	15
Lead	0.187	0.00100	0.200	0	93.4	80	120	2.38	15
Lithium	0.186	0.0100	0.200	0	93.0	80	120	0.485	15
Molybdenum	0.175	0.00500	0.200	0	87.4	80	120	2.09	15
Selenium	0.197	0.00500	0.200	0	98.6	80	120	1.61	15
Thallium	0.195	0.00150	0.200	0	97.3	80	120	5.06	15

Sample ID	1510154-01A SD		Batch ID:	72050		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD		Run ID:	ICP-MS3_151103A		Analysis Date:	11/3/2015 11:59:00 AM		Prep Date:	10/28/2015	
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	0.0922				0	10
Beryllium	<0.0150	0.0500	0	0				0	10
Boron	2.21	1.50	0	2.38				7.21	10
Cadmium	<0.0150	0.0500	0	0				0	10
Calcium	124	15.0	0	124				0.565	10
Chromium	<0.100	0.250	0	0				0	10
Cobalt	<0.150	0.250	0	0.134				0	10
Lead	<0.0150	0.0500	0	0				0	10
Lithium	<0.250	0.500	0	0				0	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	1510154-01A PDS			Batch ID:	72050		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS3_151103A		Analysis Date:	11/3/2015 1:24:00 PM		Prep Date:	10/28/2015	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	2.15	0.0250	2.00	0	107	80	120		
Arsenic	2.05	0.0500	2.00	0	103	80	120		
Barium	2.01	0.100	2.00	0.0922	95.7	80	120		
Beryllium	2.10	0.0100	2.00	0	105	80	120		
Boron	4.32	0.300	2.00	2.38	97.1	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151103A

Sample ID	1510154-01A PDS	Batch ID:	72050	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 1:24:00 PM	Prep Date:	10/28/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Cadmium	1.93	0.0100	2.00	0	96.5	80	120			
Calcium	169	3.00	50.0	124	89.8	80	120			
Chromium	2.03	0.0500	2.00	0	102	80	120			
Cobalt	2.12	0.0500	2.00	0.134	99.0	80	120			
Lead	2.00	0.0100	2.00	0	100	80	120			
Lithium	1.90	0.100	2.00	0	95.2	80	120			
Molybdenum	1.83	0.0500	2.00	0	91.4	80	120			
Selenium	2.05	0.0500	2.00	0	102	80	120			
Thallium	2.05	0.0150	2.00	0	103	80	120			

Sample ID	1510154-01A MS	Batch ID:	72050	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 4:07:00 PM	Prep Date:	10/28/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.191	0.00250	0.200	0	95.3	80	120			
Arsenic	0.224	0.00500	0.200	0.0156	104	80	120			
Barium	0.303	0.0100	0.200	0.0960	103	80	120			
Beryllium	0.189	0.00100	0.200	0	94.7	80	120			
Boron	2.48	0.0300	0.200	2.28	99.0	80	120			
Cadmium	0.193	0.00100	0.200	0	96.4	80	120			
Calcium	136	0.300	5.00	122	280	80	120			S
Chromium	0.193	0.00500	0.200	0	96.6	80	120			
Cobalt	0.331	0.00500	0.200	0.128	102	80	120			
Lead	0.196	0.00100	0.200	0	98.0	80	120			
Lithium	0.177	0.0100	0.200	0.00740	85.0	80	120			
Molybdenum	0.196	0.00500	0.200	0.00301	96.6	80	120			
Selenium	0.207	0.00500	0.200	0	103	80	120			
Thallium	0.208	0.00150	0.200	0	104	80	120			

Sample ID	1510154-01A MSD	Batch ID:	72050	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 4:13:00 PM	Prep Date:	10/28/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.136	0.00250	0.200	0	68.0	80	120	33.5	15	SR
Arsenic	0.223	0.00500	0.200	0.0156	104	80	120	0.268	15	
Barium	0.297	0.0100	0.200	0.0960	100	80	120	2.13	15	
Beryllium	0.188	0.00100	0.200	0	94.2	80	120	0.476	15	
Boron	2.45	0.0300	0.200	2.28	83.0	80	120	1.30	15	
Cadmium	0.193	0.00100	0.200	0	96.6	80	120	0.311	15	
Calcium	136	0.300	5.00	122	280	80	120	0	15	S
Chromium	0.196	0.00500	0.200	0	98.1	80	120	1.49	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151103A

Sample ID	1510154-01A MSD	Batch ID:	72050	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 4:13:00 PM	Prep Date:	10/28/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	0.334	0.00500	0.200	0.128	103	80	120	0.662	15	
Lead	0.195	0.00100	0.200	0	97.6	80	120	0.409	15	
Lithium	0.174	0.0100	0.200	0.00740	83.5	80	120	1.65	15	
Molybdenum	0.200	0.00500	0.200	0.00301	98.2	80	120	1.67	15	
Selenium	0.206	0.00500	0.200	0	103	80	120	0.194	15	
Thallium	0.208	0.00150	0.200	0	104	80	120	0.048	15	

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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151103A

Sample ID	ICV1-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 11:04:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.0976	0.00250	0.100	0	97.6	90	110			
Arsenic	0.101	0.00500	0.100	0	101	90	110			
Barium	0.101	0.0100	0.100	0	101	90	110			
Beryllium	0.103	0.00100	0.100	0	103	90	110			
Boron	0.0900	0.0300	0.100	0	90.0	90	110			
Cadmium	0.100	0.00100	0.100	0	100	90	110			
Calcium	2.35	0.300	2.50	0	93.8	90	110			
Chromium	0.109	0.00500	0.100	0	109	90	110			
Cobalt	0.106	0.00500	0.100	0	106	90	110			
Lead	0.103	0.00100	0.100	0	103	90	110			
Lithium	0.0911	0.0100	0.100	0	91.1	90	110			
Molybdenum	0.0932	0.00500	0.100	0	93.2	90	110			
Selenium	0.0981	0.00500	0.100	0	98.1	90	110			
Thallium	0.0999	0.00150	0.100	0	99.9	90	110			

Sample ID	ILCVL-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 11:16:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00197	0.00250	0.00200	0	98.7	70	130			
Arsenic	0.00540	0.00500	0.00500	0	108	70	130			
Barium	0.00528	0.0100	0.00500	0	106	70	130			
Beryllium	0.00111	0.00100	0.00100	0	111	70	130			
Boron	0.0179	0.0300	0.0200	0	89.4	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	0.00559	0.00500	0.00500	0	112	70	130			
Cobalt	0.00546	0.00500	0.00500	0	109	70	130			
Lead	0.00113	0.00100	0.00100	0	113	70	130			
Lithium	0.00920	0.0100	0.0100	0	92.0	70	130			
Molybdenum	0.00494	0.00500	0.00500	0	98.9	70	130			
Selenium	0.00604	0.00500	0.00500	0	121	70	130			
Thallium	0.00111	0.00150	0.00100	0	111	70	130			

Sample ID	CCV1-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 1:30:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.201	0.00250	0.200	0	101	90	110			
Arsenic	0.214	0.00500	0.200	0	107	90	110			
Barium	0.204	0.0100	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151103A

Sample ID	CCV1-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 1:30:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.218	0.00100	0.200	0	109	90	110			
Boron	0.204	0.0300	0.200	0	102	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Calcium	5.43	0.300	5.00	0	109	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	0.204	0.00100	0.200	0	102	90	110			
Lithium	0.198	0.0100	0.200	0	99.2	90	110			
Molybdenum	0.198	0.00500	0.200	0	98.8	90	110			
Selenium	0.217	0.00500	0.200	0	109	90	110			
Thallium	0.211	0.00150	0.200	0	106	90	110			

Sample ID	LCVL1-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 1:54:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00193	0.00250	0.00200	0	96.5	70	130			
Arsenic	0.00532	0.00500	0.00500	0	106	70	130			
Barium	0.00520	0.0100	0.00500	0	104	70	130			
Beryllium	0.00112	0.00100	0.00100	0	112	70	130			
Boron	0.0193	0.0300	0.0200	0	96.6	70	130			
Cadmium	0.000985	0.00100	0.00100	0	98.5	70	130			
Calcium	0.0999	0.300	0.100	0	99.9	70	130			
Chromium	0.00526	0.00500	0.00500	0	105	70	130			
Cobalt	0.00525	0.00500	0.00500	0	105	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			
Lithium	0.0105	0.0100	0.0100	0	104	70	130			
Molybdenum	0.00479	0.00500	0.00500	0	95.8	70	130			
Selenium	0.00541	0.00500	0.00500	0	108	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID	CCV2-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 2:30:00 PM	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	0.209	0.00500	0.200	0	104	90	110			
Barium	0.197	0.0100	0.200	0	98.4	90	110			
Beryllium	0.210	0.00100	0.200	0	105	90	110			
Boron	0.194	0.0300	0.200	0	97.1	90	110			
Cadmium	0.198	0.00100	0.200	0	98.8	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151103A

Sample ID	CCV2-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 2:30:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	5.36	0.300	5.00	0	107	90	110			
Chromium	0.200	0.00500	0.200	0	100	90	110			
Cobalt	0.203	0.00500	0.200	0	102	90	110			
Lead	0.201	0.00100	0.200	0	100	90	110			
Lithium	0.193	0.0100	0.200	0	96.4	90	110			
Molybdenum	0.191	0.00500	0.200	0	95.5	90	110			
Selenium	0.215	0.00500	0.200	0	107	90	110			
Thallium	0.211	0.00150	0.200	0	105	90	110			

Sample ID	LCVL2-151103		Batch ID:	R82492		TestNo:	SW6020A		Units:	mg/L		
SampType:	LCVL		Run ID:	ICP-MS3_151103A		Analysis Date:	11/3/2015 2:49:00 PM		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	0.00535	0.00500	0.00500	0	107	70	130			
Barium	0.00495	0.0100	0.00500	0	99.0	70	130			
Beryllium	0.00106	0.00100	0.00100	0	106	70	130			
Boron	0.0195	0.0300	0.0200	0	97.6	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.108	0.300	0.100	0	108	70	130			
Chromium	0.00509	0.00500	0.00500	0	102	70	130			
Cobalt	0.00520	0.00500	0.00500	0	104	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.00999	0.0100	0.0100	0	99.9	70	130			
Molybdenum	0.00470	0.00500	0.00500	0	94.0	70	130			
Selenium	0.00584	0.00500	0.00500	0	117	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV3-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 4:19:00 PM	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	0.216	0.00500	0.200	0	108	90	110			
Barium	0.202	0.0100	0.200	0	101	90	110			
Beryllium	0.205	0.00100	0.200	0	102	90	110			
Boron	0.242	0.0300	0.200	0	121	90	110			S
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Calcium	5.64	0.300	5.00	0	113	90	110			S
Chromium	0.211	0.00500	0.200	0	105	90	110			
Cobalt	0.211	0.00500	0.200	0	106	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151103A

Sample ID	CCV3-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 4:19:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	0.203	0.00100	0.200	0	102	90	110			
Lithium	0.182	0.0100	0.200	0	91.2	90	110			
Molybdenum	0.196	0.00500	0.200	0	98.2	90	110			
Selenium	0.216	0.00500	0.200	0	108	90	110			
Thallium	0.214	0.00150	0.200	0	107	90	110			

Sample ID	LCVL3-151103	Batch ID:	R82492	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS3_151103A	Analysis Date:	11/3/2015 4:55:00 PM	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	0.00551	0.00500	0.00500	0	110	70	130			
Barium	0.00535	0.0100	0.00500	0	107	70	130			
Beryllium	0.00112	0.00100	0.00100	0	112	70	130			
Boron	0.0309	0.0300	0.0200	0	154	70	130			S
Cadmium	0.00103	0.00100	0.00100	0	103	70	130			
Calcium	0.144	0.300	0.100	0	144	70	130			S
Chromium	0.00538	0.00500	0.00500	0	108	70	130			
Cobalt	0.00549	0.00500	0.00500	0	110	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			
Molybdenum	0.00514	0.00500	0.00500	0	103	70	130			
Selenium	0.00548	0.00500	0.00500	0	110	70	130			
Thallium	0.00105	0.00150	0.00100	0	105	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_151030B

The QC data in batch 72099 applies to the following samples: 1510228-01D, 1510228-02D, 1510228-03D, 1510228-04D, 1510228-05D

Sample ID	MB-72099	Batch ID:	72099	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC2_151030B	Analysis Date:	10/30/2015 11:54:38 A	Prep Date:	10/30/2015			
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	LCS-72099	Batch ID:	72099	TestNo:	E300	Units:	mg/L			
SampType:	LCS	Run ID:	IC2_151030B	Analysis Date:	10/30/2015 12:09:13 P	Prep Date:	10/30/2015			
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	4.01	0.400	4.000	0	100	90	110			
Sulfate	31.2	3.00	30.00	0	104	90	110			

Sample ID	LCSD-72099	Batch ID:	72099	TestNo:	E300	Units:	mg/L			
SampType:	LCSD	Run ID:	IC2_151030B	Analysis Date:	10/30/2015 12:23:47 P	Prep Date:	10/30/2015			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Chloride	9.92	1.00	10.00	0	99.2	90	110	2.44	20	
Fluoride	3.97	0.400	4.000	0	99.2	90	110	0.972	20	
Sulfate	31.0	3.00	30.00	0	103	90	110	0.927	20	

Sample ID	1510228-02DMS	Batch ID:	72099	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_151030B	Analysis Date:	10/30/2015 3:16:00 PM	Prep Date:	10/30/2015			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Chloride	2380	100	2000	287.2	105	90	110			
Fluoride	2040	40.0	2000	0	102	90	110			
Sulfate	2720	300	2000	577.5	107	90	110			

Sample ID	1510228-02DMSD	Batch ID:	72099	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC2_151030B	Analysis Date:	10/30/2015 3:30:35 PM	Prep Date:	10/30/2015			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Chloride	2370	100	2000	287.2	104	90	110	0.511	20	
Fluoride	2050	40.0	2000	0	103	90	110	0.736	20	
Sulfate	2740	300	2000	577.5	108	90	110	0.759	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_151030B

Sample ID	ICV-151030	Batch ID:	R82439	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_151030B	Analysis Date:	10/30/2015 9:14:16 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.3	1.00	25.00	0	97.0	90	110			
Fluoride	9.61	0.400	10.00	0	96.1	90	110			
Sulfate	76.1	3.00	75.00	0	101	90	110			

Sample ID	CCV1-151030	Batch ID:	R82439	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_151030B	Analysis Date:	10/30/2015 11:17:45 A	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.90	1.00	10.00	0	99.0	90	110			
Fluoride	3.86	0.400	4.000	0	96.5	90	110			
Sulfate	30.7	3.00	30.00	0	102	90	110			

Sample ID	CCV2-151030	Batch ID:	R82439	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_151030B	Analysis Date:	10/30/2015 3:45:09 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.97	1.00	10.00	0	99.7	90	110			
Fluoride	4.03	0.400	4.000	0	101	90	110			
Sulfate	31.2	3.00	30.00	0	104	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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_151026A

The QC data in batch 72020 applies to the following samples: 1510228-01D, 1510228-02D, 1510228-03D, 1510228-04D, 1510228-05D

Sample ID	1510228-05D DUP	Batch ID:	72020	TestNo:	M4500-H+ B	Units:	pH Units@17.2°C
SampType:	DUP	Run ID:	TITRATOR_151026A	Analysis Date:	10/26/2015 11:35:00 A	Prep Date:	10/26/2015
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		7.20	0	0	7.240		0.554 5

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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_151026A

Sample ID	ICV-151026			Batch ID:	R82372		TestNo:	M4500-H+ B		Units:	pH Units@22°C	
SampType:	ICV			Run ID:	TITRATOR_151026A		Analysis Date:	10/26/2015 11:19:00 A		Prep Date:	10/26/2015	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

pH	9.97	0	10.00	0	99.7	99	101			

Sample ID	CCV1-151026	Batch ID:	R82372	TestNo:	M4500-H+ B	Units:	pH Units@21.6°C				
SampType:	CCV	Run ID:	TITRATOR_151026A	Analysis Date:	10/26/2015 11:36:00 A	Prep Date:	10/26/2015				
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			

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: 1510228
Project: Luminant -Beckville

ANALYTICAL QC SUMMARY REPORT

RunID: WC_151029C

The QC data in batch 72083 applies to the following samples: 1510228-01D, 1510228-02D, 1510228-03D, 1510228-04D, 1510228-05D

Sample ID	MB-72083	Batch ID:	72083	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_151029C	Analysis Date:	10/30/2015 8:30:00 AM	Prep Date:	10/29/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-72083	Batch ID:	72083	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_151029C	Analysis Date:	10/30/2015 8:30:00 AM	Prep Date:	10/29/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 764 10.0 745.6 0 102 90 113

Sample ID	1510273-01D-DUP	Batch ID:	72083	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_151029C	Analysis Date:	10/30/2015 8:30:00 AM	Prep Date:	10/29/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 184 10.0 0 185.0 0.542 5

Sample ID	1510228-01D-DUP	Batch ID:	72083	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_151029C	Analysis Date:	10/30/2015 8:30:00 AM	Prep Date:	10/29/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 2710 50.0 0 2725 0.368 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



November 12, 2015

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

Re: Routine Analysis
Work Order: 384305
SDG: 1510228

Dear Mr. DuPont:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 29, 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

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: 1510228 GEL Work Order: 384305

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: November 12, 2015

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-22
Sample ID: 384305001
Matrix: Water
Collect Date: 23-OCT-15 08:30
Receive Date: 29-OCT-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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		2.11	+/-1.27	1.96	3.00	pCi/L		AXM6	11/11/15	1506	1519753	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.59	+/-0.435	0.401	1.00	pCi/L		CXP3	11/12/15	0615	1519135	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

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

Certificate of Analysis

Report Date: November 12, 2015

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-23
Sample ID: 384305002
Matrix: Water
Collect Date: 23-OCT-15 09:20
Receive Date: 29-OCT-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	1.65	+/-1.19	1.91	3.00	pCi/L		AXM6	11/11/15	1507	1519753	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.19	+/-0.366	0.363	1.00	pCi/L		CXP3	11/12/15	0615	1519135	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"			107	(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: November 12, 2015

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-24
Sample ID: 384305003
Matrix: Water
Collect Date: 23-OCT-15 10:10
Receive Date: 29-OCT-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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		3.32	+/-1.30	1.81	3.00	pCi/L		AXM6	11/11/15	1507	1519753	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.83	+/-0.448	0.383	1.00	pCi/L		CXP3	11/12/15	0700	1519135	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"						91.1	(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: November 12, 2015

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-20
Sample ID: 384305004
Matrix: Water
Collect Date: 23-OCT-15 11:00
Receive Date: 29-OCT-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	1.84	+/-1.20	1.89	3.00	pCi/L		AXM6	11/11/15	1507	1519753	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.18	+/-0.424	0.463	1.00	pCi/L		CXP3	11/12/15	0700	1519135	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"			103	(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: November 12, 2015

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-21
Sample ID: 384305005
Matrix: Water
Collect Date: 23-OCT-15 11:50
Receive Date: 29-OCT-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	0.843	+/-0.631	0.948	3.00	pCi/L		AXM6	11/11/15	1507	1519753	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226	U	0.297	+/-0.275	0.436	1.00	pCi/L		CXP3	11/12/15	0700	1519135	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"			93.5	(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

QC Summary

Report Date: November 12, 2015

Page 1 of 2

DHL Analytical
2300 Double Creek Drive
Round Rock, Texas

Contact: Mr. John DuPont

Workorder: 384305

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	1519753										
QC1203424141	383809004	DUP									
Radium-228		1.86	U	1.60	pCi/L	15		(0% - 100%)	AXM6	11/11/15	15:07
		Uncertainty	+/-1.07	+/-1.10							
QC1203424142	LCS										
Radium-228		29.4		30.9	pCi/L		105	(75%-125%)		11/11/15	15:09
		Uncertainty		+/-2.63							
QC1203424140	MB										
Radium-228			U	-0.132	pCi/L					11/11/15	15:07
		Uncertainty		+/-0.626							
Rad Ra-226											
Batch	1519135										
QC1203422475	384278001	DUP									
Radium-226		1.82		2.90	pCi/L	45.9*		(0%-20%)	CXP3	11/12/15	09:20
		Uncertainty	+/-0.484	+/-0.658							
QC1203422477	LCS										
Radium-226		24.4		23.3	pCi/L		95.7	(75%-125%)		11/12/15	10:00
		Uncertainty		+/-1.48							
QC1203422474	MB										
Radium-226			U	0.356	pCi/L					11/12/15	09:20
		Uncertainty		+/-0.289							
QC1203422476	384278001	MS									
Radium-226		122	1.82	122	pCi/L		98.2	(75%-125%)		11/12/15	09:20
		Uncertainty	+/-0.484	+/-7.46							

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: 384305

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, 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: 1510228

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

384305

Subcontractor:

GEL Laboratories

PO Box 30712

Charleston, SC 29417

TEL: (843) 556-8171

FAX:

Acct #:

26-Oct-15

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	276 228		Requested Tests			
					E903.1	E904.0				
BMW-22	Aqueous	-01B	10/23/15 08:30 AM	500HDPEHNO3		1				
BMW-22	Aqueous	-01C	10/23/15 08:30 AM	500HDPEHNO3	1					
BMW-23	Aqueous	-02B	10/23/15 09:20 AM	500HDPEHNO3		1				
BMW-23	Aqueous	-02C	10/23/15 09:20 AM	500HDPEHNO3	1					
BMW-24	Aqueous	-03B	10/23/15 10:10 AM	500HDPEHNO3		1				
BMW-24	Aqueous	-03C	10/23/15 10:10 AM	500HDPEHNO3	1					
BMW-2D	Aqueous	-04B	10/23/15 11:00 AM	500HDPEHNO3		1				
BMW-2D	Aqueous	-04C	10/23/15 11:00 AM	500HDPEHNO3	1					
BMW-21	Aqueous	-05B	10/23/15 11:50 AM	500HDPEHNO3		1				
BMW-21	Aqueous	-05C	10/23/15 11:50 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

Date/Time		Date/Time	
Relinquished by: <u>[Signature]</u>	10/26/15 1730	Received by: <u>[Signature]</u>	10/26/15 1730
Relinquished by:		Received by: <u>B. Luthman</u>	10/29/15 0900

SAMPLE RECEIPT & REVIEW FORM

Client: PHUA		SDG/AR/COC/Work Order: 304305
Received By: Brielle Luthman		Date Received: 10/29/15 0900
Suspected Hazard Information	Yes ☐ No ☒	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	☒	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0
Classified Radioactive II or III by RSO?	☒	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	☒	
Package, COC, and/or Samples marked as beryllium or asbestos containing?	☒	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	☒	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	☒	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	☒	☐	☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	☐	☒	☐	Preservation Method: Ice bags Blue ice Dry ice <u>None</u> Other (describe) *all temperatures are recorded in Celsius 20°
2a Daily check performed and passed on IR temperature gun?	☒	☐	☐	Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): 150340071
3 Chain of custody documents included with shipment?	☒	☐	☐	
4 Sample containers intact and sealed?	☒	☐	☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?	☒	☐	☐	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 Do Low Level Perchlorate samples have headspace as required?	☒	☐	☐	Sample ID's and containers affected:
7 VOA vials contain acid preservation?	☒	☐	☐	(If unknown, select No)
8 VOA vials free of headspace (defined as < 6mm bubble)?	☒	☐	☐	Sample ID's and containers affected:
9 Are Encore containers present?	☒	☐	☐	(If yes, immediately deliver to Volatiles laboratory)
10 Samples received within holding time?	☒	☐	☐	ID's and tests affected:
11 Sample ID's on COC match ID's on bottles?	☒	☐	☐	Sample ID's and containers affected:
12 Date & time on COC match date & time on bottles?	☒	☐	☐	Sample ID's affected:
13 Number of containers received match number indicated on COC?	☒	☐	☐	Sample ID's affected:
14 Are sample containers identifiable as GEL provided?	☒	☐	☐	
15 COC form is properly signed in relinquished/received sections?	☒	☐	☐	
16 Carrier and tracking number.	☒	☐	☐	Circle Applicable: FedEx Air <u>FedEx Ground</u> UPS Field Services Courier Other 7748 2175 9252

Comments (Use Continuation Form if needed):

List of current GEL Certifications as of 12 November 2015

State	Certification
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
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



December 04, 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 - Martin Lake

Order No.: 1511007

Dear Will Vienne:

DHL Analytical, Inc. received 4 sample(s) on 11/2/2015 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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ATTACHMENT 1
CCR ANALYTE SUMMARY

Appendix III Constituents	Appendix IV Constituents
Boron	Arsenic
Calcium	Barium
Chloride	Beryllium
Fluoride	Cadmium
pH	Chromium
Sulfate	Cobalt
Total Dissolved Solids	Fluoride
	Lead
	Lithium
	Mercury
	Molybdenum
	Selenium
	Thallium
	Radium 226 and 228 combined

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 11/2/2015

Work Order Number 1511007

Received by JB

Checklist completed by: [Signature] 11/2/2015
Signature DateReviewed by: [Initials] 11/2/2015
Initials DateCarrier name Hand Delivered

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 ☐ 2.8 °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 - Martin Lake
Lab Order: 1511007

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 11/2/15. A total of 4 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-72211). All samples were detected greater than 10 times the amount in the blank for this analyte. No further corrective actions were taken.

For Metals analysis sample BMW-19 and BMW-18 had low responses for the internal standards Indium and/or Bismuth. All associated analytes (Barium, Cadmium, Molybdenum and/Lead) were not reported from this analytical run and were re-analyzed.

For Metals analysis performed on 11/9/15 the matrix spike and 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 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 11/9/15 LCVL2-151109 was slightly above control limits for Calcium. This is flagged accordingly. The associated CCV2-151109 was within control limits for this analyte. 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 - Martin Lake
Lab Order: 1511007**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1511007-01	BMW-19		10/29/15 02:20 PM	11/2/2015
1511007-02	BMW-11AR		10/29/15 03:25 PM	11/2/2015
1511007-03	MW-18A		10/29/15 05:25 PM	11/2/2015
1511007-04	BMW-18		10/30/15 09:45 AM	11/2/2015

LUMINANT

Lab Order: 1511007
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1511007-01A	BMW-19	10/29/15 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	BMW-19	10/29/15 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	BMW-19	10/29/15 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	BMW-19	10/29/15 02:20 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72178
1511007-01D	BMW-19	10/29/15 02:20 PM	Aqueous	E300	Anion Preparation	11/09/15 09:25 AM	72221
	BMW-19	10/29/15 02:20 PM	Aqueous	E300	Anion Preparation	11/09/15 09:25 AM	72221
	BMW-19	10/29/15 02:20 PM	Aqueous	M4500-H+ B	pH Preparation	11/02/15 02:37 PM	72128
	BMW-19	10/29/15 02:20 PM	Aqueous	M2540C	TDS Preparation	11/03/15 02:01 PM	72150
1511007-02A	BMW-11AR	10/29/15 03:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	BMW-11AR	10/29/15 03:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	BMW-11AR	10/29/15 03:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	BMW-11AR	10/29/15 03:25 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72178
1511007-02D	BMW-11AR	10/29/15 03:25 PM	Aqueous	E300	Anion Preparation	11/09/15 09:25 AM	72221
	BMW-11AR	10/29/15 03:25 PM	Aqueous	E300	Anion Preparation	11/09/15 09:25 AM	72221
	BMW-11AR	10/29/15 03:25 PM	Aqueous	M4500-H+ B	pH Preparation	11/02/15 02:37 PM	72128
	BMW-11AR	10/29/15 03:25 PM	Aqueous	M2540C	TDS Preparation	11/03/15 02:01 PM	72150
1511007-03A	MW-18A	10/29/15 05:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	MW-18A	10/29/15 05:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	MW-18A	10/29/15 05:25 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72178
1511007-03D	MW-18A	10/29/15 05:25 PM	Aqueous	E300	Anion Preparation	11/09/15 09:25 AM	72221
	MW-18A	10/29/15 05:25 PM	Aqueous	M4500-H+ B	pH Preparation	11/02/15 02:37 PM	72128
	MW-18A	10/29/15 05:25 PM	Aqueous	M2540C	TDS Preparation	11/03/15 02:01 PM	72150
1511007-04A	BMW-18	10/30/15 09:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	BMW-18	10/30/15 09:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/06/15 09:55 AM	72211
	BMW-18	10/30/15 09:45 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/05/15 06:10 AM	72178
1511007-04D	BMW-18	10/30/15 09:45 AM	Aqueous	E300	Anion Preparation	11/09/15 09:25 AM	72221
	BMW-18	10/30/15 09:45 AM	Aqueous	M4500-H+ B	pH Preparation	11/02/15 02:37 PM	72128
	BMW-18	10/30/15 09:45 AM	Aqueous	M2540C	TDS Preparation	11/03/15 02:01 PM	72150

Lab Order: 1511007
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1511007-01A	BMW-19	Aqueous	SW7470A	Mercury Total: Aqueous	72178	1	11/09/15 12:51 PM	CETAC2_HG_151109 B
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	1	11/09/15 06:36 PM	ICP-MS3_151109A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	100	11/10/15 01:24 PM	ICP-MS4_151110B
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	1	11/10/15 01:45 PM	ICP-MS4_151110B
1511007-01D	BMW-19	Aqueous	E300	Anions by IC method - Water	72221	1	11/09/15 11:38 AM	IC2_151109A
	BMW-19	Aqueous	E300	Anions by IC method - Water	72221	100	11/09/15 02:32 PM	IC2_151109A
	BMW-19	Aqueous	M4500-H+ B	pH	72128	1	11/02/15 04:13 PM	TITRATOR_151102A
	BMW-19	Aqueous	M2540C	Total Dissolved Solids	72150	1	11/04/15 07:20 AM	WC_151103B
1511007-02A	BMW-11AR	Aqueous	SW7470A	Mercury Total: Aqueous	72178	1	11/09/15 12:53 PM	CETAC2_HG_151109 B
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	1	11/09/15 06:42 PM	ICP-MS3_151109A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	10	11/10/15 01:26 PM	ICP-MS4_151110B
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	1	11/10/15 01:47 PM	ICP-MS4_151110B
1511007-02D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	72221	10	11/09/15 03:05 PM	IC2_151109A
	BMW-11AR	Aqueous	E300	Anions by IC method - Water	72221	1	11/09/15 12:01 PM	IC2_151109A
	BMW-11AR	Aqueous	M4500-H+ B	pH	72128	1	11/02/15 04:14 PM	TITRATOR_151102A
	BMW-11AR	Aqueous	M2540C	Total Dissolved Solids	72150	1	11/04/15 07:20 AM	WC_151103B
1511007-03A	MW-18A	Aqueous	SW7470A	Mercury Total: Aqueous	72178	1	11/09/15 12:55 PM	CETAC2_HG_151109 B
	MW-18A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	1	11/09/15 06:54 PM	ICP-MS3_151109A
	MW-18A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	1	11/10/15 01:49 PM	ICP-MS4_151110B
1511007-03D	MW-18A	Aqueous	E300	Anions by IC method - Water	72221	1	11/09/15 12:15 PM	IC2_151109A
	MW-18A	Aqueous	M4500-H+ B	pH	72128	1	11/02/15 04:17 PM	TITRATOR_151102A
	MW-18A	Aqueous	M2540C	Total Dissolved Solids	72150	1	11/04/15 07:20 AM	WC_151103B
1511007-04A	BMW-18	Aqueous	SW7470A	Mercury Total: Aqueous	72178	1	11/09/15 01:02 PM	CETAC2_HG_151109 B
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	1	11/09/15 07:00 PM	ICP-MS3_151109A
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	72211	1	11/10/15 01:51 PM	ICP-MS4_151110B
1511007-04D	BMW-18	Aqueous	E300	Anions by IC method - Water	72221	1	11/09/15 01:34 PM	IC2_151109A

Lab Order: 1511007
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1511007-04D	BMW-18	Aqueous	M4500-H+ B	pH	72128	1	11/02/15 04:19 PM	TITRATOR_151102A
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	72150	1	11/04/15 07:20 AM	WC_151103B

LUMINANT

DHL Analytical, Inc.

Date: 04-Dec-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1511007

Client Sample ID: BMW-19
Lab ID: 1511007-01
Collection Date: 10/29/15 02:20 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 12:51 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/10/15 01:45 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:36 PM
Barium	0.0231	0.00300	0.0100		mg/L	1	11/10/15 01:45 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/10/15 01:45 PM
Boron	0.385	0.0100	0.0300		mg/L	1	11/09/15 06:36 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/10/15 01:45 PM
Calcium	417	10.0	30.0		mg/L	100	11/10/15 01:24 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:36 PM
Cobalt	0.0161	0.00300	0.00500		mg/L	1	11/10/15 01:45 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/10/15 01:45 PM
Lithium	0.0545	0.00500	0.0100		mg/L	1	11/09/15 06:36 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/10/15 01:45 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:36 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/10/15 01:45 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	16.2	0.300	1.00		mg/L	1	11/09/15 11:38 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/09/15 11:38 AM
Sulfate	2070	100	300		mg/L	100	11/09/15 02:32 PM
PH		M4500-H+ B		Analyst: LM			
pH	6.75	0	0		pH Units@10.2°C	1	11/02/15 04:13 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	4060	50.0	50.0		mg/L	1	11/04/15 07:20 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: 04-Dec-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1511007

Client Sample ID: BMW-11AR
Lab ID: 1511007-02
Collection Date: 10/29/15 03:25 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 12:53 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/10/15 01:47 PM
Arsenic	0.0116	0.00200	0.00500		mg/L	1	11/09/15 06:42 PM
Barium	0.0659	0.00300	0.0100		mg/L	1	11/09/15 06:42 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/10/15 01:47 PM
Boron	0.332	0.0100	0.0300		mg/L	1	11/09/15 06:42 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 06:42 PM
Calcium	91.5	1.00	3.00		mg/L	10	11/10/15 01:26 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:42 PM
Cobalt	0.0124	0.00300	0.00500		mg/L	1	11/10/15 01:47 PM
Lead	0.000391	0.000300	0.00100	J	mg/L	1	11/09/15 06:42 PM
Lithium	0.0594	0.00500	0.0100		mg/L	1	11/09/15 06:42 PM
Molybdenum	0.00496	0.00200	0.00500	J	mg/L	1	11/09/15 06:42 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:42 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/10/15 01:47 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	11.3	0.300	1.00		mg/L	1	11/09/15 12:01 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/09/15 12:01 PM
Sulfate	243	10.0	30.0		mg/L	10	11/09/15 03:05 PM
PH		M4500-H+ B		Analyst: LM			
pH	7.01	0	0		pH Units@10.6°C	1	11/02/15 04:14 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	923	10.0	10.0		mg/L	1	11/04/15 07:20 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: 04-Dec-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1511007

Client Sample ID: MW-18A
Lab ID: 1511007-03
Collection Date: 10/29/15 05:25 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: ABO			
Mercury	0.00350	0.0000800	0.000200		mg/L	1	11/09/15 12:55 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/10/15 01:49 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:54 PM
Barium	0.0630	0.00300	0.0100		mg/L	1	11/09/15 06:54 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/10/15 01:49 PM
Boron	0.158	0.0100	0.0300		mg/L	1	11/09/15 06:54 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 06:54 PM
Calcium	1.75	0.100	0.300		mg/L	1	11/10/15 01:49 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:54 PM
Cobalt	0.00321	0.00300	0.00500	J	mg/L	1	11/10/15 01:49 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 06:54 PM
Lithium	0.00901	0.00500	0.0100	J	mg/L	1	11/09/15 06:54 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:54 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 06:54 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/10/15 01:49 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	9.34	0.300	1.00		mg/L	1	11/09/15 12:15 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/09/15 12:15 PM
Sulfate	7.59	1.00	3.00		mg/L	1	11/09/15 12:15 PM
PH		M4500-H+ B		Analyst: LM			
pH	5.45	0	0		pH Units@10.9°C	1	11/02/15 04:17 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	83.0	10.0	10.0		mg/L	1	11/04/15 07:20 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: 04-Dec-15

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1511007

Client Sample ID: BMW-18
Lab ID: 1511007-04
Collection Date: 10/30/15 09:45 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/09/15 01:02 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/10/15 01:51 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 07:00 PM
Barium	0.0401	0.00300	0.0100		mg/L	1	11/09/15 07:00 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/10/15 01:51 PM
Boron	0.410	0.0100	0.0300		mg/L	1	11/09/15 07:00 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/09/15 07:00 PM
Calcium	7.20	0.100	0.300		mg/L	1	11/10/15 01:51 PM
Chromium	0.00944	0.00200	0.00500		mg/L	1	11/09/15 07:00 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/10/15 01:51 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/10/15 01:51 PM
Lithium	0.140	0.00500	0.0100		mg/L	1	11/09/15 07:00 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 07:00 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/09/15 07:00 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/10/15 01:51 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	26.6	0.300	1.00		mg/L	1	11/09/15 01:34 PM
Fluoride	0.148	0.100	0.400	J	mg/L	1	11/09/15 01:34 PM
Sulfate	97.3	1.00	3.00		mg/L	1	11/09/15 01:34 PM
PH							
M4500-H+ B				Analyst: LM			
pH	10.4	0	0		pH Units@11.6°C	1	11/02/15 04:19 PM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	768	10.0	10.0		mg/L	1	11/04/15 07:20 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: 1511007

Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_151109B

The QC data in batch 72178 applies to the following samples: 1511007-01A, 1511007-02A, 1511007-03A, 1511007-04A

Sample ID	MB-72178	Batch ID:	72178	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 12:21:59 PM	Prep Date:	11/5/2015			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-72178	Batch ID:	72178	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 12:24:15 PM	Prep Date:	11/5/2015			
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	LCSD-72178	Batch ID:	72178	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 12:26:31 PM	Prep Date:	11/5/2015			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00211 0.000200 0.00200 0 106 85 115 7.37 15

Sample ID	1510306-01A SD	Batch ID:	72178	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 12:31:04 PM	Prep Date:	11/5/2015			
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	1510306-01A PDS	Batch ID:	72178	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 12:33:19 PM	Prep Date:	11/5/2015			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00246 0.000200 0.00250 0 98.4 85 115

Sample ID	1510306-01A MS	Batch ID:	72178	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/10/2015 4:29:45 PM	Prep Date:	11/5/2015			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00207 0.000200 0.00200 0 104 80 120

Sample ID	1510306-01A MSD	Batch ID:	72178	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/10/2015 4:32:01 PM	Prep Date:	11/5/2015			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00207 0.000200 0.00200 0 104 80 120 0 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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_151109B

Sample ID	ICV-151109	Batch ID:	R82564	TestNo:	SW7470A	Units:	mg/L			
SampType:	ICV	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 10:48:31 AM	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			

Sample ID	CCV2-151109	Batch ID:	R82564	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 12:17:26 PM	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			

Sample ID	CCV3-151109	Batch ID:	R82564	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 12:58:16 PM	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			

Sample ID	CCV4-151109	Batch ID:	R82564	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 1:14:13 PM	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			

Sample ID	CCV5-151109	Batch ID:	R82564	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/9/2015 1:33:14 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00200	0.000200	0.00200	0	100	90	110			

Sample ID	ICV-151110	Batch ID:	R82564	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/10/2015 3:36:25 PM	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			

Sample ID	CCV1-151110	Batch ID:	R82564	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/10/2015 4:20:38 PM	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			

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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_151109B

Sample ID	CCV2-151110	Batch ID:	R82564	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_151109B	Analysis Date:	11/10/2015 4:36:35 PM	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			

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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151109A

The QC data in batch 72211 applies to the following samples: 1511007-01A, 1511007-02A, 1511007-03A, 1511007-04A

Sample ID	MB-72211		Batch ID:	72211		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS3_151109A		Analysis Date:	11/9/2015 4:35:00 PM		Prep Date:	11/6/2015	
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	0.0135	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	LCS-72211			Batch ID:	72211		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS3_151109A		Analysis Date:	11/9/2015 4:41:00 PM		Prep Date:	11/6/2015	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.177	0.00250	0.200	0	88.3	80	120
Arsenic	0.178	0.00500	0.200	0	89.0	80	120
Barium	0.177	0.0100	0.200	0	88.3	80	120
Beryllium	0.187	0.00100	0.200	0	93.6	80	120
Boron	0.185	0.0300	0.200	0	92.6	80	120
Cadmium	0.172	0.00100	0.200	0	86.2	80	120
Calcium	4.48	0.300	5.00	0	89.7	80	120
Chromium	0.178	0.00500	0.200	0	88.9	80	120
Cobalt	0.188	0.00500	0.200	0	94.1	80	120
Lead	0.178	0.00100	0.200	0	89.2	80	120
Lithium	0.182	0.0100	0.200	0	91.2	80	120
Molybdenum	0.169	0.00500	0.200	0	84.4	80	120
Selenium	0.178	0.00500	0.200	0	89.2	80	120
Thallium	0.187	0.00150	0.200	0	93.4	80	120

Sample ID	LCSD-72211	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 4:47:00 PM	Prep Date:	11/6/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.181	0.00250	0.200	0	90.4	80	120	2.35	15
Arsenic	0.178	0.00500	0.200	0	88.8	80	120	0.281	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151109A

Sample ID	LCSD-72211	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 4:47:00 PM	Prep Date:	11/6/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.177	0.0100	0.200	0	88.6	80	120	0.396	15
Beryllium	0.189	0.00100	0.200	0	94.4	80	120	0.851	15
Boron	0.190	0.0300	0.200	0	95.0	80	120	2.56	15
Cadmium	0.174	0.00100	0.200	0	86.8	80	120	0.694	15
Calcium	4.60	0.300	5.00	0	92.0	80	120	2.53	15
Chromium	0.178	0.00500	0.200	0	88.8	80	120	0.113	15
Cobalt	0.186	0.00500	0.200	0	93.2	80	120	1.01	15
Lead	0.181	0.00100	0.200	0	90.6	80	120	1.45	15
Lithium	0.183	0.0100	0.200	0	91.6	80	120	0.492	15
Molybdenum	0.170	0.00500	0.200	0	85.2	80	120	1.00	15
Selenium	0.179	0.00500	0.200	0	89.4	80	120	0.168	15
Thallium	0.187	0.00150	0.200	0	93.4	80	120	0	15

Sample ID	1510306-01A SD	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 5:06:00 PM	Prep Date:	11/6/2015			
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	0.274	0.0500	0	0.273				0.238	10
Beryllium	<0.00150	0.00500	0	0				0	10
Boron	0.114	0.150	0	0.112				1.28	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	0.0106				0	10
Lead	<0.00150	0.00500	0	0				0	10
Lithium	<0.0250	0.0500	0	0				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	1510306-01A PDS	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 5:36:00 PM	Prep Date:	11/6/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.191	0.00250	0.200	0	95.5	80	120		
Arsenic	0.193	0.00500	0.200	0	96.4	80	120		
Barium	0.462	0.0100	0.200	0.273	94.4	80	120		
Beryllium	0.202	0.00100	0.200	0	101	80	120		
Boron	0.299	0.0300	0.200	0.112	93.5	80	120		
Cadmium	0.182	0.00100	0.200	0	91.2	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151109A

Sample ID	1510306-01A PDS	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 5:36:00 PM	Prep Date:	11/6/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chromium	0.194	0.00500	0.200	0	97.0	80	120			
Cobalt	0.209	0.00500	0.200	0.0106	99.1	80	120			
Lead	0.196	0.00100	0.200	0	98.2	80	120			
Lithium	0.192	0.0100	0.200	0	96.0	80	120			
Molybdenum	0.185	0.00500	0.200	0	92.6	80	120			
Selenium	0.185	0.00500	0.200	0	92.6	80	120			
Thallium	0.205	0.00150	0.200	0	102	80	120			

Sample ID	1510306-01A MS	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L				
SampType:	MS	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 5:42:00 PM	Prep Date:	11/6/2015				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.196	0.00250	0.200	0	98.2	80	120			
Arsenic	0.193	0.00500	0.200	0	96.4	80	120			
Barium	0.475	0.0100	0.200	0.273	101	80	120			
Beryllium	0.200	0.00100	0.200	0	99.8	80	120			
Boron	0.301	0.0300	0.200	0.112	94.2	80	120			
Cadmium	0.183	0.00100	0.200	0	91.4	80	120			
Calcium	84.0	0.300	5.00	77.0	140	80	120			S
Chromium	0.187	0.00500	0.200	0	93.4	80	120			
Cobalt	0.201	0.00500	0.200	0.0106	95.1	80	120			
Lead	0.189	0.00100	0.200	0	94.3	80	120			
Lithium	0.190	0.0100	0.200	0	94.8	80	120			
Molybdenum	0.186	0.00500	0.200	0	93.0	80	120			
Selenium	0.185	0.00500	0.200	0	92.4	80	120			
Thallium	0.199	0.00150	0.200	0	99.4	80	120			

Sample ID	1510306-01A MSD	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 5:48:00 PM	Prep Date:	11/6/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.185	0.00250	0.200	0	92.5	80	120	6.03	15	
Arsenic	0.188	0.00500	0.200	0	93.8	80	120	2.79	15	
Barium	0.448	0.0100	0.200	0.273	87.5	80	120	5.79	15	
Beryllium	0.190	0.00100	0.200	0	95.0	80	120	4.93	15	
Boron	0.287	0.0300	0.200	0.112	87.3	80	120	4.73	15	
Cadmium	0.176	0.00100	0.200	0	87.8	80	120	4.13	15	
Calcium	79.5	0.300	5.00	77.0	51.6	80	120	5.41	15	S
Chromium	0.181	0.00500	0.200	0	90.4	80	120	3.26	15	
Cobalt	0.196	0.00500	0.200	0.0106	92.5	80	120	2.67	15	
Lead	0.178	0.00100	0.200	0	89.2	80	120	5.50	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151109A

Sample ID	1510306-01A MSD	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 5:48:00 PM	Prep Date:	11/6/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.182	0.0100	0.200	0	91.2	80	120	3.82	15	
Molybdenum	0.176	0.00500	0.200	0	88.2	80	120	5.24	15	
Selenium	0.182	0.00500	0.200	0	91.0	80	120	1.53	15	
Thallium	0.189	0.00150	0.200	0	94.4	80	120	5.26	15	

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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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151109A

Sample ID	ICV1-151109	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 12:27:00 PM	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	ILCVL-151109	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 12:39:00 PM	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	CCV1-151109	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 3:35:00 PM	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
- 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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151109A

Sample ID	CCV1-151109	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 3:35:00 PM	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	LCVL1-151109	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 3:53:00 PM	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	CCV2-151109	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 5:54:00 PM	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151109A

Sample ID	CCV2-151109	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 5:54:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	5.44	0.300	5.00	0	109	90	110			
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	LCVL2-151109	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 6:12:00 PM	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			
Calcium	0.131	0.300	0.100	0	131	70	130			S
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			

Sample ID	CCV3-151105	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 7:42:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.216	0.00500	0.200	0	108	90	110			
Barium	0.217	0.0100	0.200	0	109	90	110			
Boron	0.204	0.0300	0.200	0	102	90	110			
Cadmium	0.210	0.00100	0.200	0	105	90	110			
Chromium	0.219	0.00500	0.200	0	109	90	110			
Lead	0.219	0.00100	0.200	0	109	90	110			
Lithium	0.216	0.0100	0.200	0	108	90	110			
Molybdenum	0.212	0.00500	0.200	0	106	90	110			
Selenium	0.208	0.00500	0.200	0	104	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_151109A

Sample ID	LCVL3-151105	Batch ID:	R82588	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS3_151109A	Analysis Date:	11/9/2015 8:13:00 PM	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			
Barium	0.00534	0.0100	0.00500	0	107	70	130			
Boron	0.0193	0.0300	0.0200	0	96.4	70	130			
Cadmium	0.00105	0.00100	0.00100	0	105	70	130			
Chromium	0.00534	0.00500	0.00500	0	107	70	130			
Lead	0.00105	0.00100	0.00100	0	105	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			
Molybdenum	0.00512	0.00500	0.00500	0	103	70	130			
Selenium	0.00526	0.00500	0.00500	0	105	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_151110B

The QC data in batch 72211 applies to the following samples: 1511007-01A, 1511007-02A, 1511007-03A, 1511007-04A

Sample ID	1510306-01A SD	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 1:12:00 PM	Prep Date:	11/6/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	75.5	15.0	0	76.3				1.05	10	

Sample ID	1510306-01A PDS	Batch ID:	72211	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 1:32:00 PM	Prep Date:	11/6/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	117	3.00	50.0	76.3	81.6	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_151110B

Sample ID	ICV-151110		Batch ID:	R82595		TestNo:	SW6020A		Units:	mg/L	
SampType:	ICV		Run ID:	ICP-MS4_151110B		Analysis Date:	11/10/2015 10:51:00 A		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			
Barium	0.103	0.0100	0.100	0	103	90	110			
Beryllium	0.102	0.00100	0.100	0	102	90	110			
Cadmium	0.102	0.00100	0.100	0	102	90	110			
Calcium	2.25	0.300	2.50	0	90.0	90	110			
Cobalt	0.110	0.00500	0.100	0	110	90	110			
Lead	0.103	0.00100	0.100	0	103	90	110			
Molybdenum	0.0983	0.00500	0.100	0	98.3	90	110			
Thallium	0.102	0.00150	0.100	0	102	90	110			

Sample ID	LCVL-151110	Batch ID:	R82595	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 10:59:00 A	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			
Barium	0.00519	0.0100	0.00500	0	104	70	130			
Beryllium	0.00126	0.00100	0.00100	0	126	70	130			
Cadmium	0.00106	0.00100	0.00100	0	106	70	130			
Calcium	0.0951	0.300	0.100	0	95.1	70	130			
Cobalt	0.00546	0.00500	0.00500	0	109	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Molybdenum	0.00507	0.00500	0.00500	0	101	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID	CCV4-151110	Batch ID:	R82595	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 12:58:00 P	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.84	0.300	5.00	0	96.8	90	110			

Sample ID	LCVL4-151110	Batch ID:	R82595	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 1:05:00 PM	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			

Sample ID	CCV5-151110		Batch ID:	R82595		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS4_151110B		Analysis Date:	11/10/2015 1:34:00 PM		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			

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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_151110B

Sample ID	CCV5-151110			Batch ID:	R82595		TestNo:	SW6020A		Units:	mg/L		
SampType:	CCV			Run ID:	ICP-MS4_151110B		Analysis Date:	11/10/2015 1:34:00 PM		Prep Date:			
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.192	0.0100	0.200	0	96.2	90	110			
Beryllium	0.200	0.00100	0.200	0	99.9	90	110			
Cadmium	0.192	0.00100	0.200	0	96.2	90	110			
Calcium	4.80	0.300	5.00	0	96.0	90	110			
Cobalt	0.203	0.00500	0.200	0	102	90	110			
Lead	0.191	0.00100	0.200	0	95.7	90	110			
Molybdenum	0.187	0.00500	0.200	0	93.3	90	110			
Thallium	0.197	0.00150	0.200	0	98.3	90	110			

Sample ID	LCVL5-151110	Batch ID:	R82595	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 1:38:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00234	0.00250	0.00200	0	117	70	130			
Barium	0.00504	0.0100	0.00500	0	101	70	130			
Beryllium	0.000933	0.00100	0.00100	0	93.3	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.0950	0.300	0.100	0	95.0	70	130			
Cobalt	0.00538	0.00500	0.00500	0	108	70	130			
Lead	0.00100	0.00100	0.00100	0	100	70	130			
Molybdenum	0.00492	0.00500	0.00500	0	98.4	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

Sample ID	CCV6-151110	Batch ID:	R82595	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 2:01:00 PM	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			
Barium	0.195	0.0100	0.200	0	97.7	90	110			
Beryllium	0.204	0.00100	0.200	0	102	90	110			
Cadmium	0.194	0.00100	0.200	0	96.8	90	110			
Calcium	5.46	0.300	5.00	0	109	90	110			
Cobalt	0.203	0.00500	0.200	0	101	90	110			
Lead	0.191	0.00100	0.200	0	95.7	90	110			
Molybdenum	0.187	0.00500	0.200	0	93.7	90	110			
Thallium	0.196	0.00150	0.200	0	97.8	90	110			

Sample ID	LCVL6-151110	Batch ID:	R82595	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 2:05:00 PM	Prep Date:					
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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_151110B

Sample ID	LCVL6-151110	Batch ID:	R82595	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_151110B	Analysis Date:	11/10/2015 2:05:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00209	0.00250	0.00200	0	104	70	130			
Barium	0.00500	0.0100	0.00500	0	100	70	130			
Beryllium	0.000981	0.00100	0.00100	0	98.1	70	130			
Cadmium	0.000986	0.00100	0.00100	0	98.6	70	130			
Calcium	0.107	0.300	0.100	0	107	70	130			
Cobalt	0.00531	0.00500	0.00500	0	106	70	130			
Lead	0.00101	0.00100	0.00100	0	101	70	130			
Molybdenum	0.00485	0.00500	0.00500	0	96.9	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_151109A

The QC data in batch 72221 applies to the following samples: 1511007-01D, 1511007-02D, 1511007-03D, 1511007-04D

Sample ID	MB-72221	Batch ID:	72221	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC2_151109A	Analysis Date:	11/9/2015 9:45:32 AM	Prep Date:	11/9/2015			
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	LCSD-72221	Batch ID:	72221	TestNo:	E300	Units:	mg/L			
SampType:	LCSD	Run ID:	IC2_151109A	Analysis Date:	11/9/2015 10:14:41 AM	Prep Date:	11/9/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.0	1.00	10.00	0	100	90	110	1.05	20	
Fluoride	3.62	0.400	4.000	0	90.6	90	110	1.96	20	
Sulfate	29.6	3.00	30.00	0	98.8	90	110	1.44	20	

Sample ID	LCS-72221	Batch ID:	72221	TestNo:	E300	Units:	mg/L			
SampType:	LCS	Run ID:	IC2_151109A	Analysis Date:	11/9/2015 10:30:26 AM	Prep Date:	11/9/2015			
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	30.1	3.00	30.00	0	100	90	110			

Sample ID	1511077-02AMS	Batch ID:	72221	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_151109A	Analysis Date:	11/9/2015 11:09:31 AM	Prep Date:	11/9/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2280	100	2000	151.0	106	90	110			
Fluoride	1950	40.0	2000	0	97.5	90	110			
Sulfate	4000	300	2000	1839	108	90	110			

Sample ID	1511077-02AMSD	Batch ID:	72221	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC2_151109A	Analysis Date:	11/9/2015 11:24:06 AM	Prep Date:	11/9/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2280	100	2000	151.0	106	90	110	0.029	20	
Fluoride	2000	40.0	2000	0	100	90	110	2.62	20	
Sulfate	3940	300	2000	1839	105	90	110	1.50	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_151109A

Sample ID	ICV-151109	Batch ID:	R82596	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_151109A	Analysis Date:	11/9/2015 9:08:45 AM	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	9.76	0.400	10.00	0	97.6	90	110			
Sulfate	75.5	3.00	75.00	0	101	90	110			

Sample ID	CCV1-151109	Batch ID:	R82596	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_151109A	Analysis Date:	11/9/2015 1:57:13 PM	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	3.88	0.400	4.000	0	96.9	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

Sample ID	CCV2-151109	Batch ID:	R82596	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_151109A	Analysis Date:	11/9/2015 4:08:45 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.94	1.00	10.00	0	99.4	90	110			
Fluoride	3.89	0.400	4.000	0	97.3	90	110			
Sulfate	29.8	3.00	30.00	0	99.2	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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_151102A

The QC data in batch 72128 applies to the following samples: 1511007-01D, 1511007-02D, 1511007-03D, 1511007-04D

Sample ID	1511009-03B DUP	Batch ID:	72128	TestNo:	M4500-H+ B	Units:	pH Units@15.7°C
SampType:	DUP	Run ID:	TITRATOR_151102A	Analysis Date:	11/2/2015 4:29:00 PM	Prep Date:	11/2/2015
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		8.35	0	0	8.320		0.360 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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_151102A

Sample ID	ICV-151102	Batch ID:	R82474	TestNo:	M4500-H+ B	Units:	pH Units@22.3°C			
SampType:	ICV	Run ID:	TITRATOR_151102A	Analysis Date:	11/2/2015 10:28:00 AM	Prep Date:	11/2/2015			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	10.0	0	10.00	0	100	99	101			

Sample ID	CCV1-151102	Batch ID:	R82474		TestNo:	M4500-H+ B		Units:	pH Units@22.3℃		
SampType:	CCV	Run ID:	TITRATOR_151102A		Analysis Date:	11/2/2015 4:44:00 PM		Prep Date:	11/2/2015		
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			

Sample ID	CCV-151102-PH12	Batch ID:	R82474		TestNo:	M4500-H+ B		Units:	pH Units@22.5°C		
SampType:	CCV	Run ID:	TITRATOR_151102A		Analysis Date:	11/2/2015 4:46:00 PM		Prep Date:	11/2/2015		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	11.9	0	12.00	0	99.3	97.1	102.9			

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: 1511007
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: WC_151103B

The QC data in batch 72150 applies to the following samples: 1511007-01D, 1511007-02D, 1511007-03D, 1511007-04D

Sample ID	MB-72150	Batch ID:	72150	TestNo:	M2540C	Units:	mg/L
SampType:	MBLK	Run ID:	WC_151103B	Analysis Date:	11/4/2015 7:20:00 AM	Prep Date:	11/3/2015
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-72150	Batch ID:	72150	TestNo:	M2540C	Units:	mg/L
SampType:	LCS	Run ID:	WC_151103B	Analysis Date:	11/4/2015 7:20:00 AM	Prep Date:	11/3/2015
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 759 10.0 745.6 0 102 90 113

Sample ID	1510306-01D-DUP	Batch ID:	72150	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_151103B	Analysis Date:	11/4/2015 7:20:00 AM	Prep Date:	11/3/2015
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 1650 50.0 0 1640 0.608 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



December 03, 2015

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

Re: Routine Analysis
Work Order: 384834

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: 384834 GEL Work Order: 384834

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



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: 1511007

304834

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

GEL Laboratories
PO Box 30712
Charleston, SC 29417

TEL: (843) 556-8171

FAX:

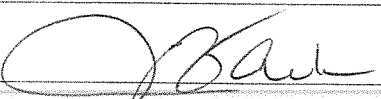
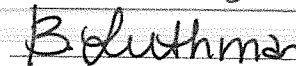
Acct #:

02-Nov-15

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E903.1	E904.0				
BMW-19	Aqueous	-01B	10/29/15 02:20 PM	500HDPEHNO3		1				
BMW-19	Aqueous	-01C	10/29/15 02:20 PM	500HDPEHNO3	1					
BMW-11AR	Aqueous	-02B	10/29/15 03:25 PM	500HDPEHNO3		1				
BMW-11AR	Aqueous	-02C	10/29/15 03:25 PM	500HDPEHNO3	1					
MW-18A	Aqueous	-03B	10/29/15 05:25 PM	500HDPEHNO3		1				
MW-18A	Aqueous	-03C	10/29/15 05:25 PM	500HDPEHNO3	1					
BMW-18	Aqueous	-04B	10/30/15 09:45 AM	500HDPEHNO3		1				
BMW-18	Aqueous	-04C	10/30/15 09:45 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: 	Date/Time: 11/2/15 1730	Received by: 	Date/Time: 11/2/15 1730
Relinquished by: _____	Date/Time: _____	Received by: 	Date/Time: 11/5/15 920

SAMPLE RECEIPT & REVIEW FORM

Client: DHLA		SDG/AR/COC/Work Order: 304034	
Received By: Brielle Luthman		Date Received: 11/5/15 0920	
Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?			Maximum Net Counts Observed* (Observed Counts - Area Background Counts): ✓
Classified Radioactive II or III by RSO?			If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?			
Package, COC, and/or Samples marked as beryllium or asbestos containing?			If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?			Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?			

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

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials

AW

Date

11/6/15

Page

of

1

GL-CHL-SR-001 Rev 2

List of current GEL Certifications as of 03 December 2015

State	Certification
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: BMW-19
Sample ID: 384834001
Matrix: Water
Collect Date: 29-OCT-15 14:20
Receive Date: 05-NOV-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	1.55	+/-1.02	1.56	3.00	pCi/L		AXM6	12/01/15	1233 1525004	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		0.395	+/-0.262	0.375	1.00	pCi/L		CXP3	11/19/15	0845 1521083	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"			89.3	(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: BMW-11AR
Sample ID: 384834002
Matrix: Water
Collect Date: 29-OCT-15 15:25
Receive Date: 05-NOV-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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		4.75	+/-1.63	2.20	3.00	pCi/L		AXM6	12/01/15	1413 1525004	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		1.60	+/-0.374	0.207	1.00	pCi/L		CXP3	11/19/15	0845 1521083	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"						92.3	(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: MW-18A
Sample ID: 384834003
Matrix: Water
Collect Date: 29-OCT-15 17:25
Receive Date: 05-NOV-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	-0.863	+/-1.23	2.39	3.00	pCi/L		AXM6	12/01/15	1233 1525004	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		0.659	+/-0.322	0.409	1.00	pCi/L		CXP3	11/19/15	0845 1521083	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"							89.1	(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: 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: BMW-18
Sample ID: 384834004
Matrix: Water
Collect Date: 30-OCT-15 09:45
Receive Date: 05-NOV-15
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	0.836	+/-0.906	1.51	3.00	pCi/L		AXM6	12/01/15	1234	1525004	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.526	+/-0.258	0.316	1.00	pCi/L		CXP3	11/19/15	0845	1521083	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"						91.7	(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: December 3, 2015

Page 1 of 2

DHL Analytical
2300 Double Creek Drive
Round Rock, Texas

Contact: Mr. John DuPont

Workorder: 384834

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
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							
Rad Ra-226											
Batch	1521083										
QC1203427692	384798001	DUP									
Radium-226		1.63		1.72	pCi/L	5.29		(0% - 100%)	CXP3	11/19/15	09:15
		Uncertainty	+/-0.480	+/-0.548							
QC1203427694	LCS										
Radium-226		24.4		26.1	pCi/L		107	(75%-125%)		11/23/15	10:30
		Uncertainty		+/-1.79							
QC1203427691	MB										
Radium-226			U	-0.057	pCi/L					11/23/15	11:05
		Uncertainty		+/-0.177							
QC1203427693	384798001	MS									
Radium-226		122	1.63	115	pCi/L		92.6	(75%-125%)		11/19/15	09:15
		Uncertainty	+/-0.480	+/-7.74							

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: 384834

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, 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.



February 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 - Martin Lake

Order No.: 1512359

Dear Will Vienne:

DHL Analytical, Inc. received 8 sample(s) on 12/31/2015 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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Subcontract Report 1512359	44

CLIENT: PBLW
ADDRESS: 2201 DOUBLE CREEK DR ROUND ROCK TX 78684
PHONE: 512-671-3434 FAX/E-MAIL: 512-671-3446
DATA REPORTED TO: WILL VIENNE
ADDITIONAL REPORT COPIES TO:

DATE: 12-30-15 PAGE 1 OF 1
PO #: S164-B DHL WORK ORDER #: 1572359
PROJECT LOCATION OR NAME: LUMINANT - MARTIN LAKE
CLIENT PROJECT #: S164-B COLLECTOR: J. BRANTON

[illegible]

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: 30DEC15
ACTWGT: 52.00 LB MAN
CAD: /POS1621
DIMS: 25x14x14 IN
BILL SENDER

TO

DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

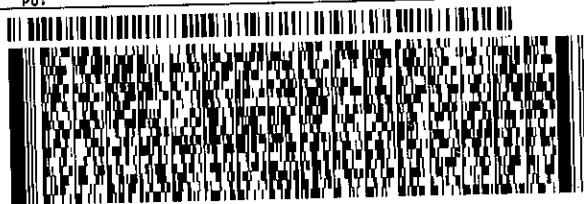
(512) 388-8222

REF:

DEPT:

INU:

PO:



FedEx
Express



1 of 2

TRK# 8083 8295 8181

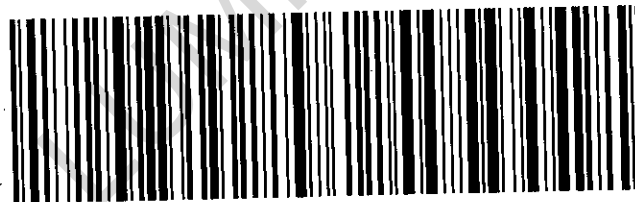
0200
MASTER

A8 BSMA

THU - 31 DEC 10:30A
PRIORITY OVERNIGHT

78664

TX-US AUS



Part # 156297-433 R112 10/10

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: 30DEC15
ACTWGT: 53.00 LB MAN
CAD: /POS1621
DIMS: 25x14x14 IN
BILL SENDER

Part # 156297-435 H12 10/15

TO

DHL ANALYTICAL
2300 DOUBLE CREEK DR

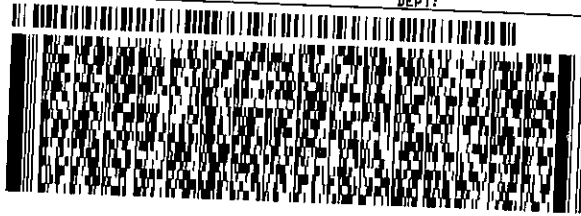
ROUND ROCK TX 78664

(512) 388-8222

INV:
PO:

REF:

DEPT:



FedEx
Express



AN10016010031F

2 of 2
MPS# 7820 7627 1105
0681
Mstr# 8083 8295 8181

0200

THU - 31 DEC 10:30A
PRIORITY OVERNIGHT

A8 BSMA

78664
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 12/31/2015

Work Order Number 1512359

Received by JB

Checklist completed by: [Signature] 12/31/2015
Signature Date

Reviewed by SS 12/31/2015
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 ☐ 3.3 °C, 1.4
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: Luminant - Martin Lake
Lab Order: 1512359

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 12/31/15. A total of 8 samples were received. For samples BMW-18 and BMW-19 the Time of Collections were corrected to 1750 and 1615 respectively per client instruction. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 1/11/16 and 1/14/16 (batches 73059 & 73098) the matrix spikes and matrix spike duplicate recoveries were out of control limits for Calcium or Boron. 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 LCSs were within control limits for these analytes. No further corrective actions were taken.

MERCURY ANALYSIS

For Mercury analysis performed on 1/5/16 the matrix spike and matrix spike duplicate recoveries were slightly below control limits. 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. No further corrective actions were taken.

For Mercury analysis performed on 1/5/16 the PDS recovery was below control limits. This is flagged accordingly. The serial dilution was within control limits. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Lab Order: 1512359**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1512359-01	BMW-20		12/30/15 10:20 AM	12/31/2015
1512359-02	BMW-21		12/30/15 11:10 AM	12/31/2015
1512359-03	BMW-22		12/30/15 12:00 PM	12/31/2015
1512359-04	BMW-23		12/30/15 12:50 PM	12/31/2015
1512359-05	BMW-24		12/30/15 01:45 PM	12/31/2015
1512359-06	BMW-11AR		12/30/15 02:55 PM	12/31/2015
1512359-07	BMW-18		12/30/15 05:15 PM	12/31/2015
1512359-08	BMW-19		12/30/15 04:15 PM	12/31/2015

Lab Order: 1512359
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1512359-01A	BMW-20	12/30/15 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/07/16 08:56 AM	73059
	BMW-20	12/30/15 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-20	12/30/15 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-20	12/30/15 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-20	12/30/15 10:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/04/16 01:35 PM	73017
1512359-01D	BMW-20	12/30/15 10:20 AM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-20	12/30/15 10:20 AM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-20	12/30/15 10:20 AM	Aqueous	M4500-H+ B	pH Preparation	01/04/16 08:46 AM	72998
	BMW-20	12/30/15 10:20 AM	Aqueous	M2540C	TDS Preparation	01/05/16 01:09 PM	73034
1512359-02A	BMW-21	12/30/15 11:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/07/16 08:56 AM	73059
	BMW-21	12/30/15 11:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-21	12/30/15 11:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-21	12/30/15 11:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-21	12/30/15 11:10 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/04/16 01:35 PM	73017
1512359-02D	BMW-21	12/30/15 11:10 AM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-21	12/30/15 11:10 AM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-21	12/30/15 11:10 AM	Aqueous	M4500-H+ B	pH Preparation	01/04/16 08:46 AM	72998
	BMW-21	12/30/15 11:10 AM	Aqueous	M2540C	TDS Preparation	01/05/16 01:09 PM	73034
1512359-03A	BMW-22	12/30/15 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/07/16 08:56 AM	73059
	BMW-22	12/30/15 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-22	12/30/15 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-22	12/30/15 12:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-22	12/30/15 12:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/04/16 01:35 PM	73017
1512359-03D	BMW-22	12/30/15 12:00 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-22	12/30/15 12:00 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-22	12/30/15 12:00 PM	Aqueous	M4500-H+ B	pH Preparation	01/04/16 08:46 AM	72998
	BMW-22	12/30/15 12:00 PM	Aqueous	M2540C	TDS Preparation	01/05/16 01:09 PM	73034
1512359-04A	BMW-23	12/30/15 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/07/16 08:56 AM	73059

Lab Order: 1512359
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1512359-04A	BMW-23	12/30/15 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-23	12/30/15 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-23	12/30/15 12:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-23	12/30/15 12:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/04/16 01:35 PM	73017
1512359-04D	BMW-23	12/30/15 12:50 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-23	12/30/15 12:50 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-23	12/30/15 12:50 PM	Aqueous	M4500-H+ B	pH Preparation	01/04/16 08:46 AM	72998
	BMW-23	12/30/15 12:50 PM	Aqueous	M2540C	TDS Preparation	01/05/16 01:09 PM	73034
1512359-05A	BMW-24	12/30/15 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/07/16 08:56 AM	73059
	BMW-24	12/30/15 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-24	12/30/15 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-24	12/30/15 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-24	12/30/15 01:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/04/16 01:35 PM	73017
1512359-05D	BMW-24	12/30/15 01:45 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-24	12/30/15 01:45 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-24	12/30/15 01:45 PM	Aqueous	M4500-H+ B	pH Preparation	01/04/16 08:46 AM	72998
	BMW-24	12/30/15 01:45 PM	Aqueous	M2540C	TDS Preparation	01/05/16 01:09 PM	73034
1512359-06A	BMW-11AR	12/30/15 02:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-11AR	12/30/15 02:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-11AR	12/30/15 02:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-11AR	12/30/15 02:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/07/16 08:56 AM	73059
	BMW-11AR	12/30/15 02:55 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/04/16 01:35 PM	73017
1512359-06D	BMW-11AR	12/30/15 02:55 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-11AR	12/30/15 02:55 PM	Aqueous	M4500-H+ B	pH Preparation	01/04/16 08:46 AM	72998
	BMW-11AR	12/30/15 02:55 PM	Aqueous	M2540C	TDS Preparation	01/05/16 01:09 PM	73034
1512359-07A	BMW-18	12/30/15 05:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-18	12/30/15 05:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-18	12/30/15 05:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/07/16 08:56 AM	73059

Lab Order: 1512359
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1512359-07A	BMW-18	12/30/15 05:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-18	12/30/15 05:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/04/16 01:35 PM	73017
1512359-07D	BMW-18	12/30/15 05:15 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-18	12/30/15 05:15 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-18	12/30/15 05:15 PM	Aqueous	M4500-H+ B	pH Preparation	01/04/16 08:46 AM	72998
	BMW-18	12/30/15 05:15 PM	Aqueous	M2540C	TDS Preparation	01/05/16 01:09 PM	73034
1512359-08A	BMW-19	12/30/15 04:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/07/16 08:56 AM	73059
	BMW-19	12/30/15 04:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-19	12/30/15 04:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-19	12/30/15 04:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	01/12/16 09:16 AM	73098
	BMW-19	12/30/15 04:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/04/16 01:35 PM	73017
1512359-08D	BMW-19	12/30/15 04:15 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-19	12/30/15 04:15 PM	Aqueous	E300	Anion Preparation	01/05/16 10:13 AM	73028
	BMW-19	12/30/15 04:15 PM	Aqueous	M4500-H+ B	pH Preparation	01/04/16 08:46 AM	72998
	BMW-19	12/30/15 04:15 PM	Aqueous	M2540C	TDS Preparation	01/05/16 01:09 PM	73034

Lab Order: 1512359
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1512359-01A	BMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	73017	1	01/05/16 10:46 AM	CETAC2_HG_160105C
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73059	1	01/11/16 02:48 PM	ICP-MS4_160111D
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	10	01/13/16 12:22 PM	ICP-MS4_160113A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/13/16 01:35 PM	ICP-MS4_160113B
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/14/16 12:25 PM	ICP-MS4_160114A
1512359-01D	BMW-20	Aqueous	E300	Anions by IC method - Water	73028	1	01/05/16 12:13 PM	IC3_160105A
	BMW-20	Aqueous	E300	Anions by IC method - Water	73028	10	01/05/16 05:04 PM	IC3_160105A
	BMW-20	Aqueous	M4500-H+ B	pH	72998	1	01/04/16 09:36 AM	TITRATOR_160104A
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	73034	1	01/06/16 08:10 AM	WC_160105C
1512359-02A	BMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	73017	1	01/05/16 10:57 AM	CETAC2_HG_160105C
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73059	1	01/11/16 02:50 PM	ICP-MS4_160111D
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	10	01/13/16 12:24 PM	ICP-MS4_160113A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/13/16 01:37 PM	ICP-MS4_160113B
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/14/16 12:27 PM	ICP-MS4_160114A
1512359-02D	BMW-21	Aqueous	E300	Anions by IC method - Water	73028	1	01/05/16 12:33 PM	IC3_160105A
	BMW-21	Aqueous	E300	Anions by IC method - Water	73028	100	01/05/16 05:25 PM	IC3_160105A
	BMW-21	Aqueous	M4500-H+ B	pH	72998	1	01/04/16 09:39 AM	TITRATOR_160104A
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	73034	1	01/06/16 08:10 AM	WC_160105C
1512359-03A	BMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	73017	1	01/05/16 11:00 AM	CETAC2_HG_160105C
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73059	1	01/11/16 02:52 PM	ICP-MS4_160111D
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	10	01/13/16 12:26 PM	ICP-MS4_160113A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/13/16 01:39 PM	ICP-MS4_160113B
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	5	01/14/16 12:29 PM	ICP-MS4_160114A
1512359-03D	BMW-22	Aqueous	E300	Anions by IC method - Water	73028	1	01/05/16 12:54 PM	IC3_160105A
	BMW-22	Aqueous	E300	Anions by IC method - Water	73028	100	01/05/16 05:45 PM	IC3_160105A
	BMW-22	Aqueous	M4500-H+ B	pH	72998	1	01/04/16 09:42 AM	TITRATOR_160104A

Lab Order: 1512359
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1512359-03D	BMW-22	Aqueous	M2540C	Total Dissolved Solids	73034	1	01/06/16 08:10 AM	WC_160105C
1512359-04A	BMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	73017	1	01/05/16 11:02 AM	CETAC2_HG_160105C
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73059	1	01/11/16 02:54 PM	ICP-MS4_160111D
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	10	01/13/16 12:28 PM	ICP-MS4_160113A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/13/16 01:41 PM	ICP-MS4_160113B
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/14/16 12:31 PM	ICP-MS4_160114A
1512359-04D	BMW-23	Aqueous	E300	Anions by IC method - Water	73028	1	01/05/16 01:15 PM	IC3_160105A
	BMW-23	Aqueous	E300	Anions by IC method - Water	73028	100	01/05/16 06:06 PM	IC3_160105A
	BMW-23	Aqueous	M4500-H+ B	pH	72998	1	01/04/16 09:43 AM	TITRATOR_160104A
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	73034	1	01/06/16 08:10 AM	WC_160105C
1512359-05A	BMW-24	Aqueous	SW7470A	Mercury Total: Aqueous	73017	1	01/05/16 11:04 AM	CETAC2_HG_160105C
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73059	1	01/11/16 02:56 PM	ICP-MS4_160111D
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	10	01/13/16 12:30 PM	ICP-MS4_160113A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/13/16 01:43 PM	ICP-MS4_160113B
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/14/16 12:33 PM	ICP-MS4_160114A
1512359-05D	BMW-24	Aqueous	E300	Anions by IC method - Water	73028	1	01/05/16 01:35 PM	IC3_160105A
	BMW-24	Aqueous	E300	Anions by IC method - Water	73028	100	01/05/16 06:26 PM	IC3_160105A
	BMW-24	Aqueous	M4500-H+ B	pH	72998	1	01/04/16 09:45 AM	TITRATOR_160104A
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	73034	1	01/06/16 08:10 AM	WC_160105C
1512359-06A	BMW-11AR	Aqueous	SW7470A	Mercury Total: Aqueous	73017	1	01/05/16 11:07 AM	CETAC2_HG_160105C
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73059	1	01/11/16 02:58 PM	ICP-MS4_160111D
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	10	01/13/16 12:58 PM	ICP-MS4_160113A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/13/16 01:45 PM	ICP-MS4_160113B
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/14/16 12:35 PM	ICP-MS4_160114A
1512359-06D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	73028	1	01/05/16 01:56 PM	IC3_160105A
	BMW-11AR	Aqueous	M4500-H+ B	pH	72998	1	01/04/16 09:48 AM	TITRATOR_160104A

Lab Order: 1512359
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1512359-06D	BMW-11AR	Aqueous	M2540C	Total Dissolved Solids	73034	1	01/06/16 08:10 AM	WC_160105C
1512359-07A	BMW-18	Aqueous	SW7470A	Mercury Total: Aqueous	73017	1	01/05/16 11:09 AM	CETAC2_HG_160105C
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73059	1	01/11/16 03:00 PM	ICP-MS4_160111D
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	50	01/13/16 01:00 PM	ICP-MS4_160113A
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/13/16 01:47 PM	ICP-MS4_160113B
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/14/16 12:37 PM	ICP-MS4_160114A
1512359-07D	BMW-18	Aqueous	E300	Anions by IC method - Water	73028	1	01/05/16 02:16 PM	IC3_160105A
	BMW-18	Aqueous	E300	Anions by IC method - Water	73028	100	01/05/16 07:28 PM	IC3_160105A
	BMW-18	Aqueous	M4500-H+ B	pH	72998	1	01/04/16 09:49 AM	TITRATOR_160104A
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	73034	1	01/06/16 08:10 AM	WC_160105C
1512359-08A	BMW-19	Aqueous	SW7470A	Mercury Total: Aqueous	73017	1	01/05/16 11:11 AM	CETAC2_HG_160105C
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	50	01/13/16 01:02 PM	ICP-MS4_160113A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/13/16 01:49 PM	ICP-MS4_160113B
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73098	1	01/14/16 12:39 PM	ICP-MS4_160114A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73059	1	01/11/16 03:02 PM	ICP-MS4_160111D
1512359-08D	BMW-19	Aqueous	E300	Anions by IC method - Water	73028	1	01/05/16 02:37 PM	IC3_160105A
	BMW-19	Aqueous	E300	Anions by IC method - Water	73028	100	01/05/16 07:49 PM	IC3_160105A
	BMW-19	Aqueous	M4500-H+ B	pH	72998	1	01/04/16 09:51 AM	TITRATOR_160104A
	BMW-19	Aqueous	M2540C	Total Dissolved Solids	73034	1	01/06/16 08:10 AM	WC_160105C

DHL Analytical, Inc.

Date: 03-Feb-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1512359

Client Sample ID: BMW-20
Lab ID: 1512359-01
Collection Date: 12/30/15 10:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	01/05/16 10:46 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/11/16 02:48 PM
Arsenic	0.00344	0.00200	0.00500	J	mg/L	1	01/11/16 02:48 PM
Barium	0.0777	0.00300	0.0100		mg/L	1	01/11/16 02:48 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:48 PM
Boron	0.144	0.0100	0.0300		mg/L	1	01/14/16 12:25 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:48 PM
Calcium	96.0	1.00	3.00		mg/L	10	01/13/16 12:22 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/13/16 01:35 PM
Cobalt	0.0510	0.00300	0.00500		mg/L	1	01/11/16 02:48 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:48 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	01/11/16 02:48 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:48 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:48 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/11/16 02:48 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	36.4	0.300	1.00		mg/L	1	01/05/16 12:13 PM
Fluoride	0.120	0.100	0.400	J	mg/L	1	01/05/16 12:13 PM
Sulfate	443	10.0	30.0		mg/L	10	01/05/16 05:04 PM
PH							
M4500-H+ B				Analyst: LM			
pH	5.97	0	0		pH Units@13.7°C	1	01/04/16 09:36 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	987	10.0	10.0		mg/L	1	01/06/16 08:10 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-Feb-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1512359

Client Sample ID: BMW-21
Lab ID: 1512359-02
Collection Date: 12/30/15 11:10 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	01/05/16 10:57 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/11/16 02:50 PM
Arsenic	0.00247	0.00200	0.00500	J	mg/L	1	01/11/16 02:50 PM
Barium	0.0478	0.00300	0.0100		mg/L	1	01/11/16 02:50 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:50 PM
Boron	0.951	0.0100	0.0300		mg/L	1	01/14/16 12:27 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:50 PM
Calcium	142	1.00	3.00		mg/L	10	01/13/16 12:24 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/13/16 01:37 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	01/11/16 02:50 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:50 PM
Lithium	0.0602	0.00500	0.0100		mg/L	1	01/11/16 02:50 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:50 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:50 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/11/16 02:50 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	365	30.0	100		mg/L	100	01/05/16 05:25 PM
Fluoride	0.126	0.100	0.400	J	mg/L	1	01/05/16 12:33 PM
Sulfate	444	100	300		mg/L	100	01/05/16 05:25 PM
PH							
M4500-H+ B				Analyst: LM			
pH	7.21	0	0		pH Units@14.4°C	1	01/04/16 09:39 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	2020	50.0	50.0		mg/L	1	01/06/16 08:10 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-Feb-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1512359

Client Sample ID: BMW-22
Lab ID: 1512359-03
Collection Date: 12/30/15 12:00 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	01/05/16 11:00 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/11/16 02:52 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:52 PM
Barium	0.0840	0.00300	0.0100		mg/L	1	01/11/16 02:52 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:52 PM
Boron	2.54	0.0500	0.150		mg/L	5	01/14/16 12:29 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:52 PM
Calcium	150	1.00	3.00		mg/L	10	01/13/16 12:26 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/13/16 01:39 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	01/11/16 02:52 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:52 PM
Lithium	0.0594	0.00500	0.0100		mg/L	1	01/11/16 02:52 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:52 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:52 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/11/16 02:52 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	215	30.0	100		mg/L	100	01/05/16 05:45 PM
Fluoride	0.186	0.100	0.400	J	mg/L	1	01/05/16 12:54 PM
Sulfate	670	100	300		mg/L	100	01/05/16 05:45 PM
PH							
M4500-H+ B				Analyst: LM			
pH	7.34	0	0		pH Units@14.9°C	1	01/04/16 09:42 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	1870	50.0	50.0		mg/L	1	01/06/16 08:10 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-Feb-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1512359

Client Sample ID: BMW-23
Lab ID: 1512359-04
Collection Date: 12/30/15 12:50 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	01/05/16 11:02 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/11/16 02:54 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:54 PM
Barium	0.0462	0.00300	0.0100		mg/L	1	01/11/16 02:54 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:54 PM
Boron	1.25	0.0100	0.0300		mg/L	1	01/14/16 12:31 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:54 PM
Calcium	95.2	1.00	3.00		mg/L	10	01/13/16 12:28 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/13/16 01:41 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	01/11/16 02:54 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:54 PM
Lithium	0.0897	0.00500	0.0100		mg/L	1	01/11/16 02:54 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:54 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:54 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/11/16 02:54 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	214	30.0	100		mg/L	100	01/05/16 06:06 PM
Fluoride	0.122	0.100	0.400	J	mg/L	1	01/05/16 01:15 PM
Sulfate	529	100	300		mg/L	100	01/05/16 06:06 PM
PH							
M4500-H+ B				Analyst: LM			
pH	6.62	0	0		pH Units@14.8°C	1	01/04/16 09:43 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	1500	50.0	50.0		mg/L	1	01/06/16 08:10 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-Feb-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1512359

Client Sample ID: BMW-24
Lab ID: 1512359-05
Collection Date: 12/30/15 01:45 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	01/05/16 11:04 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/11/16 02:56 PM
Arsenic	0.00579	0.00200	0.00500		mg/L	1	01/11/16 02:56 PM
Barium	0.801	0.00300	0.0100		mg/L	1	01/11/16 02:56 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:56 PM
Boron	0.347	0.0100	0.0300		mg/L	1	01/14/16 12:33 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:56 PM
Calcium	58.8	1.00	3.00		mg/L	10	01/13/16 12:30 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/13/16 01:43 PM
Cobalt	0.0146	0.00300	0.00500		mg/L	1	01/11/16 02:56 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:56 PM
Lithium	0.0161	0.00500	0.0100		mg/L	1	01/11/16 02:56 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:56 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:56 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/11/16 02:56 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	404	30.0	100		mg/L	100	01/05/16 06:26 PM
Fluoride	0.391	0.100	0.400	J	mg/L	1	01/05/16 01:35 PM
Sulfate	125	1.00	3.00		mg/L	1	01/05/16 01:35 PM
PH							
M4500-H+ B				Analyst: LM			
pH	6.35	0	0		pH Units@14.3°C	1	01/04/16 09:45 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	1210	50.0	50.0		mg/L	1	01/06/16 08:10 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-Feb-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1512359

Client Sample ID: BMW-11AR
Lab ID: 1512359-06
Collection Date: 12/30/15 02:55 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
		SW7470A					Analyst: ABO
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	01/05/16 11:07 AM
TRACE METALS: ICP-MS - WATER							
		SW6020A					Analyst: RO
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/11/16 02:58 PM
Arsenic	0.00362	0.00200	0.00500	J	mg/L	1	01/11/16 02:58 PM
Barium	0.0433	0.00300	0.0100		mg/L	1	01/11/16 02:58 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:58 PM
Boron	0.285	0.0100	0.0300		mg/L	1	01/14/16 12:35 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 02:58 PM
Calcium	92.3	1.00	3.00		mg/L	10	01/13/16 12:58 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/13/16 01:45 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	01/11/16 02:58 PM
Lead	0.000362	0.000300	0.00100	J	mg/L	1	01/11/16 02:58 PM
Lithium	0.0589	0.00500	0.0100		mg/L	1	01/11/16 02:58 PM
Molybdenum	0.00384	0.00200	0.00500	J	mg/L	1	01/11/16 02:58 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 02:58 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/11/16 02:58 PM
ANIONS BY IC METHOD - WATER							
		E300					Analyst: AV
Chloride	2.39	0.300	1.00		mg/L	1	01/05/16 01:56 PM
Fluoride	0.260	0.100	0.400	J	mg/L	1	01/05/16 01:56 PM
Sulfate	114	1.00	3.00		mg/L	1	01/05/16 01:56 PM
PH							
		M4500-H+ B					Analyst: LM
pH	6.92	0	0		pH Units@14.7°C	1	01/04/16 09:48 AM
TOTAL DISSOLVED SOLIDS							
		M2540C					Analyst: BJT
Total Dissolved Solids (Residue, Filterable)	642	10.0	10.0		mg/L	1	01/06/16 08:10 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-Feb-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1512359

Client Sample ID: BMW-18
Lab ID: 1512359-07
Collection Date: 12/30/15 05:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	01/05/16 11:09 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/11/16 03:00 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 03:00 PM
Barium	0.0168	0.00300	0.0100		mg/L	1	01/11/16 03:00 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 03:00 PM
Boron	0.322	0.0100	0.0300		mg/L	1	01/14/16 12:37 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 03:00 PM
Calcium	346	5.00	15.0		mg/L	50	01/13/16 01:00 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/13/16 01:47 PM
Cobalt	0.0129	0.00300	0.00500		mg/L	1	01/11/16 03:00 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 03:00 PM
Lithium	0.0415	0.00500	0.0100		mg/L	1	01/11/16 03:00 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 03:00 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 03:00 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/11/16 03:00 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	7.14	0.300	1.00		mg/L	1	01/05/16 02:16 PM
Fluoride	0.101	0.100	0.400	J	mg/L	1	01/05/16 02:16 PM
Sulfate	1570	100	300		mg/L	100	01/05/16 07:28 PM
PH							
M4500-H+ B				Analyst: LM			
pH	6.71	0	0		pH Units@14.7°C	1	01/04/16 09:49 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	2470	50.0	50.0		mg/L	1	01/06/16 08:10 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-Feb-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1512359

Client Sample ID: BMW-19
Lab ID: 1512359-08
Collection Date: 12/30/15 04:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: ABO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	01/05/16 11:11 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	01/11/16 03:02 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 03:02 PM
Barium	0.0222	0.00300	0.0100		mg/L	1	01/11/16 03:02 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 03:02 PM
Boron	0.400	0.0100	0.0300		mg/L	1	01/14/16 12:39 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 03:02 PM
Calcium	441	5.00	15.0		mg/L	50	01/13/16 01:02 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	01/13/16 01:49 PM
Cobalt	0.0166	0.00300	0.00500		mg/L	1	01/11/16 03:02 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	01/11/16 03:02 PM
Lithium	0.0506	0.00500	0.0100		mg/L	1	01/11/16 03:02 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 03:02 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	01/11/16 03:02 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	01/11/16 03:02 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	11.4	0.300	1.00		mg/L	1	01/05/16 02:37 PM
Fluoride	0.127	0.100	0.400	J	mg/L	1	01/05/16 02:37 PM
Sulfate	2100	100	300		mg/L	100	01/05/16 07:49 PM
PH							
M4500-H+ B				Analyst: LM			
pH	6.63	0	0		pH Units@15.3°C	1	01/04/16 09:51 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: BJT			
Total Dissolved Solids (Residue, Filterable)	3260	50.0	50.0		mg/L	1	01/06/16 08:10 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: 1512359

Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160105C

The QC data in batch 73017 applies to the following samples: 1512359-01A, 1512359-02A, 1512359-03A, 1512359-04A, 1512359-05A, 1512359-06A, 1512359-07A, 1512359-08A

Sample ID	MB-73017	Batch ID:	73017	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 10:19:00 AM	Prep Date:	1/4/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	1512359-01A SD	Batch ID:	73017	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 10:48:49 AM	Prep Date:	1/4/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.000400 0.00100 0 0 0 10

Sample ID	1512359-01A PDS	Batch ID:	73017	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 10:51:05 AM	Prep Date:	1/4/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00152 0.000200 0.00250 0 60.8 85 115 S

Sample ID	LCS-73017	Batch ID:	73017	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 1:11:24 PM	Prep Date:	1/4/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00210 0.000200 0.00200 0 105 85 115

Sample ID	LCSD-73017	Batch ID:	73017	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 1:13:40 PM	Prep Date:	1/4/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00214 0.000200 0.00200 0 107 85 115 1.89 15

Sample ID	1512359-01A MS	Batch ID:	73017	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 1:18:35 PM	Prep Date:	1/4/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00151 0.000200 0.00200 0 75.5 80 120 S

Sample ID	1512359-01A MSD	Batch ID:	73017	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 1:20:52 PM	Prep Date:	1/4/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00154 0.000200 0.00200 0 77.0 80 120 1.97 15 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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160105C

Sample ID	ICV-160105	Batch ID:	R83468	TestNo:	SW7470A	Units:	mg/L
SampType:	ICV	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 9:54:02 AM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Mercury	0.00405	0.000200	0.00400	0	101	90	110

Sample ID	CCV1-160105	Batch ID:	R83468	TestNo:	SW7470A	Units:	mg/L
SampType:	CCV	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 10:33:39 AM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Mercury	0.00200	0.000200	0.00200	0	100	90	110

Sample ID	CCV2-160105	Batch ID:	R83468	TestNo:	SW7470A	Units:	mg/L
SampType:	CCV	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 10:53:23 AM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Mercury	0.00200	0.000200	0.00200	0	100	90	110

Sample ID	CCV3-160105	Batch ID:	R83468	TestNo:	SW7470A	Units:	mg/L
SampType:	CCV	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 11:13:54 AM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Mercury	0.00201	0.000200	0.00200	0	101	90	110

Sample ID	CCV4-160105	Batch ID:	R83468	TestNo:	SW7470A	Units:	mg/L
SampType:	CCV	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 1:06:50 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Mercury	0.00208	0.000200	0.00200	0	104	90	110

Sample ID	CCV5-160105	Batch ID:	R83468	TestNo:	SW7470A	Units:	mg/L
SampType:	CCV	Run ID:	CETAC2_HG_160105C	Analysis Date:	1/5/2016 1:23:10 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Mercury	0.00207	0.000200	0.00200	0	104	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160111D

The QC data in batch 73059 applies to the following samples: 1512359-01A, 1512359-02A, 1512359-03A, 1512359-04A, 1512359-05A, 1512359-06A, 1512359-07A, 1512359-08A

Sample ID	MB-73059		Batch ID:	73059		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160111D		Analysis Date:	1/11/2016 2:32:00 PM		Prep Date:	1/7/2016	
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								
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	LCS-73059		Batch ID:	73059		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS4_160111D		Analysis Date:	1/11/2016 2:34:00 PM		Prep Date:	1/7/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.189	0.00250	0.200	0	94.3	80	120			
Arsenic	0.200	0.00500	0.200	0	99.8	80	120			
Barium	0.192	0.0100	0.200	0	96.0	80	120			
Beryllium	0.208	0.00100	0.200	0	104	80	120			
Cadmium	0.192	0.00100	0.200	0	96.0	80	120			
Calcium	4.41	0.300	5.00	0	88.1	80	120			
Cobalt	0.205	0.00500	0.200	0	102	80	120			
Lead	0.188	0.00100	0.200	0	94.0	80	120			
Lithium	0.211	0.0100	0.200	0	105	80	120			
Molybdenum	0.185	0.00500	0.200	0	92.5	80	120			
Selenium	0.196	0.00500	0.200	0	98.2	80	120			
Thallium	0.197	0.00150	0.200	0	98.6	80	120			

Sample ID	LCSD-73059		Batch ID:	73059		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD		Run ID:	ICP-MS4_160111D		Analysis Date:	1/11/2016 2:36:00 PM		Prep Date:	1/7/2016	
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	0.620	15	
Arsenic	0.201	0.00500	0.200	0	101	80	120	0.909	15	
Barium	0.194	0.0100	0.200	0	97.2	80	120	1.17	15	
Beryllium	0.215	0.00100	0.200	0	107	80	120	3.16	15	
Cadmium	0.193	0.00100	0.200	0	96.4	80	120	0.461	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160111D

Sample ID	LCSD-73059	Batch ID:	73059	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 2:36:00 PM	Prep Date:	1/7/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.48	0.300	5.00	0	89.7	80	120	1.75	15	
Cobalt	0.207	0.00500	0.200	0	103	80	120	0.890	15	
Lead	0.188	0.00100	0.200	0	94.0	80	120	0.021	15	
Lithium	0.216	0.0100	0.200	0	108	80	120	2.26	15	
Molybdenum	0.188	0.00500	0.200	0	93.9	80	120	1.53	15	
Selenium	0.201	0.00500	0.200	0	101	80	120	2.30	15	
Thallium	0.197	0.00150	0.200	0	98.4	80	120	0.204	15	

Sample ID	1512358-01A SD	Batch ID:	73059	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 2:44:00 PM	Prep Date:	1/7/2016			
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	0.0421	0.0500	0	0.0432				2.40	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	<0.0250	0.0500	0	0.00515				0	10	
Molybdenum	0.0897	0.0250	0	0.0917				2.17	10	
Selenium	0.0205	0.0250	0	0.0223				8.54	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID	1512358-01A PDS	Batch ID:	73059	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 3:04:00 PM	Prep Date:	1/7/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.180	0.00250	0.200	0	89.9	80	120			
Arsenic	0.204	0.00500	0.200	0	102	80	120			
Barium	0.229	0.0100	0.200	0.0432	93.0	80	120			
Beryllium	0.202	0.00100	0.200	0	101	80	120			
Cadmium	0.184	0.00100	0.200	0	92.2	80	120			
Cobalt	0.201	0.00500	0.200	0	101	80	120			
Lead	0.192	0.00100	0.200	0	95.9	80	120			
Lithium	0.202	0.0100	0.200	0.00515	98.2	80	120			
Molybdenum	0.267	0.00500	0.200	0.0917	87.7	80	120			
Selenium	0.218	0.00500	0.200	0.0223	98.1	80	120			
Thallium	0.191	0.00150	0.200	0	95.4	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160111D

Sample ID	1512358-01A MS	Batch ID:	73059	TestNo:	SW6020A	Units:	mg/L				
SampType:	MS	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 3:06:00 PM	Prep Date:	1/7/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.191	0.00250	0.200	0	95.4	80	120			
Arsenic	0.204	0.00500	0.200	0	102	80	120			
Barium	0.234	0.0100	0.200	0.0432	95.2	80	120			
Beryllium	0.200	0.00100	0.200	0	100	80	120			
Cadmium	0.186	0.00100	0.200	0	92.8	80	120			
Calcium	146	0.300	5.00	143	53.2	80	120			S
Cobalt	0.197	0.00500	0.200	0	98.3	80	120			
Lead	0.183	0.00100	0.200	0	91.7	80	120			
Lithium	0.201	0.0100	0.200	0.00515	97.8	80	120			
Molybdenum	0.279	0.00500	0.200	0.0917	93.5	80	120			
Selenium	0.219	0.00500	0.200	0.0223	98.4	80	120			
Thallium	0.186	0.00150	0.200	0	92.9	80	120			

Sample ID	1512358-01A MSD	Batch ID:	73059	TestNo:	SW6020A	Units:	mg/L				
SampType:	MSD	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 3:08:00 PM	Prep Date:	1/7/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.189	0.00250	0.200	0	94.7	80	120	0.732	15	
Arsenic	0.206	0.00500	0.200	0	103	80	120	0.647	15	
Barium	0.234	0.0100	0.200	0.0432	95.4	80	120	0.157	15	
Beryllium	0.196	0.00100	0.200	0	98.2	80	120	1.94	15	
Cadmium	0.185	0.00100	0.200	0	92.3	80	120	0.502	15	
Calcium	143	0.300	5.00	143	-5.27	80	120	2.02	15	S
Cobalt	0.197	0.00500	0.200	0	98.5	80	120	0.267	15	
Lead	0.187	0.00100	0.200	0	93.6	80	120	2.11	15	
Lithium	0.199	0.0100	0.200	0.00515	97.1	80	120	0.645	15	
Molybdenum	0.276	0.00500	0.200	0.0917	92.1	80	120	1.07	15	
Selenium	0.221	0.00500	0.200	0.0223	99.5	80	120	1.06	15	
Thallium	0.189	0.00150	0.200	0	94.6	80	120	1.75	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160111D

Sample ID	ICV-160111	Batch ID:	R83551	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 10:49:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.0973	0.00250	0.100	0	97.3	90	110			
Arsenic	0.102	0.00500	0.100	0	102	90	110			
Barium	0.0990	0.0100	0.100	0	99.0	90	110			
Beryllium	0.102	0.00100	0.100	0	102	90	110			
Cadmium	0.100	0.00100	0.100	0	100	90	110			
Calcium	2.33	0.300	2.50	0	93.2	90	110			
Chromium	0.106	0.00500	0.100	0	106	90	110			
Cobalt	0.107	0.00500	0.100	0	107	90	110			
Lead	0.102	0.00100	0.100	0	102	90	110			
Lithium	0.102	0.0100	0.100	0	102	90	110			
Molybdenum	0.0958	0.00500	0.100	0	95.8	90	110			
Selenium	0.102	0.00500	0.100	0	102	90	110			
Thallium	0.100	0.00150	0.100	0	100	90	110			

Sample ID	LCVL-160111	Batch ID:	R83551	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 10:55:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00192	0.00250	0.00200	0	96.2	70	130			
Arsenic	0.00501	0.00500	0.00500	0	100	70	130			
Barium	0.00489	0.0100	0.00500	0	97.8	70	130			
Beryllium	0.000903	0.00100	0.00100	0	90.3	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	0.00507	0.00500	0.00500	0	101	70	130			
Cobalt	0.00526	0.00500	0.00500	0	105	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0111	0.0100	0.0100	0	111	70	130			
Molybdenum	0.00470	0.00500	0.00500	0	94.1	70	130			
Selenium	0.00477	0.00500	0.00500	0	95.3	70	130			
Thallium	0.000974	0.00150	0.00100	0	97.4	70	130			

Sample ID	CCV5-160111	Batch ID:	R83551	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 2:10:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.192	0.00250	0.200	0	96.2	90	110			
Arsenic	0.209	0.00500	0.200	0	105	90	110			
Barium	0.196	0.0100	0.200	0	98.1	90	110			
Beryllium	0.213	0.00100	0.200	0	106	90	110			
Cadmium	0.196	0.00100	0.200	0	98.0	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160111D

Sample ID	CCV5-160111	Batch ID:	R83551	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 2:10:00 PM	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			
Chromium	0.208	0.00500	0.200	0	104	90	110			
Cobalt	0.213	0.00500	0.200	0	106	90	110			
Lead	0.199	0.00100	0.200	0	99.4	90	110			
Lithium	0.217	0.0100	0.200	0	109	90	110			
Molybdenum	0.191	0.00500	0.200	0	95.4	90	110			
Selenium	0.204	0.00500	0.200	0	102	90	110			
Thallium	0.209	0.00150	0.200	0	104	90	110			

Sample ID	LCVL5-160111	Batch ID:	R83551	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 2:24:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00184	0.00250	0.00200	0	92.0	70	130			
Arsenic	0.00501	0.00500	0.00500	0	100	70	130			
Barium	0.00475	0.0100	0.00500	0	95.0	70	130			
Beryllium	0.00108	0.00100	0.00100	0	108	70	130			
Cadmium	0.000993	0.00100	0.00100	0	99.3	70	130			
Calcium	0.0996	0.300	0.100	0	99.6	70	130			
Chromium	0.00499	0.00500	0.00500	0	99.8	70	130			
Cobalt	0.00523	0.00500	0.00500	0	105	70	130			
Lead	0.000903	0.00100	0.00100	0	90.3	70	130			
Lithium	0.0108	0.0100	0.0100	0	108	70	130			
Molybdenum	0.00459	0.00500	0.00500	0	91.8	70	130			
Selenium	0.00502	0.00500	0.00500	0	100	70	130			
Thallium	0.000948	0.00150	0.00100	0	94.8	70	130			

Sample ID	CCV6-160111	Batch ID:	R83551	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 3:18:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.194	0.00250	0.200	0	97.0	90	110			
Arsenic	0.209	0.00500	0.200	0	105	90	110			
Barium	0.197	0.0100	0.200	0	98.6	90	110			
Beryllium	0.213	0.00100	0.200	0	106	90	110			
Cadmium	0.194	0.00100	0.200	0	97.1	90	110			
Calcium	4.70	0.300	5.00	0	94.0	90	110			
Cobalt	0.208	0.00500	0.200	0	104	90	110			
Lead	0.194	0.00100	0.200	0	97.2	90	110			
Lithium	0.204	0.0100	0.200	0	102	90	110			
Molybdenum	0.189	0.00500	0.200	0	94.5	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160111D

Sample ID	CCV6-160111	Batch ID:	R83551	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160111D	Analysis Date:	1/11/2016 3:18:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium		0.207	0.00500	0.200	0	103	90	110			
Thallium		0.207	0.00150	0.200	0	104	90	110			

Sample ID	LCVL6-160111	Batch ID:	R83551	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160111D	Analysis Date: 1/11/2016 3:25:00 PM		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		0.00505	0.00500	0.00500	0	101	70	130			
Barium		0.00477	0.0100	0.00500	0	95.5	70	130			
Beryllium		0.000866	0.00100	0.00100	0	86.6	70	130			
Cadmium		0.000940	0.00100	0.00100	0	94.0	70	130			
Calcium		0.102	0.300	0.100	0	102	70	130			
Cobalt		0.00509	0.00500	0.00500	0	102	70	130			
Lead		0.000884	0.00100	0.00100	0	88.4	70	130			
Lithium		0.0105	0.0100	0.0100	0	105	70	130			
Molybdenum		0.00456	0.00500	0.00500	0	91.2	70	130			
Selenium		0.00522	0.00500	0.00500	0	104	70	130			
Thallium		0.000950	0.00150	0.00100	0	95.0	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160113A

The QC data in batch 73098 applies to the following samples: 1512359-01A, 1512359-02A, 1512359-03A, 1512359-04A, 1512359-05A, 1512359-06A, 1512359-07A, 1512359-08A

Sample ID	MB-73098	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	MBLK	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:08:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Chromium <0.00200 0.00500

Sample ID	LCS-73098	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCS	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:10:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Chromium 0.199 0.00500 0.200 0 99.7 80 120

Sample ID	LCSD-73098	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:12:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Chromium 0.199 0.00500 0.200 0 99.3 80 120 0.436 15

Sample ID	1512358-01A SD	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:18:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Calcium 151 15.0 0 152 0.731 10

Sample ID	1512358-01A PDS	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:38:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Calcium 197 3.00 50.0 152 89.0 80 120

Sample ID	1512358-01A MS	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:40:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Chromium 0.203 0.0500 0.200 0 101 80 120

Sample ID	1512358-01A MSD	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:43:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Chromium 0.216 0.0500 0.200 0 108 80 120 6.18 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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160113A

Sample ID	ICV-160113	Batch ID:	R83584	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 10:49:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.31	0.300	2.50	0	92.5	90	110			
Chromium	0.106	0.00500	0.100	0	106	90	110			

Sample ID	LCVL-160113	Batch ID:	R83584	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 10:54:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0992	0.300	0.100	0	99.2	70	130			
Chromium	0.00532	0.00500	0.00500	0	106	70	130			

Sample ID	CCV1-160113	Batch ID:	R83584	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 11:45:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.83	0.300	5.00	0	96.6	90	110			
Chromium	0.202	0.00500	0.200	0	101	90	110			

Sample ID	LCVL1-160113	Batch ID:	R83584	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:04:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0971	0.300	0.100	0	97.1	70	130			
Chromium	0.00514	0.00500	0.00500	0	103	70	130			

Sample ID	CCV2-160113	Batch ID:	R83584	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:45:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.84	0.300	5.00	0	96.9	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			

Sample ID	LCVL2-160113	Batch ID:	R83584	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 12:52:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0976	0.300	0.100	0	97.6	70	130			
Chromium	0.00522	0.00500	0.00500	0	104	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160113A

Sample ID	CCV3-160113	Batch ID:	R83584	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 1:14:00 PM	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			

Sample ID	LCVL3-160113	Batch ID:	R83584	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160113A	Analysis Date:	1/13/2016 1:19:00 PM	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			

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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160113B

The QC data in batch 73098 applies to the following samples: 1512359-01A, 1512359-02A, 1512359-03A, 1512359-04A, 1512359-05A, 1512359-06A, 1512359-07A, 1512359-08A

Sample ID	1512358-01A SD	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160113B	Analysis Date:	1/13/2016 1:31:00 PM	Prep Date:	1/12/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	<0.0100	0.0250	0	0				0	10	

Sample ID	1512358-01A PDS	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160113B	Analysis Date:	1/13/2016 1:51:00 PM	Prep Date:	1/12/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chromium	0.205	0.00500	0.200	0	103	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160113B

Sample ID	ICV-160113	Batch ID:	R83590	TestNo:	SW6020A	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS4_160113B	Analysis Date:	1/13/2016 10:49:00 AM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Chromium	0.106	0.00500	0.100	0	106	90	110

Sample ID	LCVL-160113	Batch ID:	R83590	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160113B	Analysis Date:	1/13/2016 10:54:00 AM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Chromium	0.00532	0.00500	0.00500	0	106	70	130

Sample ID	CCV3-160113	Batch ID:	R83590	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160113B	Analysis Date:	1/13/2016 1:14:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Chromium	0.204	0.00500	0.200	0	102	90	110

Sample ID	LCVL3-160113	Batch ID:	R83590	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160113B	Analysis Date:	1/13/2016 1:19:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Chromium	0.00523	0.00500	0.00500	0	105	70	130

Sample ID	CCV4-160113	Batch ID:	R83590	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160113B	Analysis Date:	1/13/2016 1:52:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Chromium	0.201	0.00500	0.200	0	101	90	110

Sample ID	LCVL4-160113	Batch ID:	R83590	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160113B	Analysis Date:	1/13/2016 1:57:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Chromium	0.00517	0.00500	0.00500	0	103	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160114A

The QC data in batch 73098 applies to the following samples: 1512359-01A, 1512359-02A, 1512359-03A, 1512359-04A, 1512359-05A, 1512359-06A, 1512359-07A, 1512359-08A

Sample ID	MB-73098	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	MBLK	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:11:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron <0.0100 0.0300

Sample ID	LCS-73098	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCS	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:13:00 PM	Prep Date:	1/12/2016			
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

Sample ID	LCSD-73098	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:15:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 0.208 0.0300 0.200 0 104 80 120 4.16 15

Sample ID	1512358-01A SD	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:21:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 2.25 0.750 0 2.15 4.53 10

Sample ID	1512358-01A PDS	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:41:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 3.25 0.150 1.00 2.15 111 80 120

Sample ID	1512358-01A MS	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:43:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 2.45 0.150 0.200 2.15 153 80 120 S

Sample ID	1512358-01A MSD	Batch ID:	73098	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:45:00 PM	Prep Date:	1/12/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 2.44 0.150 0.200 2.15 146 80 120 0.611 15 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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160114A

Sample ID	ICV-160114	Batch ID:	R83608	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 11:55:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0967	0.0300	0.100	0	96.7	90	110			

Sample ID	LCVL-160114	Batch ID:	R83608	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:05:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0250	0.0300	0.0200	0	125	70	130			

Sample ID	CCV1-160114	Batch ID:	R83608	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 12:56:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.204	0.0300	0.200	0	102	90	110			

Sample ID	LCVL1-160114	Batch ID:	R83608	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160114A	Analysis Date:	1/14/2016 1:06:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0194	0.0300	0.0200	0	97.1	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_160105A

The QC data in batch 73028 applies to the following samples: 1512359-01D, 1512359-02D, 1512359-03D, 1512359-04D, 1512359-05D, 1512359-06D, 1512359-07D, 1512359-08D

Sample ID	MB-73028		Batch ID:	73028		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC3_160105A		Analysis Date:	1/5/2016 10:19:28 AM		Prep Date:	1/5/2016	
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	LCS-73028		Batch ID:	73028		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC3_160105A		Analysis Date:	1/5/2016 10:42:58 AM		Prep Date:	1/5/2016	
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	4.22	0.400	4.000	0	105	90	110			
Sulfate	31.4	3.00	30.00	0	105	90	110			

Sample ID	LCSD-73028	Batch ID:	73028	TestNo:	E300	Units:	mg/L				
SampType:	LCSD	Run ID:	IC3_160105A	Analysis Date:	1/5/2016 11:03:37 AM	Prep Date:	1/5/2016				
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	0.021	20	
Fluoride	4.17	0.400	4.000	0	104	90	110	1.21	20	
Sulfate	31.1	3.00	30.00	0	104	90	110	0.827	20	

Sample ID	1512359-05DMS		Batch ID:	73028		TestNo:	E300		Units:	mg/L	
SampType:	MS		Run ID:	IC3_160105A		Analysis Date:	1/5/2016 6:47:32 PM		Prep Date:	1/5/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2350	100	2000	403.8	97.3	90	110			
Fluoride	1940	40.0	2000	0	96.9	90	110			
Sulfate	2140	300	2000	139.9	100	90	110			

Sample ID	1512359-05DMSD			Batch ID:	73028		TestNo:	E300		Units:	mg/L			
SampType:	MSD			Run ID:	IC3_160105A		Analysis Date:	1/5/2016 7:08:12 PM		Prep Date:	1/5/2016			
Analyte	Result			RL	SPK value		Ref Val	%REC		LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2350	100	2000	403.8	97.2	90	110	0.119	20	
Fluoride	1950	40.0	2000	0	97.7	90	110	0.892	20	
Sulfate	2190	300	2000	139.9	102	90	110	2.01	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_160105A

Sample ID	ICV-160105	Batch ID:	R83479	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC3_160105A	Analysis Date:	1/5/2016 9:26:37 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.3	1.00	25.00	0	97.2	90	110			
Fluoride	10.1	0.400	10.00	0	101	90	110			
Sulfate	76.0	3.00	75.00	0	101	90	110			

Sample ID	CCV1-160105	Batch ID:	R83479	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC3_160105A	Analysis Date:	1/5/2016 3:23:36 PM	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	4.15	0.400	4.000	0	104	90	110			
Sulfate	31.3	3.00	30.00	0	104	90	110			

Sample ID	CCV2-160105	Batch ID:	R83479	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC3_160105A	Analysis Date:	1/5/2016 8:30:45 PM	Prep Date:				
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	4.08	0.400	4.000	0	102	90	110			
Sulfate	30.7	3.00	30.00	0	102	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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160104A

The QC data in batch 72998 applies to the following samples: 1512359-01D, 1512359-02D, 1512359-03D, 1512359-04D, 1512359-05D, 1512359-06D, 1512359-07D, 1512359-08D

Sample ID	1512359-08D DUP	Batch ID:	72998	TestNo:	M4500-H+ B	Units:	pH	Units@16°C			
SampType:	DUP	Run ID:	TITRATOR_160104A	Analysis Date:	1/4/2016 9:55:00 AM	Prep Date:	1/4/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH		6.66	0	0	6.630				0.451	5	

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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160104A

Sample ID	ICV-160104	Batch ID:	R83452	TestNo:	M4500-H+ B	Units:	pH Units@20.4°C			
SampType:	ICV	Run ID:	TITRATOR_160104A	Analysis Date:	1/4/2016 9:22:00 AM	Prep Date:	1/4/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	9.95	0	10.00	0	99.5	99	101			

Sample ID	CCV1-160104	Batch ID:	R83452	TestNo:	M4500-H+ B	Units:	pH	Units@19.4°C		
SampType:	CCV	Run ID:	TITRATOR_160104A	Analysis Date:	1/4/2016 9:52:00 AM	Prep Date:	1/4/2016			
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	CCV2-160104			Batch ID:	R83452		TestNo:	M4500-H+ B		Units:	pH Units@20.7°C	
SampType:	CCV			Run ID:	TITRATOR_160104A		Analysis Date:	1/4/2016 10:36:00 AM		Prep Date:	1/4/2016	
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			

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: 1512359
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: WC_160105C

The QC data in batch 73034 applies to the following samples: 1512359-01D, 1512359-02D, 1512359-03D, 1512359-04D, 1512359-05D, 1512359-06D, 1512359-07D, 1512359-08D

Sample ID	MB-73034	Batch ID:	73034	TestNo:	M2540C	Units:	mg/L			
SampType:	MBLK	Run ID:	WC_160105C	Analysis Date:	1/6/2016 8:10:00 AM	Prep Date:	1/5/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-73034	Batch ID:	73034	TestNo:	M2540C	Units:	mg/L			
SampType:	LCS	Run ID:	WC_160105C	Analysis Date:	1/6/2016 8:10:00 AM	Prep Date:	1/5/2016			
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	1512359-02D-DUP	Batch ID:	73034	TestNo:	M2540C	Units:	mg/L			
SampType:	DUP	Run ID:	WC_160105C	Analysis Date:	1/6/2016 8:10:00 AM	Prep Date:	1/5/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 2000 50.0 0 2015 0.747 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



February 02, 2016

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

Re: Routine Analysis
Work Order: 388806

Dear Mr. DuPont:

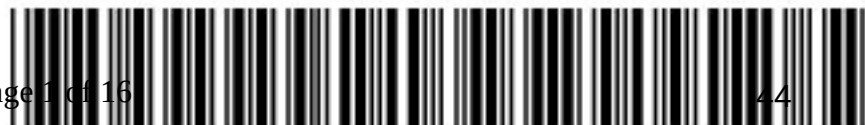
GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on January 07, 2016. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

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,

Anna Day
Project Manager

Purchase Order: 14120
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: 388806 GEL Work Order: 388806

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

Anna C Day

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 2, 2016

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-20
Sample ID: 388806001
Matrix: Water
Collect Date: 30-DEC-15 10:20
Receive Date: 07-JAN-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	-0.316	+/-1.28	2.41	3.00	pCi/L		AXM6	01/14/16	1119	1536346	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.816	+/-0.361	0.420	1.00	pCi/L		CXP3	01/20/16	0735	1536500	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"			81.2	(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: February 2, 2016

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-21
Sample ID: 388806002
Matrix: Water
Collect Date: 30-DEC-15 11:10
Receive Date: 07-JAN-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	1.61	+/-1.24	2.00	3.00	pCi/L		AXM6	01/14/16	1119	1536346	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.584	+/-0.280	0.280	1.00	pCi/L		CXP3	01/20/16	0735	1536500	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"			96.6	(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: February 2, 2016

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-22
Sample ID: 388806003
Matrix: Water
Collect Date: 30-DEC-15 12:00
Receive Date: 07-JAN-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	1.34	+/-0.991	1.55	3.00	pCi/L		AXM6	01/14/16	1119	1536346	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.973	+/-0.413	0.491	1.00	pCi/L		CXP3	01/20/16	0735	1536500	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"						88.5		(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: February 2, 2016

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-23
Sample ID: 388806004
Matrix: Water
Collect Date: 30-DEC-15 12:50
Receive Date: 07-JAN-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	2.27	+/-1.63	2.62	3.00	pCi/L		AXM6	01/14/16	1119	1536346	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.711	+/-0.367	0.479	1.00	pCi/L		CXP3	01/20/16	0735	1536500	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"			84.3	(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: February 2, 2016

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-24
Sample ID: 388806005
Matrix: Water
Collect Date: 30-DEC-15 13:45
Receive Date: 07-JAN-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	0.935	+/-0.994	1.66	3.00	pCi/L		AXM6	01/14/16	1119 1536346	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		0.485	+/-0.321	0.461	1.00	pCi/L		CXP3	01/20/16	0735 1536500	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"						96.5	(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: February 2, 2016

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-11AR
Sample ID: 388806006
Matrix: Water
Collect Date: 30-DEC-15 14:55
Receive Date: 07-JAN-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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		3.19	+/-1.97	2.92	3.00	pCi/L		AXM6	01/14/16	1119 1536346	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226		1.66	+/-0.530	0.538	1.00	pCi/L		CXP3	01/20/16	0805 1536500	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"						42.7	(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: February 2, 2016

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-18
Sample ID: 388806007
Matrix: Water
Collect Date: 30-DEC-15 17:15
Receive Date: 07-JAN-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	0.789	+/-1.19	2.04	3.00	pCi/L		AXM6	01/14/16	1122 1536346	1
Rad Radium-226											
Lucas Cell, Ra226, liquid "As Received"											
Radium-226	U	0.0844	+/-0.214	0.405	1.00	pCi/L		CXP3	01/20/16	0805 1536500	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"						82.7	(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: February 2, 2016

Company : DHL Analytical
Address : 2300 Double Creek Drive

Round Rock, Texas 78664

Contact: Mr. John DuPont
Project: Routine Analysis

Client Sample ID: BMW-19
Sample ID: 388806008
Matrix: Water
Collect Date: 30-DEC-15 16:15
Receive Date: 07-JAN-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	0.814	+/-1.63	2.89	3.00	pCi/L		AXM6	01/14/16	1303	1536346	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.598	+/-0.328	0.439	1.00	pCi/L		CXP3	01/20/16	0805	1536500	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"							84.8	(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: February 2, 2016

Page 1 of 2

DHL Analytical
2300 Double Creek Drive
Round Rock, Texas

Contact: Mr. John DuPont

Workorder: 388806

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	1536346										
QC1203466262	388806008	DUP									
Radium-228	U	0.814	U	2.28	pCi/L	N/A		N/A AXM6		01/14/16	11:23
	Uncertainty	+/-1.63		+/-1.66							
QC1203466263	LCS										
Radium-228	28.7			28.2	pCi/L		98.3	(75%-125%)		01/14/16	11:23
	Uncertainty			+/-2.69							
QC1203466261	MB										
Radium-228				1.67	pCi/L					01/14/16	11:22
	Uncertainty			+/-0.872							
Rad Ra-226											
Batch	1536500										
QC1203466565	389276001	DUP									
Radium-226		2.60		3.74	pCi/L	36.1*		(0%-20%)	CXP3	01/20/16	09:45
	Uncertainty	+/-0.648		+/-0.773							
QC1203466567	LCS										
Radium-226	24.4			22.2	pCi/L		91	(75%-125%)		01/20/16	09:45
	Uncertainty			+/-1.49							
QC1203466564	MB										
Radium-226			U	0.0515	pCi/L					01/20/16	09:10
	Uncertainty			+/-0.214							
QC1203466566	389276001	MS									
Radium-226	122	2.60		128	pCi/L		102	(75%-125%)		01/20/16	09:45
	Uncertainty	+/-0.648		+/-8.93							

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: 388806

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

388 806

Work Order: 1512359

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

GEL Laboratories
PO Box 30712
Charleston, SC 29417

TEL: (843) 556-8171

FAX:

Acct #:

31-Dec-15

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					226 E903.1	228 E904.0				
BMW-20	Aqueous	-01B	12/30/15 10:20 AM	500HDPEHNO3		1				
BMW-20	Aqueous	-01C	12/30/15 10:20 AM	500HDPEHNO3	1					
BMW-21	Aqueous	-02B	12/30/15 11:10 AM	500HDPEHNO3		1				
BMW-21	Aqueous	-02C	12/30/15 11:10 AM	500HDPEHNO3	1					
BMW-22	Aqueous	-03B	12/30/15 12:00 PM	500HDPEHNO3		1				
BMW-22	Aqueous	-03C	12/30/15 12:00 PM	500HDPEHNO3	1					
BMW-23	Aqueous	-04B	12/30/15 12:50 PM	500HDPEHNO3		1				
BMW-23	Aqueous	-04C	12/30/15 12:50 PM	500HDPEHNO3	1					
BMW-24	Aqueous	-05B	12/30/15 01:45 PM	500HDPEHNO3		1				
BMW-24	Aqueous	-05C	12/30/15 01:45 PM	500HDPEHNO3	1					
BMW-11AR	Aqueous	-06B	12/30/15 02:55 PM	500HDPEHNO3		1				
BMW-11AR	Aqueous	-06C	12/30/15 02:55 PM	500HDPEHNO3	1					
BMW-18	Aqueous	-07B	12/30/15 04:15 PM	500HDPEHNO3		1				
BMW-18	Aqueous	-07C	12/30/15 04:15 PM	500HDPEHNO3	1					
BMW-19	Aqueous	-08B	12/30/15 05:15 PM	500HDPEHNO3		1				
BMW-19	Aqueous	-08C	12/30/15 05:15 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>12/31/15 1730</u>	Received by: <u>[Signature]</u>	Date/Time: <u>12/31/15 1730</u>
Relinquished by: _____	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>1/7/16 10:15</u>



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>DHLA</u>		SDG/AR/COC/Work Order: <u>388806</u>
Received By: <u>Shanta macle</u>		Date Received: <u>1/7/16</u> <u>10:15</u>
Suspected Hazard Information	Yes ☐ No ☐	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	☒	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0.4m</u>
Classified Radioactive II or III by RSO?	☒	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	☒	
Package, COC, and/or Samples marked as beryllium or asbestos containing?	☒	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	☒	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	☒	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	☒	☐	☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	☐	☒	☐	Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius <u>8c</u>
2a Daily check performed and passed on IR temperature gun?	☒	☐	☐	Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): <u>ES032015835</u>
3 Chain of custody documents included with shipment?	☒	☐	☐	
4 Sample containers intact and sealed?	☒	☐	☐	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?	☒	☐	☐	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 Do Low Level Perchlorate samples have headspace as required?	☐	☒	☐	Sample ID's and containers affected:
7 VOA vials contain acid preservation?	☐	☒	☐	(If unknown, select No)
8 VOA vials free of headspace (defined as < 6mm bubble)?	☐	☒	☐	Sample ID's and containers affected:
9 Are Encore containers present?	☐	☒	☐	(If yes, immediately deliver to Volatiles laboratory)
10 Samples received within holding time?	☒	☐	☐	ID's and tests affected:
11 Sample ID's on COC match ID's on bottles?	☒	☐	☐	Sample ID's and containers affected:
12 Date & time on COC match date & time on bottles?	☐	☒	☐	Sample ID's affected: <u>Bmw-19 has 16:15 on container</u> <u>Bmw-18 has 17:15 on container *</u>
13 Number of containers received match number indicated on COC?	☒	☐	☐	Sample ID's affected:
14 Are sample containers identifiable as GEL provided?	☐	☒	☐	
15 COC form is properly signed in relinquished/received sections?	☒	☐	☐	
16 Carrier and tracking number.	☐	☐	☐	Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other <u>7753 2343 4429</u>

Comments (Use Continuation Form if needed):

*chain sent an updated chain. Add 1/8/16PM (or PMA) review: Initials ACDDate 1/8/16Page 1 of 1

GL-CHL-SR-001 Rev 2

List of current GEL Certifications as of 02 February 2016

State	Certification
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 30, 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 - MLSES

Order No.: 1602289

Dear Will Vienne:

DHL Analytical, Inc. received 8 sample(s) on 2/26/2016 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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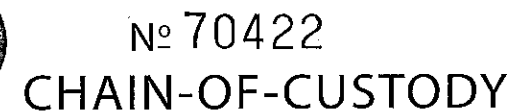
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LUMINANT



DATE: 2-26-16 PAGE 1 OF 1
PO #: 5164-B **DHL WORK ORDER #:** 1602289
PROJECT LOCATION OR NAME: Luminant MLSES
CLIENT PROJECT #: 5164-B **COLLECTOR:** CK/JTB

Authorize 5% surcharge for TRRP Report? ☐ Yes ☐ No		S=SOIL W=WATER A=AIR L=LIQUID SE=SEDIMENT	P=PAINT SL=SLUDGE O=OTHER SO=SOLID		PRESERVATION						ANALYSES BTEX ☐ MIBK ☐ [METHOD 8021] TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ GRO [METHOD 8015] ☐ DRO [METHOD 8109] ☐ VOC 8260 ☐ VOC 624 ☐ VOC 8270 ☐ VOC 8260/5035 ☐ SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 623 ☐ 8270 PEST ☐ 625 PEST/PCB ☐ 608 PCB ☐ 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐ 8321 HERB ☐ T PHOS. AMMONIA ☐ METALS 6020 ☐ METALS 2008 ☐ DISS. METALS ☐ PH ☐ HEX CHROM ☐ CHLORIDE ☐ ANIONS ☐ TCAP-SVOC ☐ VOCC ☐ ALKALINITY ☐ COD ☐ RCI ☐ METALS ☐ RCRA 8 ☐ PEST ☐ HERB ☐ TDS ☐ FLASHPOINT ☐ TX-11 ☐ Pb ☐ % MOISTURE ☐ CYANIDE ☐ *SEE ATTACHED																		FIELD NOTES	
Field Sample I.D.	DHL Lab #	Date	Time	Matrix	Container Type	# of Containers	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	UNPRESERVED																		
BM W-22	01	2-25-16	945	W	P	4	3					1														X				
BM W-23	02		1035	W	P	4	3					1														X				
BMW-24	03		1115	W	P	4	3					1														X				
BMW-19	04		1215	W	P	4	3					1														X				
BMW-20	05		1430	W	P	4	3					1														X				
BMW-21	06		1510	W	P	4	3					1														X				
BMW-11AR	07		1620	W	P	4	3					1														X				
BMW-18	08	2-26-16	1015	W	P	4	3					1														X				

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

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 2/26/2016

Work Order Number 1602289

Received by JB

Checklist completed by: Baile 2/29/2016

Signature

Date

Reviewed by JB 2/29/2016

Initials

Date

Carrier name Hand Delivered

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 ☐ 3.4 °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? W2 Checked by JB

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 - MLSES
Lab Order: 1602289

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 2/26/16. A total of 8 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 3/7/16 (batch 73907) Boron was detected below the reporting limit in the method blanks (MB-73907). All associated samples were detected greater than 10 times the amount in the blank for this analyte. No further corrective actions were taken.

For Metals analysis performed on 3/7/16 (batch 73938) the matrix spike duplicate recovery was above control limits for Boron. 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.

MERCURY ANALYSIS

For Mercury analysis performed on 3/8/16 (batch 73953) the LCS/LCSD had the RPD slightly above control limits. This is flagged accordingly in the QC summary report. The percent recoveries were within control limits. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Lab Order: 1602289**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1602289-01	BMW-22		02/25/16 09:45 AM	2/26/2016
1602289-02	BMW-23		02/25/16 10:35 AM	2/26/2016
1602289-03	BMW-24		02/25/16 11:15 AM	2/26/2016
1602289-04	BMW-19		02/25/16 12:15 PM	2/26/2016
1602289-05	BMW-20		02/25/16 02:30 PM	2/26/2016
1602289-06	BMW-21		02/25/16 03:10 PM	2/26/2016
1602289-07	BMW-11AR		02/25/16 04:20 PM	2/26/2016
1602289-08	BMW-18		02/26/16 10:15 AM	2/26/2016

LUMINANT

Lab Order: 1602289
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1602289-01A	BMW-22	02/25/16 09:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-22	02/25/16 09:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-22	02/25/16 09:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-22	02/25/16 09:45 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/02/16 01:57 PM	73953
1602289-01D	BMW-22	02/25/16 09:45 AM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-22	02/25/16 09:45 AM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-22	02/25/16 09:45 AM	Aqueous	M4500-H+ B	pH Preparation	03/01/16 09:00 AM	73915
	BMW-22	02/25/16 09:45 AM	Aqueous	M2540C	TDS Preparation	03/02/16 01:49 PM	73952
1602289-02A	BMW-23	02/25/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-23	02/25/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-23	02/25/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-23	02/25/16 10:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/02/16 09:00 AM	73940
1602289-02D	BMW-23	02/25/16 10:35 AM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-23	02/25/16 10:35 AM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-23	02/25/16 10:35 AM	Aqueous	M4500-H+ B	pH Preparation	03/01/16 09:00 AM	73915
	BMW-23	02/25/16 10:35 AM	Aqueous	M2540C	TDS Preparation	03/02/16 01:49 PM	73952
1602289-03A	BMW-24	02/25/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-24	02/25/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-24	02/25/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/29/16 12:43 PM	73907
	BMW-24	02/25/16 11:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/02/16 09:00 AM	73940
1602289-03D	BMW-24	02/25/16 11:15 AM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-24	02/25/16 11:15 AM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-24	02/25/16 11:15 AM	Aqueous	M4500-H+ B	pH Preparation	03/01/16 09:00 AM	73915
	BMW-24	02/25/16 11:15 AM	Aqueous	M2540C	TDS Preparation	03/02/16 01:49 PM	73952
1602289-04A	BMW-19	02/25/16 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-19	02/25/16 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-19	02/25/16 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-19	02/25/16 12:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/02/16 09:00 AM	73940

Lab Order: 1602289
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1602289-04D	BMW-19	02/25/16 12:15 PM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-19	02/25/16 12:15 PM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-19	02/25/16 12:15 PM	Aqueous	M4500-H+ B	pH Preparation	03/01/16 09:00 AM	73915
	BMW-19	02/25/16 12:15 PM	Aqueous	M2540C	TDS Preparation	03/02/16 01:49 PM	73952
1602289-05A	BMW-20	02/25/16 02:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-20	02/25/16 02:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-20	02/25/16 02:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-20	02/25/16 02:30 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/02/16 09:00 AM	73940
1602289-05D	BMW-20	02/25/16 02:30 PM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-20	02/25/16 02:30 PM	Aqueous	M4500-H+ B	pH Preparation	03/01/16 09:00 AM	73915
	BMW-20	02/25/16 02:30 PM	Aqueous	M2540C	TDS Preparation	03/02/16 01:49 PM	73952
1602289-06A	BMW-21	02/25/16 03:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-21	02/25/16 03:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-21	02/25/16 03:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-21	02/25/16 03:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/02/16 09:00 AM	73940
1602289-06D	BMW-21	02/25/16 03:10 PM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-21	02/25/16 03:10 PM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-21	02/25/16 03:10 PM	Aqueous	M4500-H+ B	pH Preparation	03/01/16 09:00 AM	73915
	BMW-21	02/25/16 03:10 PM	Aqueous	M2540C	TDS Preparation	03/02/16 01:49 PM	73952
1602289-07A	BMW-11AR	02/25/16 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-11AR	02/25/16 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-11AR	02/25/16 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-11AR	02/25/16 04:20 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/02/16 09:00 AM	73940
1602289-07D	BMW-11AR	02/25/16 04:20 PM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-11AR	02/25/16 04:20 PM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-11AR	02/25/16 04:20 PM	Aqueous	M4500-H+ B	pH Preparation	03/01/16 10:35 AM	73927
	BMW-11AR	02/25/16 04:20 PM	Aqueous	M2540C	TDS Preparation	03/02/16 01:49 PM	73952
1602289-08A	BMW-18	02/26/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938

Lab Order: 1602289
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1602289-08A	BMW-18	02/26/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/02/16 08:58 AM	73938
	BMW-18	02/26/16 10:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/02/16 09:00 AM	73940
1602289-08D	BMW-18	02/26/16 10:15 AM	Aqueous	E300	Anion Preparation	03/07/16 09:06 AM	74004
	BMW-18	02/26/16 10:15 AM	Aqueous	M4500-H+ B	pH Preparation	03/01/16 10:35 AM	73927
	BMW-18	02/26/16 10:15 AM	Aqueous	M2540C	TDS Preparation	03/02/16 01:49 PM	73952

Lab Order: 1602289
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1602289-01A	BMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	73953	1	03/08/16 11:29 AM	CETAC2_HG_160308 C
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	1	03/01/16 02:34 PM	ICP-MS4_160301A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	10	03/07/16 01:57 PM	ICP-MS4_160307A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	1	03/07/16 02:07 PM	ICP-MS4_160307A
1602289-01D	BMW-22	Aqueous	E300	Anions by IC method - Water	74004	1	03/07/16 10:34 AM	IC2_160307A
	BMW-22	Aqueous	E300	Anions by IC method - Water	74004	100	03/07/16 02:35 PM	IC2_160307A
	BMW-22	Aqueous	M4500-H+ B	pH	73915	1	03/01/16 10:12 AM	TITRATOR_160301A
	BMW-22	Aqueous	M2540C	Total Dissolved Solids	73952	1	03/03/16 09:05 AM	WC_160302B
1602289-02A	BMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	73940	1	03/03/16 12:40 PM	CETAC2_HG_160303 A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	1	03/01/16 02:36 PM	ICP-MS4_160301A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	10	03/07/16 01:59 PM	ICP-MS4_160307A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	1	03/07/16 02:09 PM	ICP-MS4_160307A
1602289-02D	BMW-23	Aqueous	E300	Anions by IC method - Water	74004	1	03/07/16 10:48 AM	IC2_160307A
	BMW-23	Aqueous	E300	Anions by IC method - Water	74004	10	03/07/16 03:33 PM	IC2_160307A
	BMW-23	Aqueous	M4500-H+ B	pH	73915	1	03/01/16 10:13 AM	TITRATOR_160301A
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	73952	1	03/03/16 09:05 AM	WC_160302B
1602289-03A	BMW-24	Aqueous	SW7470A	Mercury Total: Aqueous	73940	1	03/03/16 12:42 PM	CETAC2_HG_160303 A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	1	03/01/16 02:38 PM	ICP-MS4_160301A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	10	03/07/16 02:01 PM	ICP-MS4_160307A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73907	1	03/07/16 02:11 PM	ICP-MS4_160307A
1602289-03D	BMW-24	Aqueous	E300	Anions by IC method - Water	74004	1	03/07/16 11:03 AM	IC2_160307A
	BMW-24	Aqueous	E300	Anions by IC method - Water	74004	100	03/07/16 03:48 PM	IC2_160307A
	BMW-24	Aqueous	M4500-H+ B	pH	73915	1	03/01/16 10:15 AM	TITRATOR_160301A
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	73952	1	03/03/16 09:05 AM	WC_160302B
1602289-04A	BMW-19	Aqueous	SW7470A	Mercury Total: Aqueous	73940	1	03/03/16 12:44 PM	CETAC2_HG_160303 A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/03/16 06:33 PM	ICP-MS4_160303F

Lab Order: 1602289
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1602289-04A	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	50	03/07/16 05:40 PM	ICP-MS4_160307A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/11/16 06:08 PM	ICP-MS4_160311B
1602289-04D	BMW-19	Aqueous	E300	Anions by IC method - Water	74004	100	03/07/16 04:02 PM	IC2_160307A
	BMW-19	Aqueous	E300	Anions by IC method - Water	74004	1	03/07/16 11:17 AM	IC2_160307A
	BMW-19	Aqueous	M4500-H+ B	pH	73915	1	03/01/16 10:19 AM	TITRATOR_160301A
	BMW-19	Aqueous	M2540C	Total Dissolved Solids	73952	1	03/03/16 09:05 AM	WC_160302B
1602289-05A	BMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	73940	1	03/03/16 12:46 PM	CETAC2_HG_160303A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/03/16 06:35 PM	ICP-MS4_160303F
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	10	03/07/16 05:42 PM	ICP-MS4_160307A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/11/16 06:10 PM	ICP-MS4_160311B
1602289-05D	BMW-20	Aqueous	E300	Anions by IC method - Water	74004	1	03/07/16 11:32 AM	IC2_160307A
	BMW-20	Aqueous	M4500-H+ B	pH	73915	1	03/01/16 10:37 AM	TITRATOR_160301A
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	73952	1	03/03/16 09:05 AM	WC_160302B
1602289-06A	BMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	73940	1	03/03/16 12:49 PM	CETAC2_HG_160303A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/03/16 06:37 PM	ICP-MS4_160303F
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	10	03/07/16 05:44 PM	ICP-MS4_160307A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/11/16 06:12 PM	ICP-MS4_160311B
1602289-06D	BMW-21	Aqueous	E300	Anions by IC method - Water	74004	10	03/07/16 04:17 PM	IC2_160307A
	BMW-21	Aqueous	E300	Anions by IC method - Water	74004	1	03/07/16 11:47 AM	IC2_160307A
	BMW-21	Aqueous	M4500-H+ B	pH	73915	1	03/01/16 10:40 AM	TITRATOR_160301A
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	73952	1	03/03/16 09:05 AM	WC_160302B
1602289-07A	BMW-11AR	Aqueous	SW7470A	Mercury Total: Aqueous	73940	1	03/03/16 12:51 PM	CETAC2_HG_160303A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/03/16 06:39 PM	ICP-MS4_160303F
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	10	03/07/16 05:47 PM	ICP-MS4_160307A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/11/16 06:14 PM	ICP-MS4_160311B
1602289-07D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	74004	10	03/07/16 05:03 PM	IC2_160307A

Lab Order: 1602289
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1602289-07D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	74004	1	03/07/16 12:01 PM	IC2_160307A
	BMW-11AR	Aqueous	M4500-H+ B	pH	73927	1	03/01/16 10:41 AM	TITRATOR_160301B
	BMW-11AR	Aqueous	M2540C	Total Dissolved Solids	73952	1	03/03/16 09:05 AM	WC_160302B
1602289-08A	BMW-18	Aqueous	SW7470A	Mercury Total: Aqueous	73940	1	03/03/16 12:53 PM	CETAC2_HG_160303A
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/03/16 06:41 PM	ICP-MS4_160303F
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	73938	1	03/07/16 05:49 PM	ICP-MS4_160307A
1602289-08D	BMW-18	Aqueous	E300	Anions by IC method - Water	74004	1	03/07/16 12:16 PM	IC2_160307A
	BMW-18	Aqueous	M4500-H+ B	pH	73927	1	03/01/16 10:44 AM	TITRATOR_160301B
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	73952	1	03/03/16 09:05 AM	WC_160302B

DHL Analytical, Inc.

Date: 30-Mar-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1602289

Client Sample ID: BMW-22
Lab ID: 1602289-01
Collection Date: 02/25/16 09:45 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/08/16 11:29 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/01/16 02:34 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:34 PM
Barium	0.0761	0.00300	0.0100		mg/L	1	03/01/16 02:34 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:34 PM
Boron	3.18	0.100	0.300		mg/L	10	03/07/16 01:57 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:34 PM
Calcium	209	1.00	3.00		mg/L	10	03/07/16 01:57 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:34 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/01/16 02:34 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:34 PM
Lithium	0.0801	0.00500	0.0100		mg/L	1	03/07/16 02:07 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:34 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:34 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/01/16 02:34 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	295	30.0	100		mg/L	100	03/07/16 02:35 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/07/16 10:34 AM
Sulfate	949	100	300		mg/L	100	03/07/16 02:35 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.88	0	0		pH Units@17.2°C	1	03/01/16 10:12 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2430	50.0	50.0		mg/L	1	03/03/16 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: 30-Mar-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1602289

Client Sample ID: BMW-23
Lab ID: 1602289-02
Collection Date: 02/25/16 10:35 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 12:40 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/01/16 02:36 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:36 PM
Barium	0.0488	0.00300	0.0100		mg/L	1	03/01/16 02:36 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:36 PM
Boron	1.31	0.0100	0.0300		mg/L	1	03/07/16 02:09 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:36 PM
Calcium	97.7	1.00	3.00		mg/L	10	03/07/16 01:59 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:36 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/01/16 02:36 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:36 PM
Lithium	0.0959	0.00500	0.0100		mg/L	1	03/07/16 02:09 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:36 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:36 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/01/16 02:36 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	225	3.00	10.0		mg/L	10	03/07/16 03:33 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/07/16 10:48 AM
Sulfate	527	10.0	30.0		mg/L	10	03/07/16 03:33 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.74	0	0		pH Units@17.2°C	1	03/01/16 10:13 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1520	50.0	50.0		mg/L	1	03/03/16 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: 30-Mar-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1602289

Client Sample ID: BMW-24
Lab ID: 1602289-03
Collection Date: 02/25/16 11:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 12:42 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/01/16 02:38 PM
Arsenic	0.00442	0.00200	0.00500	J	mg/L	1	03/01/16 02:38 PM
Barium	0.645	0.00300	0.0100		mg/L	1	03/01/16 02:38 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:38 PM
Boron	0.431	0.0100	0.0300		mg/L	1	03/07/16 02:11 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:38 PM
Calcium	61.6	1.00	3.00		mg/L	10	03/07/16 02:01 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:38 PM
Cobalt	0.0137	0.00300	0.00500		mg/L	1	03/01/16 02:38 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/01/16 02:38 PM
Lithium	0.0267	0.00500	0.0100		mg/L	1	03/07/16 02:11 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:38 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/01/16 02:38 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/01/16 02:38 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	332	30.0	100		mg/L	100	03/07/16 03:48 PM
Fluoride	0.236	0.100	0.400	J	mg/L	1	03/07/16 11:03 AM
Sulfate	184	100	300	J	mg/L	100	03/07/16 03:48 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.38	0	0		pH Units@17.5°C	1	03/01/16 10:15 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1210	50.0	50.0		mg/L	1	03/03/16 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: 30-Mar-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1602289

Client Sample ID: BMW-19
Lab ID: 1602289-04
Collection Date: 02/25/16 12:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 12:44 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/03/16 06:33 PM
Arsenic	0.00235	0.00200	0.00500	J	mg/L	1	03/03/16 06:33 PM
Barium	0.0169	0.00300	0.0100		mg/L	1	03/03/16 06:33 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:33 PM
Boron	0.458	0.0100	0.0300		mg/L	1	03/11/16 06:08 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:33 PM
Calcium	504	5.00	15.0		mg/L	50	03/07/16 05:40 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:33 PM
Cobalt	0.0149	0.00300	0.00500		mg/L	1	03/03/16 06:33 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:33 PM
Lithium	0.0711	0.00500	0.0100		mg/L	1	03/03/16 06:33 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:33 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:33 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/03/16 06:33 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	8.40	0.300	1.00		mg/L	1	03/07/16 11:17 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/07/16 11:17 AM
Sulfate	2330	100	300		mg/L	100	03/07/16 04:02 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.76	0	0		pH Units@18.3°C	1	03/01/16 10:19 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2960	50.0	50.0		mg/L	1	03/03/16 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: 30-Mar-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1602289

Client Sample ID: BMW-20
Lab ID: 1602289-05
Collection Date: 02/25/16 02:30 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 12:46 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/03/16 06:35 PM
Arsenic	0.00474	0.00200	0.00500	J	mg/L	1	03/03/16 06:35 PM
Barium	0.0989	0.00300	0.0100		mg/L	1	03/03/16 06:35 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:35 PM
Boron	0.202	0.0100	0.0300		mg/L	1	03/11/16 06:10 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:35 PM
Calcium	157	1.00	3.00		mg/L	10	03/07/16 05:42 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:35 PM
Cobalt	0.0220	0.00300	0.00500		mg/L	1	03/03/16 06:35 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:35 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	03/03/16 06:35 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:35 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:35 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/03/16 06:35 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	30.7	0.300	1.00		mg/L	1	03/07/16 11:32 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/07/16 11:32 AM
Sulfate	131	1.00	3.00		mg/L	1	03/07/16 11:32 AM
PH		M4500-H+ B		Analyst: BJT			
pH	6.33	0	0		pH Units@15.3°C	1	03/01/16 10:37 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	888	10.0	10.0		mg/L	1	03/03/16 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: 30-Mar-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1602289

Client Sample ID: BMW-21
Lab ID: 1602289-06
Collection Date: 02/25/16 03:10 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 12:49 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/03/16 06:37 PM
Arsenic	0.00327	0.00200	0.00500	J	mg/L	1	03/03/16 06:37 PM
Barium	0.0471	0.00300	0.0100		mg/L	1	03/03/16 06:37 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:37 PM
Boron	1.01	0.0100	0.0300		mg/L	1	03/11/16 06:12 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:37 PM
Calcium	148	1.00	3.00		mg/L	10	03/07/16 05:44 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:37 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/03/16 06:37 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:37 PM
Lithium	0.0602	0.00500	0.0100		mg/L	1	03/03/16 06:37 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:37 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:37 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/03/16 06:37 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	393	3.00	10.0		mg/L	10	03/07/16 04:17 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/07/16 11:47 AM
Sulfate	462	10.0	30.0		mg/L	10	03/07/16 04:17 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.27	0	0		pH Units@16.2°C	1	03/01/16 10:40 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1990	50.0	50.0		mg/L	1	03/03/16 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: 30-Mar-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1602289

Client Sample ID: BMW-11AR
Lab ID: 1602289-07
Collection Date: 02/25/16 04:20 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 12:51 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/03/16 06:39 PM
Arsenic	0.00608	0.00200	0.00500		mg/L	1	03/03/16 06:39 PM
Barium	0.0724	0.00300	0.0100		mg/L	1	03/03/16 06:39 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:39 PM
Boron	0.440	0.0100	0.0300		mg/L	1	03/11/16 06:14 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:39 PM
Calcium	136	1.00	3.00		mg/L	10	03/07/16 05:47 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:39 PM
Cobalt	0.00486	0.00300	0.00500	J	mg/L	1	03/03/16 06:39 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:39 PM
Lithium	0.0276	0.00500	0.0100		mg/L	1	03/03/16 06:39 PM
Molybdenum	0.00597	0.00200	0.00500		mg/L	1	03/03/16 06:39 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:39 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/03/16 06:39 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	18.8	0.300	1.00		mg/L	1	03/07/16 12:01 PM
Fluoride	0.123	0.100	0.400	J	mg/L	1	03/07/16 12:01 PM
Sulfate	382	10.0	30.0		mg/L	10	03/07/16 05:03 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	7.00	0	0		pH Units@15.3°C	1	03/01/16 10:41 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1450	50.0	50.0		mg/L	1	03/03/16 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: 30-Mar-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1602289

Client Sample ID: BMW-18
Lab ID: 1602289-08
Collection Date: 02/26/16 10:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/03/16 12:53 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/03/16 06:41 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:41 PM
Barium	0.0446	0.00300	0.0100		mg/L	1	03/03/16 06:41 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:41 PM
Boron	0.406	0.0100	0.0300		mg/L	1	03/07/16 05:49 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:41 PM
Calcium	9.49	0.100	0.300		mg/L	1	03/03/16 06:41 PM
Chromium	0.00214	0.00200	0.00500	J	mg/L	1	03/03/16 06:41 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/03/16 06:41 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/03/16 06:41 PM
Lithium	0.0156	0.00500	0.0100		mg/L	1	03/03/16 06:41 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:41 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/03/16 06:41 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/03/16 06:41 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	17.1	0.300	1.00		mg/L	1	03/07/16 12:16 PM
Fluoride	0.164	0.100	0.400	J	mg/L	1	03/07/16 12:16 PM
Sulfate	90.0	1.00	3.00		mg/L	1	03/07/16 12:16 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	8.68	0	0		pH Units@15.9°C	1	03/01/16 10:44 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	508	10.0	10.0		mg/L	1	03/03/16 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

Work Order: 1602289

Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160303A

The QC data in batch 73940 applies to the following samples: 1602289-02A, 1602289-03A, 1602289-04A, 1602289-05A, 1602289-06A, 1602289-07A, 1602289-08A

Sample ID	MB-73940	Batch ID:	73940	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 11:52:24 AM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-73940	Batch ID:	73940	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 11:54:39 AM	Prep Date:	3/2/2016			
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

Sample ID	LCSD-73940	Batch ID:	73940	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 11:56:55 AM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00201 0.000200 0.00200 0 101 85 115 1.50 15

Sample ID	1602269-02A SD	Batch ID:	73940	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 12:01:28 PM	Prep Date:	3/2/2016			
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	1602269-02A PDS	Batch ID:	73940	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 12:03:43 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00218 0.000200 0.00250 0 87.2 85 115

Sample ID	1602269-02A MS	Batch ID:	73940	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 12:05:59 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00177 0.000200 0.00200 0 88.5 80 120

Sample ID	1602269-02A MSD	Batch ID:	73940	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 12:08:14 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00181 0.000200 0.00200 0 90.5 80 120 2.23 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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160303A

Sample ID	ICV-160303	Batch ID:	R84495		TestNo:	SW7470A		Units:	mg/L		
SampType:	ICV	Run ID:	CETAC2_HG_160303A		Analysis Date:	3/3/2016 10:37:24 AM		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	CCV2-160303	Batch ID:	R84495	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 11:47:50 AM	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			

Sample ID	CCV3-160303	Batch ID:	R84495	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 12:30:56 PM	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			

Sample ID	CCV4-160303	Batch ID:	R84495	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160303A	Analysis Date:	3/3/2016 12:58:15 PM	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			

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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160308C

The QC data in batch 73953 applies to the following samples: 1602289-01A

Sample ID	MB-73953	Batch ID:	73953	TestNo:	SW7470A	Units:	mg/L				
SampType:	MBLK	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 10:47:52 AM	Prep Date:	3/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-73953	Batch ID:	73953	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCS	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 10:50:07 AM	Prep Date:	3/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00172 0.000200 0.00200 0 86.0 85 115

Sample ID	LCSD-73953	Batch ID:	73953	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCSD	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 10:52:23 AM	Prep Date:	3/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00207 0.000200 0.00200 0 104 85 115 18.5 15 R

Sample ID	1603013-04C SD	Batch ID:	73953	TestNo:	SW7470A	Units:	mg/L				
SampType:	SD	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 11:47:35 AM	Prep Date:	3/2/2016				
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	1603013-04C PDS	Batch ID:	73953	TestNo:	SW7470A	Units:	mg/L				
SampType:	PDS	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 11:49:52 AM	Prep Date:	3/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00238 0.000200 0.00250 0 95.2 85 115

Sample ID	1603013-04C MS	Batch ID:	73953	TestNo:	SW7470A	Units:	mg/L				
SampType:	MS	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 11:52:09 AM	Prep Date:	3/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00210 0.000200 0.00200 0 105 80 120

Sample ID	1603013-04C MSD	Batch ID:	73953	TestNo:	SW7470A	Units:	mg/L				
SampType:	MSD	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 11:54:26 AM	Prep Date:	3/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00201 0.000200 0.00200 0 101 80 120 4.38 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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160308C

Sample ID	ICV-160308	Batch ID:	R84579	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 10:11:57 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.00394	0.000200	0.00400	0	98.5	90	110			

Sample ID	CCV1-160308	Batch ID:	R84579	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 10:43:17 AM	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			

Sample ID	CCV2-160308	Batch ID:	R84579	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 11:17:58 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.00188	0.000200	0.00200	0	94.0	90	110			

Sample ID	CCV3-160308	Batch ID:	R84579	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160308C	Analysis Date:	3/8/2016 11:59:01 AM	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	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160301A

The QC data in batch 73907 applies to the following samples: 1602289-01A, 1602289-02A, 1602289-03A

Sample ID MB-73907	Batch ID: 73907	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_160301A	Analysis Date: 3/1/2016 1:37:00 PM	Prep Date: 2/29/2016

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								
Molybdenum	<0.00200	0.00500								
Selenium	<0.00200	0.00500								
Thallium	<0.000500	0.00150								

Sample ID LCS-73907	Batch ID: 73907	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_160301A	Analysis Date: 3/1/2016 1:39:00 PM	Prep Date: 2/29/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.192	0.00250	0.200	0	96.1	80	120			
Arsenic	0.197	0.00500	0.200	0	98.7	80	120			
Barium	0.192	0.0100	0.200	0	95.9	80	120			
Beryllium	0.207	0.00100	0.200	0	104	80	120			
Cadmium	0.193	0.00100	0.200	0	96.7	80	120			
Calcium	4.74	0.300	5.00	0	94.8	80	120			
Chromium	0.199	0.00500	0.200	0	99.4	80	120			
Cobalt	0.205	0.00500	0.200	0	102	80	120			
Lead	0.202	0.00100	0.200	0	101	80	120			
Molybdenum	0.187	0.00500	0.200	0	93.3	80	120			
Selenium	0.193	0.00500	0.200	0	96.5	80	120			
Thallium	0.201	0.00150	0.200	0	101	80	120			

Sample ID LCSD-73907	Batch ID: 73907	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS4_160301A	Analysis Date: 3/1/2016 1:41:00 PM	Prep Date: 2/29/2016

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	2.03	15	
Arsenic	0.192	0.00500	0.200	0	96.2	80	120	2.49	15	
Barium	0.197	0.0100	0.200	0	98.3	80	120	2.46	15	
Beryllium	0.208	0.00100	0.200	0	104	80	120	0.347	15	
Cadmium	0.199	0.00100	0.200	0	99.3	80	120	2.65	15	
Calcium	4.63	0.300	5.00	0	92.5	80	120	2.40	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160301A

Sample ID	LCSD-73907	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 1:41:00 PM	Prep Date:	2/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chromium	0.197	0.00500	0.200	0	98.6	80	120	0.798	15	
Cobalt	0.201	0.00500	0.200	0	101	80	120	1.95	15	
Lead	0.196	0.00100	0.200	0	97.9	80	120	3.00	15	
Molybdenum	0.190	0.00500	0.200	0	95.2	80	120	2.06	15	
Selenium	0.196	0.00500	0.200	0	98.0	80	120	1.52	15	
Thallium	0.195	0.00150	0.200	0	97.6	80	120	3.00	15	

Sample ID	1602283-17A SD	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 1:47:00 PM	Prep Date:	2/29/2016			
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	<0.0150	0.0500	0	0				0	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Calcium	<0.500	1.50	0	0				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	0.00405	0.00500	0	0.00384				5.22	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	1602283-17A PDS	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 2:07:00 PM	Prep Date:	2/29/2016			
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	0.191	0.00500	0.200	0	95.3	80	120			
Barium	0.196	0.0100	0.200	0	97.8	80	120			
Beryllium	0.208	0.00100	0.200	0	104	80	120			
Cadmium	0.193	0.00100	0.200	0	96.4	80	120			
Calcium	4.58	0.300	5.00	0	91.5	80	120			
Chromium	0.201	0.00500	0.200	0	101	80	120			
Cobalt	0.202	0.00500	0.200	0	101	80	120			
Lead	0.199	0.00100	0.200	0.00384	97.5	80	120			
Molybdenum	0.187	0.00500	0.200	0	93.4	80	120			
Selenium	0.192	0.00500	0.200	0	96.1	80	120			
Thallium	0.195	0.00150	0.200	0	97.3	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160301A

Sample ID	1602283-17A MS	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 2:09:00 PM	Prep Date:	2/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.193	0.00250	0.200	0	96.3	80	120			
Arsenic	0.193	0.00500	0.200	0	96.7	80	120			
Barium	0.192	0.0100	0.200	0	96.1	80	120			
Beryllium	0.207	0.00100	0.200	0	104	80	120			
Cadmium	0.193	0.00100	0.200	0	96.4	80	120			
Calcium	4.69	0.300	5.00	0	93.7	80	120			
Chromium	0.198	0.00500	0.200	0	98.9	80	120			
Cobalt	0.202	0.00500	0.200	0	101	80	120			
Lead	0.202	0.00100	0.200	0.00384	99.2	80	120			
Molybdenum	0.185	0.00500	0.200	0	92.5	80	120			
Selenium	0.192	0.00500	0.200	0	96.1	80	120			
Thallium	0.198	0.00150	0.200	0	98.8	80	120			

Sample ID	1602283-17A MSD	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L				
SampType:	MSD	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 2:11:00 PM	Prep Date:	2/29/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.193	0.00250	0.200	0	96.4	80	120	0.089	15	
Arsenic	0.193	0.00500	0.200	0	96.4	80	120	0.281	15	
Barium	0.195	0.0100	0.200	0	97.7	80	120	1.71	15	
Beryllium	0.212	0.00100	0.200	0	106	80	120	2.14	15	
Cadmium	0.194	0.00100	0.200	0	97.1	80	120	0.748	15	
Calcium	4.79	0.300	5.00	0	95.9	80	120	2.26	15	
Chromium	0.199	0.00500	0.200	0	99.5	80	120	0.595	15	
Cobalt	0.203	0.00500	0.200	0	102	80	120	0.828	15	
Lead	0.205	0.00100	0.200	0.00384	100	80	120	1.17	15	
Molybdenum	0.188	0.00500	0.200	0	94.2	80	120	1.83	15	
Selenium	0.195	0.00500	0.200	0	97.4	80	120	1.32	15	
Thallium	0.200	0.00150	0.200	0	100	80	120	1.44	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160301A

Sample ID	ICV-160301			Batch ID:	R84456		TestNo:	SW6020A		Units:	mg/L	
SampType:	ICV			Run ID:	ICP-MS4_160301A		Analysis Date:	3/1/2016 12:37:00 PM		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	0.100	0.00500	0.100	0	100	90	110			
Barium	0.100	0.0100	0.100	0	100	90	110			
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Cadmium	0.0988	0.00100	0.100	0	98.8	90	110			
Calcium	2.30	0.300	2.50	0	91.8	90	110			
Chromium	0.104	0.00500	0.100	0	104	90	110			
Cobalt	0.104	0.00500	0.100	0	104	90	110			
Lead	0.101	0.00100	0.100	0	101	90	110			
Molybdenum	0.0952	0.00500	0.100	0	95.2	90	110			
Selenium	0.102	0.00500	0.100	0	102	90	110			
Thallium	0.0997	0.00150	0.100	0	99.7	90	110			

Sample ID	LCVL-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 12:44:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00212	0.00250	0.00200	0	106	70	130			
Arsenic	0.00500	0.00500	0.00500	0	100	70	130			
Barium	0.00522	0.0100	0.00500	0	104	70	130			
Beryllium	0.00112	0.00100	0.00100	0	112	70	130			
Cadmium	0.00102	0.00100	0.00100	0	102	70	130			
Calcium	0.105	0.300	0.100	0	105	70	130			
Chromium	0.00500	0.00500	0.00500	0	100	70	130			
Cobalt	0.00526	0.00500	0.00500	0	105	70	130			
Lead	0.00108	0.00100	0.00100	0	108	70	130			
Molybdenum	0.00498	0.00500	0.00500	0	99.6	70	130			
Selenium	0.00548	0.00500	0.00500	0	110	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID	CCV1-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 1:16:00 PM	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	0.201	0.0100	0.200	0	100	90	110			
Beryllium	0.209	0.00100	0.200	0	105	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Calcium	4.81	0.300	5.00	0	96.1	90	110			
Chromium	0.202	0.00500	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160301A

Sample ID	CCV1-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 1:16:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Cobalt	0.205	0.00500	0.200	0	103	90	110			
Lead	0.200	0.00100	0.200	0	99.8	90	110			
Molybdenum	0.195	0.00500	0.200	0	97.5	90	110			
Selenium	0.201	0.00500	0.200	0	100	90	110			
Thallium	0.201	0.00150	0.200	0	101	90	110			

Sample ID	LCVL1-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 1:33:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00213	0.00250	0.00200	0	107	70	130			
Arsenic	0.00511	0.00500	0.00500	0	102	70	130			
Barium	0.00516	0.0100	0.00500	0	103	70	130			
Beryllium	0.00106	0.00100	0.00100	0	106	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.109	0.300	0.100	0	109	70	130			
Chromium	0.00485	0.00500	0.00500	0	97.0	70	130			
Cobalt	0.00533	0.00500	0.00500	0	107	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Molybdenum	0.00501	0.00500	0.00500	0	100	70	130			
Selenium	0.00502	0.00500	0.00500	0	100	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV2-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 2:13:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.201	0.00250	0.200	0	101	90	110			
Arsenic	0.196	0.00500	0.200	0	98.2	90	110			
Barium	0.200	0.0100	0.200	0	100	90	110			
Beryllium	0.214	0.00100	0.200	0	107	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Calcium	4.83	0.300	5.00	0	96.6	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			
Cobalt	0.207	0.00500	0.200	0	103	90	110			
Lead	0.203	0.00100	0.200	0	101	90	110			
Molybdenum	0.195	0.00500	0.200	0	97.3	90	110			
Selenium	0.198	0.00500	0.200	0	99.2	90	110			
Thallium	0.202	0.00150	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160301A

Sample ID	LCVL2-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 2:18:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00215	0.00250	0.00200	0	107	70	130			
Arsenic	0.00498	0.00500	0.00500	0	99.5	70	130			
Barium	0.00526	0.0100	0.00500	0	105	70	130			
Beryllium	0.00107	0.00100	0.00100	0	107	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			
Chromium	0.00489	0.00500	0.00500	0	97.7	70	130			
Cobalt	0.00528	0.00500	0.00500	0	106	70	130			
Lead	0.00111	0.00100	0.00100	0	110	70	130			
Molybdenum	0.00498	0.00500	0.00500	0	99.6	70	130			
Selenium	0.00572	0.00500	0.00500	0	114	70	130			
Thallium	0.00105	0.00150	0.00100	0	105	70	130			

Sample ID	CCV3-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 2:42:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.200	0.00250	0.200	0	99.8	90	110			
Arsenic	0.197	0.00500	0.200	0	98.6	90	110			
Barium	0.201	0.0100	0.200	0	101	90	110			
Beryllium	0.220	0.00100	0.200	0	110	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Chromium	0.205	0.00500	0.200	0	103	90	110			
Cobalt	0.207	0.00500	0.200	0	104	90	110			
Lead	0.203	0.00100	0.200	0	102	90	110			
Molybdenum	0.193	0.00500	0.200	0	96.4	90	110			
Selenium	0.196	0.00500	0.200	0	98.0	90	110			
Thallium	0.204	0.00150	0.200	0	102	90	110			

Sample ID	LCVL3-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 2:46:00 PM	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	0.00502	0.00500	0.00500	0	100	70	130			
Barium	0.00518	0.0100	0.00500	0	104	70	130			
Beryllium	0.00107	0.00100	0.00100	0	107	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Chromium	0.00484	0.00500	0.00500	0	96.7	70	130			
Cobalt	0.00536	0.00500	0.00500	0	107	70	130			
Lead	0.00105	0.00100	0.00100	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160301A

Sample ID	LCVL3-160301	Batch ID:	R84456	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160301A	Analysis Date:	3/1/2016 2:46:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.00502	0.00500	0.00500	0	100	70	130			
Selenium	0.00497	0.00500	0.00500	0	99.3	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160303F

The QC data in batch 73938 applies to the following samples: 1602289-04A, 1602289-05A, 1602289-06A, 1602289-07A, 1602289-08A

Sample ID MB-73938	Batch ID: 73938	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_160303F	Analysis Date: 3/3/2016 6:17:00 PM	Prep Date: 3/2/2016

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 LCS-73938	Batch ID: 73938	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_160303F	Analysis Date: 3/3/2016 6:19:00 PM	Prep Date: 3/2/2016

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	0.196	0.00500	0.200	0	98.2	80	120			
Barium	0.201	0.0100	0.200	0	101	80	120			
Beryllium	0.194	0.00100	0.200	0	96.9	80	120			
Cadmium	0.203	0.00100	0.200	0	101	80	120			
Calcium	4.75	0.300	5.00	0	95.0	80	120			
Chromium	0.201	0.00500	0.200	0	101	80	120			
Cobalt	0.198	0.00500	0.200	0	98.8	80	120			
Lead	0.203	0.00100	0.200	0	102	80	120			
Lithium	0.195	0.0100	0.200	0	97.5	80	120			
Molybdenum	0.198	0.00500	0.200	0	98.8	80	120			
Selenium	0.198	0.00500	0.200	0	99.0	80	120			
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID LCSD-73938	Batch ID: 73938	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS4_160303F	Analysis Date: 3/3/2016 6:21:00 PM	Prep Date: 3/2/2016

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	0.023	15	
Arsenic	0.195	0.00500	0.200	0	97.6	80	120	0.629	15	
Barium	0.201	0.0100	0.200	0	100	80	120	0.303	15	
Beryllium	0.193	0.00100	0.200	0	96.6	80	120	0.363	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160303F

Sample ID	LCSD-73938	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:21:00 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Cadmium	0.199	0.00100	0.200	0	99.7	80	120	1.75	15
Calcium	4.84	0.300	5.00	0	96.7	80	120	1.81	15
Chromium	0.202	0.00500	0.200	0	101	80	120	0.274	15
Cobalt	0.197	0.00500	0.200	0	98.3	80	120	0.474	15
Lead	0.203	0.00100	0.200	0	101	80	120	0.270	15
Lithium	0.198	0.0100	0.200	0	98.8	80	120	1.30	15
Molybdenum	0.196	0.00500	0.200	0	98.0	80	120	0.810	15
Selenium	0.194	0.00500	0.200	0	97.1	80	120	1.97	15
Thallium	0.201	0.00150	0.200	0	101	80	120	0.359	15

Sample ID	1603013-05B SD	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:27:00 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	<0.00400	0.0125	0	0				0	10
Arsenic	0.112	0.0250	0	0.112				0.218	10
Barium	0.0248	0.0500	0	0.0250				0.868	10
Beryllium	<0.00150	0.00500	0	0				0	10
Cadmium	<0.00150	0.00500	0	0.000371				0	10
Calcium	5.94	1.50	0	5.71				3.90	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	0.00149				0	10
Lithium	0.116	0.0500	0	0.110				5.09	10
Molybdenum	0.348	0.0250	0	0.358				2.79	10
Selenium	<0.0100	0.0250	0	0				0	10
Thallium	<0.00250	0.00750	0	0				0	10

Sample ID	1603013-05B PDS	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:47:00 PM	Prep Date:	3/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.201	0.00250	0.200	0	100	80	120		
Arsenic	0.297	0.00500	0.200	0.112	92.9	80	120		
Barium	0.221	0.0100	0.200	0.0250	98.1	80	120		
Beryllium	0.183	0.00100	0.200	0	91.4	80	120		
Cadmium	0.191	0.00100	0.200	0.000371	95.3	80	120		
Calcium	9.90	0.300	5.00	5.71	83.8	80	120		
Chromium	0.195	0.00500	0.200	0	97.7	80	120		
Cobalt	0.187	0.00500	0.200	0	93.5	80	120		
Lead	0.202	0.00100	0.200	0.00149	100	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160303F

Sample ID	1603013-05B PDS	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:47:00 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.282	0.0100	0.200	0.110	86.0	80	120			
Molybdenum	0.527	0.00500	0.200	0.358	84.6	80	120			
Selenium	0.187	0.00500	0.200	0	93.4	80	120			
Thallium	0.198	0.00150	0.200	0	99.0	80	120			

Sample ID	1603013-05B MS	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:49:00 PM	Prep Date:	3/2/2016			
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	0.308	0.00500	0.200	0.112	98.4	80	120			
Barium	0.230	0.0100	0.200	0.0250	102	80	120			
Beryllium	0.188	0.00100	0.200	0	94.1	80	120			
Cadmium	0.195	0.00100	0.200	0.000371	97.2	80	120			
Calcium	10.5	0.300	5.00	5.71	96.4	80	120			
Chromium	0.196	0.00500	0.200	0	98.1	80	120			
Cobalt	0.190	0.00500	0.200	0	94.9	80	120			
Lead	0.205	0.00100	0.200	0.00149	102	80	120			
Lithium	0.298	0.0100	0.200	0.110	93.6	80	120			
Molybdenum	0.557	0.00500	0.200	0.358	99.6	80	120			
Selenium	0.188	0.00500	0.200	0	94.2	80	120			
Thallium	0.201	0.00150	0.200	0	100	80	120			

Sample ID	1603013-05B MSD	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:51:00 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.205	0.00250	0.200	0	102	80	120	1.01	15	
Arsenic	0.313	0.00500	0.200	0.112	101	80	120	1.45	15	
Barium	0.232	0.0100	0.200	0.0250	104	80	120	1.08	15	
Beryllium	0.191	0.00100	0.200	0	95.4	80	120	1.41	15	
Cadmium	0.199	0.00100	0.200	0.000371	99.4	80	120	2.18	15	
Calcium	10.6	0.300	5.00	5.71	97.5	80	120	0.526	15	
Chromium	0.197	0.00500	0.200	0	98.7	80	120	0.581	15	
Cobalt	0.192	0.00500	0.200	0	96.1	80	120	1.23	15	
Lead	0.207	0.00100	0.200	0.00149	103	80	120	1.28	15	
Lithium	0.298	0.0100	0.200	0.110	93.7	80	120	0.076	15	
Molybdenum	0.565	0.00500	0.200	0.358	104	80	120	1.49	15	
Selenium	0.190	0.00500	0.200	0	94.9	80	120	0.775	15	
Thallium	0.205	0.00150	0.200	0	103	80	120	2.22	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160303F

Sample ID	ICV-160303	Batch ID:	R84524	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 11:22:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.0989	0.00250	0.100	0	98.9	90	110			
Arsenic	0.0988	0.00500	0.100	0	98.8	90	110			
Barium	0.0991	0.0100	0.100	0	99.1	90	110			
Beryllium	0.0997	0.00100	0.100	0	99.7	90	110			
Cadmium	0.0995	0.00100	0.100	0	99.5	90	110			
Calcium	2.32	0.300	2.50	0	92.8	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.102	0.00500	0.100	0	102	90	110			
Lead	0.102	0.00100	0.100	0	102	90	110			
Lithium	0.0978	0.0100	0.100	0	97.8	90	110			
Molybdenum	0.0976	0.00500	0.100	0	97.6	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.101	0.00150	0.100	0	101	90	110			

Sample ID	LCVL-160303	Batch ID:	R84524	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 11:29:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00209	0.00250	0.00200	0	105	70	130			
Arsenic	0.00531	0.00500	0.00500	0	106	70	130			
Barium	0.00531	0.0100	0.00500	0	106	70	130			
Beryllium	0.000991	0.00100	0.00100	0	99.1	70	130			
Cadmium	0.00109	0.00100	0.00100	0	109	70	130			
Calcium	0.107	0.300	0.100	0	107	70	130			
Chromium	0.00539	0.00500	0.00500	0	108	70	130			
Cobalt	0.00533	0.00500	0.00500	0	107	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0104	0.0100	0.0100	0	104	70	130			
Molybdenum	0.00523	0.00500	0.00500	0	105	70	130			
Selenium	0.00567	0.00500	0.00500	0	113	70	130			
Thallium	0.00106	0.00150	0.00100	0	106	70	130			

Sample ID	CCV7-160303	Batch ID:	R84524	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:09:00 PM	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	0.201	0.00500	0.200	0	101	90	110			
Barium	0.212	0.0100	0.200	0	106	90	110			
Beryllium	0.195	0.00100	0.200	0	97.4	90	110			
Cadmium	0.211	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160303F

Sample ID	CCV7-160303	Batch ID:	R84524	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:09:00 PM	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	0.207	0.00500	0.200	0	104	90	110			
Cobalt	0.200	0.00500	0.200	0	100	90	110			
Lead	0.209	0.00100	0.200	0	105	90	110			
Lithium	0.199	0.0100	0.200	0	99.4	90	110			
Molybdenum	0.206	0.00500	0.200	0	103	90	110			
Selenium	0.204	0.00500	0.200	0	102	90	110			
Thallium	0.208	0.00150	0.200	0	104	90	110			

Sample ID	LCVL7-160303	Batch ID:	R84524	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:13:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00215	0.00250	0.00200	0	107	70	130			
Arsenic	0.00507	0.00500	0.00500	0	101	70	130			
Barium	0.00518	0.0100	0.00500	0	104	70	130			
Beryllium	0.00108	0.00100	0.00100	0	108	70	130			
Cadmium	0.00105	0.00100	0.00100	0	105	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			
Chromium	0.00509	0.00500	0.00500	0	102	70	130			
Cobalt	0.00507	0.00500	0.00500	0	101	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			
Molybdenum	0.00499	0.00500	0.00500	0	99.8	70	130			
Selenium	0.00596	0.00500	0.00500	0	119	70	130			
Thallium	0.00107	0.00150	0.00100	0	107	70	130			

Sample ID	CCV8-160303	Batch ID:	R84524	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:53:00 PM	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	0.202	0.00500	0.200	0	101	90	110			
Barium	0.211	0.0100	0.200	0	105	90	110			
Beryllium	0.199	0.00100	0.200	0	99.5	90	110			
Cadmium	0.210	0.00100	0.200	0	105	90	110			
Calcium	4.90	0.300	5.00	0	98.1	90	110			
Chromium	0.209	0.00500	0.200	0	104	90	110			
Cobalt	0.203	0.00500	0.200	0	101	90	110			
Lead	0.212	0.00100	0.200	0	106	90	110			
Lithium	0.204	0.0100	0.200	0	102	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160303F

Sample ID	CCV8-160303	Batch ID:	R84524	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:53:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.204	0.00500	0.200	0	102	90	110			
Selenium	0.207	0.00500	0.200	0	104	90	110			
Thallium	0.211	0.00150	0.200	0	105	90	110			

Sample ID	LCVL8-160303	Batch ID:	R84524	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160303F	Analysis Date:	3/3/2016 6:57:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00217	0.00250	0.00200	0	108	70	130			
Arsenic	0.00509	0.00500	0.00500	0	102	70	130			
Barium	0.00521	0.0100	0.00500	0	104	70	130			
Beryllium	0.00106	0.00100	0.00100	0	106	70	130			
Cadmium	0.00109	0.00100	0.00100	0	109	70	130			
Calcium	0.105	0.300	0.100	0	105	70	130			
Chromium	0.00509	0.00500	0.00500	0	102	70	130			
Cobalt	0.00509	0.00500	0.00500	0	102	70	130			
Lead	0.00101	0.00100	0.00100	0	101	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	70	130			
Molybdenum	0.00500	0.00500	0.00500	0	99.9	70	130			
Selenium	0.00608	0.00500	0.00500	0	122	70	130			
Thallium	0.00106	0.00150	0.00100	0	106	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160307A

The QC data in batch 73907 applies to the following samples: 1602289-01A, 1602289-02A, 1602289-03A

Sample ID	MB-73907		Batch ID:	73907		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160307A		Analysis Date:	3/7/2016 1:43:00 PM		Prep Date:	2/29/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0205	0.0300								
Lithium	<0.00500	0.0100								

Sample ID	LCS-73907		Batch ID:	73907		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS4_160307A		Analysis Date:	3/7/2016 1:45:00 PM		Prep Date:	2/29/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.211	0.0300	0.200	0	105	80	120			
Lithium	0.205	0.0100	0.200	0	102	80	120			

Sample ID	LCSD-73907	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 1:47:00 PM	Prep Date:	2/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.214	0.0300	0.200	0	107	80	120	1.44	15	
Lithium	0.202	0.0100	0.200	0	101	80	120	1.05	15	

Sample ID	1602283-17A SD	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 1:53:00 PM	Prep Date:	2/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	<0.0500	0.150	0	0				0	10	
Lithium	<0.0250	0.0500	0	0				0	10	

Sample ID	1602283-17A PDS	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 2:13:00 PM	Prep Date:	2/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.214	0.0300	0.200	0	107	80	120			
Lithium	0.200	0.0100	0.200	0	100	80	120			

Sample ID	1602283-17A MS	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 2:15:00 PM	Prep Date:	2/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.218	0.0300	0.200	0	109	80	120			
Lithium	0.199	0.0100	0.200	0	99.5	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160307A

Sample ID	1602283-17A MSD	Batch ID:	73907	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 2:17:00 PM	Prep Date:	2/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.214	0.0300	0.200	0	107	80	120	1.96	15	
Lithium	0.205	0.0100	0.200	0	103	80	120	2.97	15	

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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160307A

The QC data in batch 73938 applies to the following samples: 1602289-04A, 1602289-05A, 1602289-06A, 1602289-07A, 1602289-08A

Sample ID	MB-73938		Batch ID:	73938		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160307A		Analysis Date:	3/7/2016 5:28:00 PM		Prep Date:	3/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron <0.0100 0.0300

Sample ID	LCS-73938		Batch ID:	73938		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS4_160307A		Analysis Date:	3/7/2016 5:30:00 PM		Prep Date:	3/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.188 0.0300 0.200 0 93.9 80 120

Sample ID	LCSD-73938		Batch ID:	73938		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD		Run ID:	ICP-MS4_160307A		Analysis Date:	3/7/2016 5:32:00 PM		Prep Date:	3/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.200 0.0300 0.200 0 100 80 120 6.37 15

Sample ID	1603013-05B SD	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 5:38:00 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron <2.50 7.50 0 2.16 0 10

Sample ID	1603013-05B PDS	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 5:59:00 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 11.7 1.50 10.0 2.16 95.6 80 120

Sample ID	1603013-05B MS	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 6:01:00 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 2.36 1.50 0.200 2.16 99.4 80 120

Sample ID	1603013-05B MSD	Batch ID:	73938	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 6:03:00 PM	Prep Date:	3/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 2.59 1.50 0.200 2.16 213 80 120 9.17 15 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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160307A

Sample ID	ICV-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 11:53:00 AM	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	2.32	0.300	2.50	0	93.0	90	110			
Lithium	0.100	0.0100	0.100	0	100	90	110			

Sample ID	LCVL-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 11:58:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0240	0.0300	0.0200	0	120	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Lithium	0.0108	0.0100	0.0100	0	108	70	130			

Sample ID	CCV2-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 1:26:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.205	0.0300	0.200	0	102	90	110			
Calcium	4.74	0.300	5.00	0	94.7	90	110			
Lithium	0.206	0.0100	0.200	0	103	90	110			

Sample ID	LCVL2-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 1:38:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0226	0.0300	0.0200	0	113	70	130			
Calcium	0.0952	0.300	0.100	0	95.2	70	130			
Lithium	0.0110	0.0100	0.0100	0	110	70	130			

Sample ID	CCV3-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 2:27:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.190	0.0300	0.200	0	95.0	90	110			
Calcium	4.70	0.300	5.00	0	94.0	90	110			
Lithium	0.199	0.0100	0.200	0	99.4	90	110			

Sample ID	LCVL3-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 2:41:00 PM	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			

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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160307A

Sample ID	LCVL3-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 2:41:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.0986	0.300	0.100	0	98.6	70	130			
Lithium	0.0109	0.0100	0.0100	0	109	70	130			

Sample ID	CCV5-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 5:10:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.195	0.0300	0.200	0	97.6	90	110			
Calcium	4.76	0.300	5.00	0	95.1	90	110			

Sample ID	LCVL5-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 5:24:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0202	0.0300	0.0200	0	101	70	130			
Calcium	0.103	0.300	0.100	0	103	70	130			

Sample ID	CCV6-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 6:17:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.204	0.0300	0.200	0	102	90	110			
Calcium	4.87	0.300	5.00	0	97.5	90	110			

Sample ID	LCVL6-160307	Batch ID:	R84569	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160307A	Analysis Date:	3/7/2016 6:31:00 PM	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	0.100	0.300	0.100	0	100	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160311B

Sample ID	ICV2-160311	Batch ID:	R84666	TestNo:	SW6020A	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS4_160311B	Analysis Date:	3/11/2016 4:25:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.106	0.0300	0.100	0	106	90	110

Sample ID	ILCVL2-160311	Batch ID:	R84666	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160311B	Analysis Date:	3/11/2016 4:44:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.0220	0.0300	0.0200	0	110	70	130

Sample ID	CCV1-160311	Batch ID:	R84666	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160311B	Analysis Date:	3/11/2016 5:27:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.211	0.0300	0.200	0	106	90	110

Sample ID	LCVL1-160311	Batch ID:	R84666	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160311B	Analysis Date:	3/11/2016 5:49:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.0255	0.0300	0.0200	0	128	70	130

Sample ID	CCV2-160311	Batch ID:	R84666	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160311B	Analysis Date:	3/11/2016 6:48:00 PM	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

Sample ID	LCVL2-160311	Batch ID:	R84666	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160311B	Analysis Date:	3/11/2016 7:06:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.0237	0.0300	0.0200	0	119	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_160307A

The QC data in batch 74004 applies to the following samples: 1602289-01D, 1602289-02D, 1602289-03D, 1602289-04D, 1602289-05D, 1602289-06D, 1602289-07D, 1602289-08D

Sample ID	MB-74004		Batch ID:	74004		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC2_160307A		Analysis Date:	3/7/2016 9:28:25 AM		Prep Date:	3/7/2016	
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	LCS-74004		Batch ID:	74004		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC2_160307A		Analysis Date:	3/7/2016 9:43:02 AM		Prep Date:	3/7/2016	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	9.60	1.00	10.00	0	96.0	90	110			
Fluoride	3.79	0.400	4.000	0	94.7	90	110			
Sulfate	30.8	3.00	30.00	0	103	90	110			

Sample ID	LCSD-74004		Batch ID:	74004		TestNo:	E300		Units:	mg/L	
SampType:	LCSD		Run ID:	IC2_160307A		Analysis Date:	3/7/2016 9:57:38 AM		Prep Date:	3/7/2016	
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	0.366	20	
Fluoride	3.83	0.400	4.000	0	95.8	90	110	1.17	20	
Sulfate	30.5	3.00	30.00	0	102	90	110	0.833	20	

Sample ID	1602289-01DMS		Batch ID:	74004		TestNo:	E300		Units:	mg/L	
SampType:	MS		Run ID:	IC2_160307A		Analysis Date:	3/7/2016 2:50:23 PM		Prep Date:	3/7/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2290	100	2000	294.5	99.6	90	110			
Fluoride	2000	40.0	2000	0	99.8	90	110			
Sulfate	3060	300	2000	949.5	106	90	110			

Sample ID	1602289-01DMSD			Batch ID:	74004			TestNo:	E300			Units:	mg/L		
SampType:	MSD			Run ID:	IC2_160307A			Analysis Date:	3/7/2016 3:19:05 PM			Prep Date:	3/7/2016		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Chloride	2290	100	2000	294.5	100	90	110	0.327	20	
Fluoride	2000	40.0	2000	0	100	90	110	0.335	20	
Sulfate	3060	300	2000	949.5	106	90	110	0.001	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_160307A

Sample ID	1603032-01BMS	Batch ID:	74004	TestNo:	E300	Units:	mg/L		
SampType:	MS	Run ID:	IC2_160307A	Analysis Date:	3/7/2016 5:33:05 PM	Prep Date:	3/7/2016		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual
Chloride	2400	100	2000	371.6	102	90	110		
Fluoride	2030	40.0	2000	0	101	90	110		
Sulfate	3800	300	2000	1615	109	90	110		

Sample ID	1603032-01BMSD	Batch ID:	74004	TestNo:	E300	Units:	mg/L		
SampType:	MSD	Run ID:	IC2_160307A	Analysis Date:	3/7/2016 5:47:42 PM	Prep Date:	3/7/2016		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual
Chloride	2410	100	2000	371.6	102	90	110	0.280	20
Fluoride	2040	40.0	2000	0	102	90	110	0.651	20
Sulfate	3790	300	2000	1615	109	90	110	0.309	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_160307A

Sample ID	ICV-160307	Batch ID:	R84582	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_160307A	Analysis Date:	3/7/2016 8:39:01 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	24.4	1.00	25.00	0	97.6	90	110			
Fluoride	9.66	0.400	10.00	0	96.6	90	110			
Sulfate	76.8	3.00	75.00	0	102	90	110			

Sample ID	CCV1-160307	Batch ID:	R84582	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_160307A	Analysis Date:	3/7/2016 12:48:14 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.49	1.00	10.00	0	94.9	90	110			
Fluoride	3.91	0.400	4.000	0	97.7	90	110			
Sulfate	30.5	3.00	30.00	0	102	90	110			

Sample ID	CCV2-160307	Batch ID:	R84582	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_160307A	Analysis Date:	3/7/2016 4:32:08 PM	Prep Date:				
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			
Fluoride	3.97	0.400	4.000	0	99.2	90	110			
Sulfate	30.4	3.00	30.00	0	101	90	110			

Sample ID	CCV3-160307	Batch ID:	R84582	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_160307A	Analysis Date:	3/7/2016 6:02:18 PM	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	4.04	0.400	4.000	0	101	90	110			
Sulfate	30.9	3.00	30.00	0	103	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160301A

The QC data in batch 73915 applies to the following samples: 1602289-01D, 1602289-02D, 1602289-03D, 1602289-04D, 1602289-05D, 1602289-06D

Sample ID	1602284-02D-DUP	Batch ID:	73915	TestNo:	M4500-H+ B	Units:	pH Units@12.6°C
SampType:	DUP	Run ID:	TITRATOR_160301A	Analysis Date:	3/1/2016 9:39:00 AM	Prep Date:	3/1/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.45	0	0	7.360				1.22	5	

Sample ID	1602288-08B-DUP	Batch ID:	73915	TestNo:	M4500-H+ B	Units:	pH Units@15.3°C
SampType:	DUP	Run ID:	TITRATOR_160301A	Analysis Date:	3/1/2016 10:03:00 AM	Prep Date:	3/1/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.79	0	0	6.800				0.147	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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160301A

Sample ID	ICV-160301	Batch ID:	R84431	TestNo:	M4500-H+ B	Units:	pH Units@22°C				
SampType:	ICV	Run ID:	TITRATOR_160301A	Analysis Date:	3/1/2016 9:04:00 AM	Prep Date:	3/1/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH 9.99 0 10.00 0 99.9 99 101

Sample ID	CCV1-160301			Batch ID:	R84431		TestNo:	M4500-H+ B		Units:	pH Units@21.2°C		
SampType:	CCV			Run ID:	TITRATOR_160301A		Analysis Date:	3/1/2016 9:58:00 AM		Prep Date:	3/1/2016		
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

Sample ID	CCV2-160301		Batch ID:	R84431		TestNo:	M4500-H+ B		Units:	pH Units@21°C	
SampType:	CCV		Run ID:	TITRATOR_160301A		Analysis Date:	3/1/2016 10:20:00 AM		Prep Date:	3/1/2016	
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

Sample ID	CCV3-160301			Batch ID:	R84431		TestNo:	M4500-H+ B		Units:	pH Units@21.6°C	
SampType:	CCV			Run ID:	TITRATOR_160301A		Analysis Date:	3/1/2016 10:45:00 AM		Prep Date:	3/1/2016	
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

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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160301B

The QC data in batch 73927 applies to the following samples: 1602289-07D, 1602289-08D

Sample ID	1602289-07D-DUP	Batch ID:	73927	TestNo:	M4500-H+ B	Units:	pH Units@14.9°C
SampType:	DUP	Run ID:	TITRATOR_160301B	Analysis Date:	3/1/2016 10:42:00 AM	Prep Date:	3/1/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		6.97	0	0	7.000		0.429 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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160301B

Sample ID	ICV-160301	Batch ID:	R84436	TestNo:	M4500-H+ B	Units:	pH Units@22°C			
SampType:	ICV	Run ID:	TITRATOR_160301B	Analysis Date:	3/1/2016 9:04:00 AM	Prep Date:	3/1/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.99	0	10.00	0	99.9	99	101			

Sample ID	CCV3-160301	Batch ID:	R84436	TestNo:	M4500-H+ B	Units:	pH Units@21.6°C			
SampType:	CCV	Run ID:	TITRATOR_160301B	Analysis Date:	3/1/2016 10:45:00 AM	Prep Date:	3/1/2016			
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			

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: 1602289
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: WC_160302B

The QC data in batch 73952 applies to the following samples: 1602289-01D, 1602289-02D, 1602289-03D, 1602289-04D, 1602289-05D, 1602289-06D, 1602289-07D, 1602289-08D

Sample ID	MB-73952		Batch ID:	73952		TestNo:	M2540C		Units:	mg/L	
SampType:	MBLK		Run ID:	WC_160302B		Analysis Date:	3/3/2016 9:05:00 AM		Prep Date:	3/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-73952		Batch ID:	73952		TestNo:	M2540C		Units:	mg/L	
SampType:	LCS		Run ID:	WC_160302B		Analysis Date:	3/3/2016 9:05:00 AM		Prep Date:	3/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 765 10.0 745.6 0 103 90 113

Sample ID	1602289-01D-DUP		Batch ID:	73952		TestNo:	M2540C		Units:	mg/L	
SampType:	DUP		Run ID:	WC_160302B		Analysis Date:	3/3/2016 9:05:00 AM		Prep Date:	3/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 2530 50.0 0 2430 4.03 5

Sample ID	1603011-01C-DUP		Batch ID:	73952		TestNo:	M2540C		Units:	mg/L	
SampType:	DUP		Run ID:	WC_160302B		Analysis Date:	3/3/2016 9:05:00 AM		Prep Date:	3/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 2830 50.0 0 2885 1.92 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

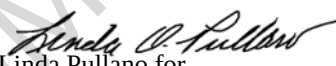
Re: Routine Analysis
Work Order: 392401
SDG: 1602289

Dear Mr. DuPont:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 03, 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: 14279
Chain of Custody: 1602289
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: 1602289 GEL Work Order: 392401

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: BMW-22
Sample ID: 392401001
Matrix: Water
Collect Date: 25-FEB-16 09:45
Receive Date: 03-MAR-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	1.35	+/-1.19	1.93	3.00	pCi/L		AXM6	03/28/16	1218	1551172	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.594	+/-0.372	0.487	1.00	pCi/L		CXP3	03/17/16	0835	1550120	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"						75.8	(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: BMW-23
Sample ID: 392401002
Matrix: Water
Collect Date: 25-FEB-16 10:35
Receive Date: 03-MAR-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	+/-1.11	1.78	3.00	pCi/L		AXM6	03/28/16	1220	1551172	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.604	+/-0.331	0.362	1.00	pCi/L		CXP3	03/17/16	0835	1550120	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"						88.4	(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: 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: BMW-24
Sample ID: 392401003
Matrix: Water
Collect Date: 25-FEB-16 11:15
Receive Date: 03-MAR-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	1.22	+/-1.18	1.93	3.00	pCi/L		AXM6	03/28/16	1218	1551172	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		1.20	+/-0.570	0.716	1.00	pCi/L		CXP3	03/17/16	0835	1550120	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"			75.3	(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: 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: BMW-19
Sample ID: 392401004
Matrix: Water
Collect Date: 25-FEB-16 12:15
Receive Date: 03-MAR-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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		1.94	+/-1.16	1.77	3.00	pCi/L		AXM6	03/28/16	1220	1551172	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.571	+/-0.313	0.342	1.00	pCi/L		CXP3	03/17/16	0835	1550120	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"							89.3	(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: 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: BMW-20
Sample ID: 392401005
Matrix: Water
Collect Date: 25-FEB-16 14:30
Receive Date: 03-MAR-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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		2.85	+/-1.31	1.83	3.00	pCi/L		AXM6	03/28/16	1218	1551172	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226	U	0.604	+/-0.418	0.610	1.00	pCi/L		CXP3	03/17/16	0835	1550120	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"						74.4	(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: 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: BMW-21
Sample ID: 392401006
Matrix: Water
Collect Date: 25-FEB-16 15:10
Receive Date: 03-MAR-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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		2.13	+/-1.15	1.68	3.00	pCi/L		AXM6	03/28/16	1654	1551925	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		0.735	+/-0.467	0.660	1.00	pCi/L		CXP3	03/17/16	0905	1550120	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"						75.4	(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: 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: BMW-11AR
Sample ID: 392401007
Matrix: Water
Collect Date: 25-FEB-16 16:20
Receive Date: 03-MAR-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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		3.80	+/-1.34	1.55	3.00	pCi/L		AXM6	03/28/16	1218	1551172	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		2.43	+/-0.672	0.432	1.00	pCi/L		CXP3	03/17/16	0905	1550120	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"							66.6	(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: 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: BMW-18
Sample ID: 392401008
Matrix: Water
Collect Date: 26-FEB-16 10:15
Receive Date: 03-MAR-16
Collector: Client

Project: DHLA00112
Client ID: DHLA002

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	0.928	+/-1.12	1.90	3.00	pCi/L		AXM6	03/28/16	1218	1551172	1
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226	U	0.297	+/-0.276	0.406	1.00	pCi/L		CXP3	03/17/16	0905	1550120	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"						77.6	(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

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: 392401

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	1551172										
QC1203505415	392332001	DUP									
Radium-228	U	0.113	U	-0.00228	pCi/L	N/A		N/A	AXM6	03/28/16	12:20
	Uncertainty	+/-1.01		+/-0.996							
QC1203505416	LCS										
Radium-228	46.9			37.6	pCi/L		80.2	(75%-125%)		03/28/16	12:18
	Uncertainty			+/-3.35							
QC1203505414	MB										
Radium-228			U	1.01	pCi/L					03/28/16	12:17
	Uncertainty			+/-1.09							
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							
Rad Ra-226											
Batch	1550120										
QC1203502884	392405001	DUP									
Radium-226		3.30		2.85	pCi/L	14.5		(0% - 100%)	CXP3	03/17/16	09:05
	Uncertainty	+/-0.864		+/-0.847							
QC1203502886	LCS										
Radium-226	24.4			21.9	pCi/L		89.8	(75%-125%)		03/17/16	09:40
	Uncertainty			+/-2.04							
QC1203502883	MB										
Radium-226			U	0.262	pCi/L					03/17/16	09:05
	Uncertainty			+/-0.352							
QC1203502885	392405001	MS									
Radium-226	122	3.30		136	pCi/L		109	(75%-125%)		03/17/16	09:40
	Uncertainty	+/-0.864		+/-11.4							

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

GEL LABORATORIES LLC

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

QC Summary

Workorder: 392401

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
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.										
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: 1602289

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

392401

392401

Subcontractor:

GEL Laboratories
PO Box 30712
Charleston, SC 29417

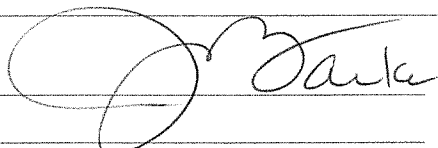
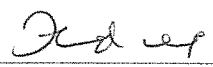
TEL: (843) 556-8171
FAX:
Acct #:

29-Feb-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E903.1	E904.0				
BMW-22	Aqueous	-01B	02/25/16 09:45 AM	500HDPEHNO3		1				
BMW-22	Aqueous	-01C	02/25/16 09:45 AM	500HDPEHNO3	1					
BMW-23	Aqueous	-02B	02/25/16 10:35 AM	500HDPEHNO3		1				
BMW-23	Aqueous	-02C	02/25/16 10:35 AM	500HDPEHNO3	1					
BMW-24	Aqueous	-03B	02/25/16 11:15 AM	500HDPEHNO3		1				
BMW-24	Aqueous	-03C	02/25/16 11:15 AM	500HDPEHNO3	1					
BMW-19	Aqueous	-04B	02/25/16 12:15 PM	500HDPEHNO3		1				
BMW-19	Aqueous	-04C	02/25/16 12:15 PM	500HDPEHNO3	1					
BMW-20	Aqueous	-05B	02/25/16 02:30 PM	500HDPEHNO3		1				
BMW-20	Aqueous	-05C	02/25/16 02:30 PM	500HDPEHNO3	1					
BMW-21	Aqueous	-06B	02/25/16 03:10 PM	500HDPEHNO3		1				
BMW-21	Aqueous	-06C	02/25/16 03:10 PM	500HDPEHNO3	1					
BMW-11AR	Aqueous	-07B	02/25/16 04:20 PM	500HDPEHNO3		1				
BMW-11AR	Aqueous	-07C	02/25/16 04:20 PM	500HDPEHNO3	1					
BMW-18	Aqueous	-08B	02/26/16 10:15 AM	500HDPEHNO3		1				
BMW-18	Aqueous	-08C	02/26/16 10:15 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: 	Date/Time: 2/21/16 1730	Received by: 	Date/Time: 2/25/16 1730
Relinquished by: _____	_____	Received by: 	3/3/16 0800



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>DHLA</u>			SDG/AR/COC/Work Order: <u>392396 / 392401</u>		
Received By: <u>Sarah Trivette</u>			Date Received: <u>3/3/16</u>		
Suspected Hazard Information		Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.	
COC/Samples marked as radioactive?			☒	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0cpm</u>	
Classified Radioactive II or III by RSO?			☒	If yes, Were swipes taken of sample containers < action levels?	
COC/Samples marked containing PCBs?			☒		
Package, COC, and/or Samples marked as beryllium or asbestos containing?			☒	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.	
Shipped as a DOT Hazardous?			☒	Hazard Class Shipped: UN#:	
Samples identified as Foreign Soil?			☒		

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	☒			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*		☒		Preservation Method: Ice bags Blue ice Dry ice <u>(None)</u> Other (describe) <u>15°C</u> *all temperatures are recorded in Celsius
2a	Daily check performed and passed on IR temperature gun?	☒			Temperature Device Serial #: <u>ES032015830</u> Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	☒			
4	Sample containers intact and sealed?	☒			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	☒			Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	Do Low Level Perchlorate samples have headspace as required?		☒		Sample ID's and containers affected:
7	VOA vials contain acid preservation?		☒		(If unknown, select No)
8	VOA vials free of headspace (defined as < 6mm bubble)?		☒		Sample ID's and containers affected:
9	Are Encore containers present?		☒		(If yes, immediately deliver to Volatiles laboratory)
10	Samples received within holding time?	☒			ID's and tests affected:
11	Sample ID's on COC match ID's on bottles?	☒			Sample ID's and containers affected:
12	Date & time on COC match date & time on bottles?	☒			Sample ID's affected:
13	Number of containers received match number indicated on COC?	☒			Sample ID's affected:
14	Are sample containers identifiable as GEL provided?		☒		
15	COC form is properly signed in relinquished/received sections?	☒			
16	Carrier and tracking number.				Circle Applicable: FedEx Air <u>FedEx Ground</u> UPS Field Services Courier Other <u>7757 5484 5817</u>

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials ATPDate 3/3/16Page 1 of 1

GL-CHL-SR-001 Rev 2

List of current GEL Certifications as of 29 March 2016

State	Certification
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 20, 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-Martin Lake

Order No.: 1604102

Dear Will Vienne:

DHL Analytical, Inc. received 8 sample(s) on 4/9/2016 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 blue ink, appearing to read "John DuPont for".

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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AnalyticalQCSummaryReport 1604102	24
Subcontract Report 1604102	42

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 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

PBW
2201 DOUBLE CREEK DR

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 08APR16
ACTWGT: 31.90 LB
CAD: 6991003/SSF01703
DIMS: 18x16x11 IN

BILL THIRD PARTY

TO

DHL
2300 DOUBLE CREEK DR

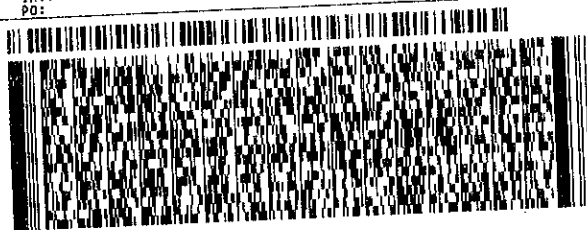
ROUND ROCK TX 78664

(512) 388-8222

REF:

INU:
PO:

DEPT:



FedEx
Express



2 of 2

MPS# 7827 9223 0810
0263

Mstr# 7827 9223 0800

XO BSMA

SATURDAY 12:00P
PRIORITY OVERNIGHT

AHS
78664
TX-US AUS



ORIGIN ID:FWHA (512) 671-3434

PBW
2201 DOUBLE CREEK DR

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 08APR16
ACTWGT: 53.90 LB
CAD: 6991003/SSF01703
DIMS: 22x15x16 IN

BILL THIRD PARTY

TO

DHL
2300 DOUBLE CREEK DR

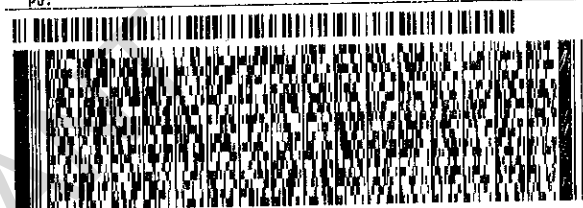
ROUND ROCK TX 78664

(512) 388-8222

REF:

INU:
PO:

DEPT:



FedEx
Express



1 of 2

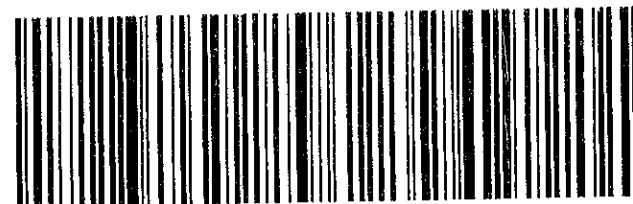
TRK# 7827 9223 0800
0201

MASTER

XO BSMA

SATURDAY 12:00P
PRIORITY OVERNIGHT

AHS
78664
TX-US AUS



Part # 156297V-435 R112 03/17

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 4/11/2016

Work Order Number 1604102

Received by JT

Checklist completed by: [Signature] 4/11/2016

Signature

Date

Reviewed by: [Initials] 4/11/2016

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 ☐ 3.4 °C, 4.3

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-Martin Lake
Lab Order: 1604102

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 4/9/16. A total of 8 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 4/22/16 the matrix spike duplicate recovery was above control limits for Boron. 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 4/22/16 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 4/22/16 LCVL1-160422 was above control limits for Boron. This is flagged accordingly. The associated CCV1-160422 was within control limits for this analyte. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 4/19/16 the matrix spikes and matrix spike duplicate recoveries (1604102-04 MS/MSD & 1604102-05 MS/MSD) were below control limits for Sulfate. These are flagged accordingly in the QC summary report. The samples selected for the matrix spikes and matrix spike duplicates were from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

MERCURY ANALYSIS

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Lab Order: 1604102

CASE NARRATIVE

For Mercury analysis performed on 4/12/16 the matrix spike and matrix spike duplicate recoveries were below control limits. 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. No further corrective actions were taken.

For Mercury analysis performed on 4/12/16 the PDS recovery was below control limits. This is flagged accordingly. The serial dilution was within control limits. No further corrective actions were taken.

LUMINANT

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Lab Order: 1604102**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1604102-01	BMW-24		04/07/16 07:50 AM	4/9/2016
1604102-02	BMW-23		04/07/16 08:40 AM	4/9/2016
1604102-03	BMW-22		04/07/16 09:25 AM	4/9/2016
1604102-04	BMW-20		04/07/16 10:15 AM	4/9/2016
1604102-05	BMW-21		04/07/16 11:15 AM	4/9/2016
1604102-06	BMW-11AR		04/07/16 12:15 PM	4/9/2016
1604102-07	BMW-19		04/07/16 01:05 PM	4/9/2016
1604102-08	BMW-18		04/07/16 01:50 PM	4/9/2016

Lab Order: 1604102
Client: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1604102-01A	BMW-24	04/07/16 07:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-24	04/07/16 07:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-24	04/07/16 07:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-24	04/07/16 07:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/11/16 02:23 PM	74544
1604102-01D	BMW-24	04/07/16 07:50 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-24	04/07/16 07:50 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-24	04/07/16 07:50 AM	Aqueous	M4500-H+ B	pH Preparation	04/13/16 08:22 AM	74564
	BMW-24	04/07/16 07:50 AM	Aqueous	M2540C	TDS Preparation	04/12/16 10:57 AM	74560
1604102-02A	BMW-23	04/07/16 08:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-23	04/07/16 08:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-23	04/07/16 08:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-23	04/07/16 08:40 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/11/16 02:23 PM	74544
1604102-02D	BMW-23	04/07/16 08:40 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-23	04/07/16 08:40 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-23	04/07/16 08:40 AM	Aqueous	M4500-H+ B	pH Preparation	04/13/16 08:22 AM	74564
	BMW-23	04/07/16 08:40 AM	Aqueous	M2540C	TDS Preparation	04/12/16 10:57 AM	74560
1604102-03A	BMW-22	04/07/16 09:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-22	04/07/16 09:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-22	04/07/16 09:25 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/11/16 02:23 PM	74544
1604102-03D	BMW-22	04/07/16 09:25 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-22	04/07/16 09:25 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-22	04/07/16 09:25 AM	Aqueous	M4500-H+ B	pH Preparation	04/13/16 08:22 AM	74564
	BMW-22	04/07/16 09:25 AM	Aqueous	M2540C	TDS Preparation	04/12/16 10:57 AM	74560
1604102-04A	BMW-20	04/07/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-20	04/07/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-20	04/07/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-20	04/07/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-20	04/07/16 10:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/11/16 02:23 PM	74544

Lab Order: 1604102
Client: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1604102-04D	BMW-20	04/07/16 10:15 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-20	04/07/16 10:15 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-20	04/07/16 10:15 AM	Aqueous	M4500-H+ B	pH Preparation	04/13/16 08:22 AM	74564
	BMW-20	04/07/16 10:15 AM	Aqueous	M2540C	TDS Preparation	04/12/16 10:57 AM	74560
1604102-05A	BMW-21	04/07/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-21	04/07/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-21	04/07/16 11:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-21	04/07/16 11:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/11/16 02:23 PM	74544
1604102-05D	BMW-21	04/07/16 11:15 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-21	04/07/16 11:15 AM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-21	04/07/16 11:15 AM	Aqueous	M4500-H+ B	pH Preparation	04/13/16 08:22 AM	74564
	BMW-21	04/07/16 11:15 AM	Aqueous	M2540C	TDS Preparation	04/12/16 10:57 AM	74560
1604102-06A	BMW-11AR	04/07/16 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-11AR	04/07/16 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-11AR	04/07/16 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-11AR	04/07/16 12:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/11/16 02:23 PM	74544
1604102-06D	BMW-11AR	04/07/16 12:15 PM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-11AR	04/07/16 12:15 PM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-11AR	04/07/16 12:15 PM	Aqueous	M4500-H+ B	pH Preparation	04/13/16 08:22 AM	74564
	BMW-11AR	04/07/16 12:15 PM	Aqueous	M2540C	TDS Preparation	04/12/16 10:57 AM	74560
1604102-07A	BMW-19	04/07/16 01:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-19	04/07/16 01:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-19	04/07/16 01:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-19	04/07/16 01:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-19	04/07/16 01:05 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/11/16 02:23 PM	74544
1604102-07D	BMW-19	04/07/16 01:05 PM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-19	04/07/16 01:05 PM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-19	04/07/16 01:05 PM	Aqueous	M4500-H+ B	pH Preparation	04/13/16 08:22 AM	74564

Lab Order: 1604102
Client: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1604102-07D	BMW-19	04/07/16 01:05 PM	Aqueous	M2540C	TDS Preparation	04/12/16 10:57 AM	74560
1604102-08A	BMW-18	04/07/16 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-18	04/07/16 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-18	04/07/16 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/12/16 08:44 AM	74547
	BMW-18	04/07/16 01:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/11/16 02:23 PM	74544
1604102-08D	BMW-18	04/07/16 01:50 PM	Aqueous	E300	Anion Preparation	04/19/16 09:20 AM	74666
	BMW-18	04/07/16 01:50 PM	Aqueous	M4500-H+ B	pH Preparation	04/13/16 08:22 AM	74564
	BMW-18	04/07/16 01:50 PM	Aqueous	M2540C	TDS Preparation	04/12/16 10:57 AM	74560

Lab Order: 1604102
Client: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1604102-01A	BMW-24	Aqueous	SW7470A	Mercury Total: Aqueous	74544	1	04/12/16 10:46 AM	CETAC2_HG_160412A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/13/16 02:24 PM	ICP-MS4_160413A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/22/16 02:41 PM	ICP-MS4_160422C
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	10	04/22/16 02:57 PM	ICP-MS4_160422C
1604102-01D	BMW-24	Aqueous	E300	Anions by IC method - Water	74666	1	04/19/16 11:00 AM	IC2_160419A
	BMW-24	Aqueous	E300	Anions by IC method - Water	74666	10	04/19/16 02:26 PM	IC2_160419A
	BMW-24	Aqueous	M4500-H+ B	pH	74564	1	04/13/16 09:33 AM	TITRATOR_160413A
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	74560	1	04/13/16 08:45 AM	WC_160412B
1604102-02A	BMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	74544	1	04/12/16 10:58 AM	CETAC2_HG_160412A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/22/16 02:43 PM	ICP-MS4_160422C
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	10	04/22/16 03:29 PM	ICP-MS4_160422C
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/13/16 02:26 PM	ICP-MS4_160413A
1604102-02D	BMW-23	Aqueous	E300	Anions by IC method - Water	74666	1	04/19/16 11:15 AM	IC2_160419A
	BMW-23	Aqueous	E300	Anions by IC method - Water	74666	10	04/19/16 02:41 PM	IC2_160419A
	BMW-23	Aqueous	M4500-H+ B	pH	74564	1	04/13/16 09:37 AM	TITRATOR_160413A
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	74560	1	04/13/16 08:45 AM	WC_160412B
1604102-03A	BMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	74544	1	04/12/16 11:00 AM	CETAC2_HG_160412A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	10	04/22/16 02:45 PM	ICP-MS4_160422C
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/13/16 02:28 PM	ICP-MS4_160413A
1604102-03D	BMW-22	Aqueous	E300	Anions by IC method - Water	74666	1	04/19/16 11:34 AM	IC2_160419A
	BMW-22	Aqueous	E300	Anions by IC method - Water	74666	10	04/19/16 02:55 PM	IC2_160419A
	BMW-22	Aqueous	M4500-H+ B	pH	74564	1	04/13/16 09:39 AM	TITRATOR_160413A
	BMW-22	Aqueous	M2540C	Total Dissolved Solids	74560	1	04/13/16 08:45 AM	WC_160412B
1604102-04A	BMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	74544	1	04/12/16 11:02 AM	CETAC2_HG_160412A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/25/16 11:55 AM	ICP-MS4_160425D
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	10	04/22/16 03:31 PM	ICP-MS4_160422C

Lab Order: 1604102
Client: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1604102-04A	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/13/16 02:30 PM	ICP-MS4_160413A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/22/16 02:47 PM	ICP-MS4_160422C
1604102-04D	BMW-20	Aqueous	E300	Anions by IC method - Water	74666	1	04/19/16 11:48 AM	IC2_160419A
	BMW-20	Aqueous	E300	Anions by IC method - Water	74666	10	04/19/16 03:10 PM	IC2_160419A
	BMW-20	Aqueous	M4500-H+ B	pH	74564	1	04/13/16 09:41 AM	TITRATOR_160413A
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	74560	1	04/13/16 08:45 AM	WC_160412B
1604102-05A	BMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	74544	1	04/12/16 11:05 AM	CETAC2_HG_160412A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/13/16 02:32 PM	ICP-MS4_160413A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/22/16 02:49 PM	ICP-MS4_160422C
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	10	04/22/16 03:33 PM	ICP-MS4_160422C
1604102-05D	BMW-21	Aqueous	E300	Anions by IC method - Water	74666	1	04/19/16 12:03 PM	IC2_160419A
	BMW-21	Aqueous	E300	Anions by IC method - Water	74666	100	04/19/16 03:24 PM	IC2_160419A
	BMW-21	Aqueous	M4500-H+ B	pH	74564	1	04/13/16 09:44 AM	TITRATOR_160413A
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	74560	1	04/13/16 08:45 AM	WC_160412B
1604102-06A	BMW-11AR	Aqueous	SW7470A	Mercury Total: Aqueous	74544	1	04/12/16 11:07 AM	CETAC2_HG_160412A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/22/16 02:51 PM	ICP-MS4_160422C
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	10	04/22/16 03:35 PM	ICP-MS4_160422C
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/13/16 02:34 PM	ICP-MS4_160413A
1604102-06D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	74666	1	04/19/16 12:17 PM	IC2_160419A
	BMW-11AR	Aqueous	E300	Anions by IC method - Water	74666	10	04/19/16 03:39 PM	IC2_160419A
	BMW-11AR	Aqueous	M4500-H+ B	pH	74564	1	04/13/16 09:47 AM	TITRATOR_160413A
	BMW-11AR	Aqueous	M2540C	Total Dissolved Solids	74560	1	04/13/16 08:45 AM	WC_160412B
1604102-07A	BMW-19	Aqueous	SW7470A	Mercury Total: Aqueous	74544	1	04/12/16 11:09 AM	CETAC2_HG_160412A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/13/16 02:36 PM	ICP-MS4_160413A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/22/16 02:53 PM	ICP-MS4_160422C
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	10	04/22/16 03:37 PM	ICP-MS4_160422C

Lab Order: 1604102
Client: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1604102-07A	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	50	04/25/16 02:45 PM	ICP-MS4_160425E
1604102-07D	BMW-19	Aqueous	E300	Anions by IC method - Water	74666	1	04/19/16 12:32 PM	IC2_160419A
	BMW-19	Aqueous	E300	Anions by IC method - Water	74666	100	04/19/16 03:54 PM	IC2_160419A
	BMW-19	Aqueous	M4500-H+ B	pH	74564	1	04/13/16 09:50 AM	TITRATOR_160413A
	BMW-19	Aqueous	M2540C	Total Dissolved Solids	74560	1	04/13/16 08:45 AM	WC_160412B
1604102-08A	BMW-18	Aqueous	SW7470A	Mercury Total: Aqueous	74544	1	04/12/16 11:11 AM	CETAC2_HG_160412A
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/13/16 02:38 PM	ICP-MS4_160413A
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	1	04/22/16 02:55 PM	ICP-MS4_160422C
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	74547	10	04/22/16 03:39 PM	ICP-MS4_160422C
1604102-08D	BMW-18	Aqueous	E300	Anions by IC method - Water	74666	1	04/19/16 12:47 PM	IC2_160419A
	BMW-18	Aqueous	M4500-H+ B	pH	74564	1	04/13/16 09:51 AM	TITRATOR_160413A
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	74560	1	04/13/16 08:45 AM	WC_160412B

DHL Analytical, Inc.

Date: 20-May-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Project No: 5164-B
Lab Order: 1604102

Client Sample ID: BMW-24
Lab ID: 1604102-01
Collection Date: 04/07/16 07:50 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/12/16 10:46 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/13/16 02:24 PM
Arsenic	0.00376	0.00200	0.00500	J	mg/L	1	04/13/16 02:24 PM
Barium	0.202	0.00300	0.0100		mg/L	1	04/13/16 02:24 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:24 PM
Boron	0.532	0.0100	0.0300		mg/L	1	04/22/16 02:41 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:24 PM
Calcium	63.4	1.00	3.00		mg/L	10	04/22/16 02:57 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:24 PM
Cobalt	0.0238	0.00300	0.00500		mg/L	1	04/13/16 02:24 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:24 PM
Lithium	0.0415	0.00500	0.0100		mg/L	1	04/13/16 02:24 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:24 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:24 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/13/16 02:24 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	224	3.00	10.0		mg/L	10	04/19/16 02:26 PM
Fluoride	0.109	0.100	0.400	J	mg/L	1	04/19/16 11:00 AM
Sulfate	240	10.0	30.0		mg/L	10	04/19/16 02:26 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	6.56	0	0		pH Units@19.4°C	1	04/13/16 09:33 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1100	10.0	10.0		mg/L	1	04/13/16 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: 20-May-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Project No: 5164-B
Lab Order: 1604102

Client Sample ID: BMW-23
Lab ID: 1604102-02
Collection Date: 04/07/16 08:40 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/12/16 10:58 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/13/16 02:26 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:26 PM
Barium	0.0472	0.00300	0.0100		mg/L	1	04/13/16 02:26 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:26 PM
Boron	1.22	0.0100	0.0300		mg/L	1	04/22/16 02:43 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:26 PM
Calcium	95.1	1.00	3.00		mg/L	10	04/22/16 03:29 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:26 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/13/16 02:26 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:26 PM
Lithium	0.0950	0.00500	0.0100		mg/L	1	04/13/16 02:26 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:26 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:26 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/13/16 02:26 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	221	3.00	10.0		mg/L	10	04/19/16 02:41 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/19/16 11:15 AM
Sulfate	503	10.0	30.0		mg/L	10	04/19/16 02:41 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.89	0	0		pH Units@19.3°C	1	04/13/16 09:37 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1510	50.0	50.0		mg/L	1	04/13/16 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: 20-May-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Project No: 5164-B
Lab Order: 1604102

Client Sample ID: BMW-22
Lab ID: 1604102-03
Collection Date: 04/07/16 09:25 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/12/16 11:00 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/13/16 02:28 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:28 PM
Barium	0.0720	0.00300	0.0100		mg/L	1	04/13/16 02:28 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:28 PM
Boron	3.34	0.100	0.300		mg/L	10	04/22/16 02:45 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:28 PM
Calcium	202	1.00	3.00		mg/L	10	04/22/16 02:45 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:28 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/13/16 02:28 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:28 PM
Lithium	0.0773	0.00500	0.0100		mg/L	1	04/13/16 02:28 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:28 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:28 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/13/16 02:28 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	256	3.00	10.0		mg/L	10	04/19/16 02:55 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/19/16 11:34 AM
Sulfate	839	10.0	30.0		mg/L	10	04/19/16 02:55 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.11	0	0		pH Units@20.2°C	1	04/13/16 09:39 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2230	50.0	50.0		mg/L	1	04/13/16 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: 20-May-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Project No: 5164-B
Lab Order: 1604102

Client Sample ID: BMW-20
Lab ID: 1604102-04
Collection Date: 04/07/16 10:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/12/16 11:02 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/13/16 02:30 PM
Arsenic	0.00411	0.00200	0.00500	J	mg/L	1	04/13/16 02:30 PM
Barium	0.0912	0.00300	0.0100		mg/L	1	04/13/16 02:30 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:30 PM
Boron	0.0787	0.0100	0.0300		mg/L	1	04/25/16 11:55 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:30 PM
Calcium	80.0	1.00	3.00		mg/L	10	04/22/16 03:31 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:30 PM
Cobalt	0.0276	0.00300	0.00500		mg/L	1	04/13/16 02:30 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:30 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	04/13/16 02:30 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:30 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:30 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/13/16 02:30 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	30.0	0.300	1.00		mg/L	1	04/19/16 11:48 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/19/16 11:48 AM
Sulfate	219	10.0	30.0		mg/L	10	04/19/16 03:10 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.13	0	0		pH Units@19.4°C	1	04/13/16 09:41 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	600	10.0	10.0		mg/L	1	04/13/16 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: 20-May-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Project No: 5164-B
Lab Order: 1604102

Client Sample ID: BMW-21
Lab ID: 1604102-05
Collection Date: 04/07/16 11:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/12/16 11:05 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/13/16 02:32 PM
Arsenic	0.00337	0.00200	0.00500	J	mg/L	1	04/13/16 02:32 PM
Barium	0.0472	0.00300	0.0100		mg/L	1	04/13/16 02:32 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:32 PM
Boron	0.990	0.0100	0.0300		mg/L	1	04/22/16 02:49 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:32 PM
Calcium	158	1.00	3.00		mg/L	10	04/22/16 03:33 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:32 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/13/16 02:32 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:32 PM
Lithium	0.0653	0.00500	0.0100		mg/L	1	04/13/16 02:32 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:32 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:32 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/13/16 02:32 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	373	30.0	100		mg/L	100	04/19/16 03:24 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/19/16 12:03 PM
Sulfate	454	100	300		mg/L	100	04/19/16 03:24 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	7.50	0	0		pH Units@19.7°C	1	04/13/16 09:44 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2190	50.0	50.0		mg/L	1	04/13/16 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: 20-May-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Project No: 5164-B
Lab Order: 1604102

Client Sample ID: BMW-11AR
Lab ID: 1604102-06
Collection Date: 04/07/16 12:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/12/16 11:07 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/13/16 02:34 PM
Arsenic	0.00614	0.00200	0.00500		mg/L	1	04/13/16 02:34 PM
Barium	0.0929	0.00300	0.0100		mg/L	1	04/13/16 02:34 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:34 PM
Boron	0.391	0.0100	0.0300		mg/L	1	04/22/16 02:51 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:34 PM
Calcium	151	1.00	3.00		mg/L	10	04/22/16 03:35 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:34 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/13/16 02:34 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:34 PM
Lithium	0.0195	0.00500	0.0100		mg/L	1	04/13/16 02:34 PM
Molybdenum	0.00444	0.00200	0.00500	J	mg/L	1	04/13/16 02:34 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:34 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/13/16 02:34 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	17.5	0.300	1.00		mg/L	1	04/19/16 12:17 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/19/16 12:17 PM
Sulfate	334	10.0	30.0		mg/L	10	04/19/16 03:39 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.33	0	0		pH Units@19.8°C	1	04/13/16 09:47 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1290	50.0	50.0		mg/L	1	04/13/16 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: 20-May-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Project No: 5164-B
Lab Order: 1604102

Client Sample ID: BMW-19
Lab ID: 1604102-07
Collection Date: 04/07/16 01:05 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/12/16 11:09 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/13/16 02:36 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:36 PM
Barium	0.0178	0.00300	0.0100		mg/L	1	04/13/16 02:36 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:36 PM
Boron	0.424	0.0100	0.0300		mg/L	1	04/22/16 02:53 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:36 PM
Calcium	480	5.00	15.0		mg/L	50	04/25/16 02:45 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:36 PM
Cobalt	0.0137	0.00300	0.00500		mg/L	1	04/13/16 02:36 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:36 PM
Lithium	0.0591	0.00500	0.0100		mg/L	1	04/13/16 02:36 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:36 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:36 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/13/16 02:36 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	8.46	0.300	1.00		mg/L	1	04/19/16 12:32 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/19/16 12:32 PM
Sulfate	2270	100	300		mg/L	100	04/19/16 03:54 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.18	0	0		pH Units@20.4°C	1	04/13/16 09:50 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	3740	50.0	50.0		mg/L	1	04/13/16 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: 20-May-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant-Martin Lake
Project No: 5164-B
Lab Order: 1604102

Client Sample ID: BMW-18
Lab ID: 1604102-08
Collection Date: 04/07/16 01:50 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/12/16 11:11 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/13/16 02:38 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:38 PM
Barium	0.0306	0.00300	0.0100		mg/L	1	04/13/16 02:38 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:38 PM
Boron	0.423	0.0100	0.0300		mg/L	1	04/22/16 02:55 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:38 PM
Calcium	7.08	1.00	3.00		mg/L	10	04/22/16 03:39 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:38 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/13/16 02:38 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/13/16 02:38 PM
Lithium	0.0171	0.00500	0.0100		mg/L	1	04/13/16 02:38 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:38 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/13/16 02:38 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/13/16 02:38 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	16.3	0.300	1.00		mg/L	1	04/19/16 12:47 PM
Fluoride	0.117	0.100	0.400	J	mg/L	1	04/19/16 12:47 PM
Sulfate	87.4	1.00	3.00		mg/L	1	04/19/16 12:47 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	8.59	0	0		pH Units@20.6°C	1	04/13/16 09:51 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	489	10.0	10.0		mg/L	1	04/13/16 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: 1604102

Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160412A

The QC data in batch 74544 applies to the following samples: 1604102-01A, 1604102-02A, 1604102-03A, 1604102-04A, 1604102-05A, 1604102-06A, 1604102-07A, 1604102-08A

Sample ID	MB-74544	Batch ID:	74544	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 10:35:37 AM	Prep Date:	4/11/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-74544	Batch ID:	74544	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 10:40:09 AM	Prep Date:	4/11/2016			
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	LCSD-74544	Batch ID:	74544	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 10:42:25 AM	Prep Date:	4/11/2016			
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 7.14 15

Sample ID	1604102-01A SD	Batch ID:	74544	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 10:49:12 AM	Prep Date:	4/11/2016			
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	1604102-01A PDS	Batch ID:	74544	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 10:51:28 AM	Prep Date:	4/11/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00147 0.000200 0.00250 0 58.8 85 115 S

Sample ID	1604102-01A MS	Batch ID:	74544	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 10:53:44 AM	Prep Date:	4/11/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00113 0.000200 0.00200 0 56.5 80 120 S

Sample ID	1604102-01A MSD	Batch ID:	74544	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 10:56:00 AM	Prep Date:	4/11/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00111 0.000200 0.00200 0 55.5 80 120 1.79 15 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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160412A

Sample ID	ICV-160412	Batch ID:	R85189	TestNo:	SW7470A	Units:	mg/L			
SampType:	ICV	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 10:31:03 AM	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	CCV1-160412	Batch ID:	R85189	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160412A	Analysis Date:	4/12/2016 11:14:10 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	90	110			

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: 1604102

Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160413A

The QC data in batch 74547 applies to the following samples: 1604102-01A, 1604102-02A, 1604102-03A, 1604102-04A, 1604102-05A, 1604102-06A, 1604102-07A, 1604102-08A

Sample ID	MB-74547	Batch ID:	74547	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:12:00 PM	Prep Date:	4/12/2016

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	LCS-74547	Batch ID:	74547	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:14:00 PM	Prep Date:	4/12/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.7	80	120			
Arsenic	0.197	0.00500	0.200	0	98.7	80	120			
Barium	0.199	0.0100	0.200	0	99.6	80	120			
Beryllium	0.203	0.00100	0.200	0	101	80	120			
Cadmium	0.199	0.00100	0.200	0	99.7	80	120			
Calcium	4.85	0.300	5.00	0	96.9	80	120			
Chromium	0.200	0.00500	0.200	0	100	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			
Lithium	0.207	0.0100	0.200	0	104	80	120			
Molybdenum	0.196	0.00500	0.200	0	98.1	80	120			
Selenium	0.198	0.00500	0.200	0	99.0	80	120			
Thallium	0.198	0.00150	0.200	0	99.0	80	120			

Sample ID	LCSD-74547	Batch ID:	74547	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:16:00 PM	Prep Date:	4/12/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	100	80	120	0.499	15	
Arsenic	0.199	0.00500	0.200	0	99.4	80	120	0.632	15	
Barium	0.200	0.0100	0.200	0	99.8	80	120	0.173	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160413A

Sample ID	LCSD-74547	Batch ID:	74547	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:16:00 PM	Prep Date:	4/12/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.204	0.00100	0.200	0	102	80	120	0.354	15	
Cadmium	0.203	0.00100	0.200	0	101	80	120	1.69	15	
Calcium	4.85	0.300	5.00	0	97.0	80	120	0.067	15	
Chromium	0.200	0.00500	0.200	0	100	80	120	0.070	15	
Cobalt	0.201	0.00500	0.200	0	100	80	120	0.042	15	
Lead	0.198	0.00100	0.200	0	98.8	80	120	0.182	15	
Lithium	0.204	0.0100	0.200	0	102	80	120	1.46	15	
Molybdenum	0.196	0.00500	0.200	0	97.9	80	120	0.227	15	
Selenium	0.196	0.00500	0.200	0	98.2	80	120	0.749	15	
Thallium	0.196	0.00150	0.200	0	97.8	80	120	1.29	15	

Sample ID: 1604103-01A SD	Batch ID: 74547	TestNo: SW6020A	Units: mg/L							
SampType: SD	Run ID: ICP-MS4_160413A	Analysis Date: 4/13/2016 2:22:00 PM	Prep Date: 4/12/2016							
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	0.0627	0.0500	0	0.0616				1.68	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Chromium	0.0113	0.0250	0	0.0111				1.92	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	<0.00150	0.00500	0	0.000338				0	10	
Lithium	<0.0250	0.0500	0	0.0106				0	10	
Molybdenum	0.321	0.0250	0	0.320				0.281	10	
Selenium	0.0345	0.0250	0	0.0333				3.54	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID: 1604103-01A PDS	Batch ID: 74547	TestNo: SW6020A	Units: mg/L							
SampType: PDS	Run ID: ICP-MS4_160413A	Analysis Date: 4/13/2016 2:42:00 PM	Prep Date: 4/12/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.199	0.00250	0.200	0	99.6	80	120			
Arsenic	0.196	0.00500	0.200	0	97.8	80	120			
Barium	0.252	0.0100	0.200	0.0616	95.4	80	120			
Beryllium	0.191	0.00100	0.200	0	95.3	80	120			
Cadmium	0.186	0.00100	0.200	0	93.2	80	120			
Chromium	0.208	0.00500	0.200	0.0111	98.3	80	120			
Cobalt	0.192	0.00500	0.200	0	96.0	80	120			
Lead	0.191	0.00100	0.200	0.000338	95.1	80	120			
Lithium	0.196	0.0100	0.200	0.0106	92.5	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160413A

Sample ID	1604103-01A PDS	Batch ID:	74547	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:42:00 PM	Prep Date:	4/12/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum		0.500	0.00500	0.200	0.320	89.6	80	120			
Selenium		0.226	0.00500	0.200	0.0333	96.1	80	120			
Thallium		0.188	0.00150	0.200	0	93.9	80	120			

Sample ID	1604103-01A MS	Batch ID:	74547	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:44:00 PM	Prep Date:	4/12/2016			
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	0.201	0.00500	0.200	0	101	80	120			
Barium	0.254	0.0100	0.200	0.0616	96.3	80	120			
Beryllium	0.195	0.00100	0.200	0	97.6	80	120			
Cadmium	0.190	0.00100	0.200	0	95.0	80	120			
Calcium	209	0.300	5.00	204	103	80	120			
Chromium	0.193	0.00500	0.200	0.0111	90.8	80	120			
Cobalt	0.195	0.00500	0.200	0	97.3	80	120			
Lead	0.195	0.00100	0.200	0.000338	97.4	80	120			
Lithium	0.199	0.0100	0.200	0.0106	94.2	80	120			
Molybdenum	0.514	0.00500	0.200	0.320	97.0	80	120			
Selenium	0.235	0.00500	0.200	0.0333	101	80	120			
Thallium	0.194	0.00150	0.200	0	97.2	80	120			

Sample ID	1604103-01A MSD	Batch ID:	74547	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:46:00 PM	Prep Date:	4/12/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	80	120	1.84	15	
Arsenic	0.201	0.00500	0.200	0	101	80	120	0.088	15	
Barium	0.258	0.0100	0.200	0.0616	98.0	80	120	1.32	15	
Beryllium	0.189	0.00100	0.200	0	94.5	80	120	3.18	15	
Cadmium	0.192	0.00100	0.200	0	96.0	80	120	0.987	15	
Calcium	210	0.300	5.00	204	110	80	120	0.170	15	
Chromium	0.192	0.00500	0.200	0.0111	90.6	80	120	0.187	15	
Cobalt	0.192	0.00500	0.200	0	96.1	80	120	1.28	15	
Lead	0.195	0.00100	0.200	0.000338	97.5	80	120	0.121	15	
Lithium	0.202	0.0100	0.200	0.0106	95.8	80	120	1.52	15	
Molybdenum	0.521	0.00500	0.200	0.320	100	80	120	1.27	15	
Selenium	0.233	0.00500	0.200	0.0333	99.7	80	120	1.12	15	
Thallium	0.195	0.00150	0.200	0	97.7	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160413A

Sample ID	ICV-160413	Batch ID:	R85219	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 10:50:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.0999	0.00250	0.100	0	99.9	90	110			
Arsenic	0.0990	0.00500	0.100	0	99.0	90	110			
Barium	0.0998	0.0100	0.100	0	99.8	90	110			
Beryllium	0.0947	0.00100	0.100	0	94.7	90	110			
Cadmium	0.0994	0.00100	0.100	0	99.4	90	110			
Calcium	2.34	0.300	2.50	0	93.7	90	110			
Chromium	0.103	0.00500	0.100	0	103	90	110			
Cobalt	0.103	0.00500	0.100	0	103	90	110			
Lead	0.100	0.00100	0.100	0	100	90	110			
Lithium	0.0945	0.0100	0.100	0	94.5	90	110			
Molybdenum	0.0980	0.00500	0.100	0	98.0	90	110			
Selenium	0.100	0.00500	0.100	0	100	90	110			
Thallium	0.0981	0.00150	0.100	0	98.1	90	110			

Sample ID	LCVL-160413	Batch ID:	R85219	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 10:56:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00186	0.00250	0.00200	0	93.0	70	130			
Arsenic	0.00481	0.00500	0.00500	0	96.2	70	130			
Barium	0.00478	0.0100	0.00500	0	95.7	70	130			
Beryllium	0.000836	0.00100	0.00100	0	83.6	70	130			
Cadmium	0.000938	0.00100	0.00100	0	93.8	70	130			
Calcium	0.0872	0.300	0.100	0	87.2	70	130			
Chromium	0.00519	0.00500	0.00500	0	104	70	130			
Cobalt	0.00495	0.00500	0.00500	0	99.0	70	130			
Lead	0.000984	0.00100	0.00100	0	98.4	70	130			
Lithium	0.00998	0.0100	0.0100	0	99.8	70	130			
Molybdenum	0.00476	0.00500	0.00500	0	95.3	70	130			
Selenium	0.00483	0.00500	0.00500	0	96.5	70	130			
Thallium	0.000942	0.00150	0.00100	0	94.2	70	130			

Sample ID	CCV4-160413	Batch ID:	R85219	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 1:59:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.196	0.00250	0.200	0	98.0	90	110			
Arsenic	0.194	0.00500	0.200	0	97.1	90	110			
Barium	0.193	0.0100	0.200	0	96.6	90	110			
Beryllium	0.196	0.00100	0.200	0	97.8	90	110			
Cadmium	0.194	0.00100	0.200	0	97.1	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160413A

Sample ID	CCV4-160413	Batch ID:	R85219	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 1:59:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.68	0.300	5.00	0	93.6	90	110			
Chromium	0.196	0.00500	0.200	0	98.1	90	110			
Cobalt	0.197	0.00500	0.200	0	98.5	90	110			
Lead	0.193	0.00100	0.200	0	96.3	90	110			
Lithium	0.200	0.0100	0.200	0	99.8	90	110			
Molybdenum	0.192	0.00500	0.200	0	96.0	90	110			
Selenium	0.196	0.00500	0.200	0	98.1	90	110			
Thallium	0.192	0.00150	0.200	0	95.9	90	110			

Sample ID	LCVL4-160413	Batch ID:	R85219	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:03:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00194	0.00250	0.00200	0	97.0	70	130			
Arsenic	0.00485	0.00500	0.00500	0	97.0	70	130			
Barium	0.00477	0.0100	0.00500	0	95.3	70	130			
Beryllium	0.000825	0.00100	0.00100	0	82.5	70	130			
Cadmium	0.000962	0.00100	0.00100	0	96.2	70	130			
Calcium	0.0864	0.300	0.100	0	86.4	70	130			
Chromium	0.00501	0.00500	0.00500	0	100	70	130			
Cobalt	0.00483	0.00500	0.00500	0	96.6	70	130			
Lead	0.000893	0.00100	0.00100	0	89.3	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			
Molybdenum	0.00466	0.00500	0.00500	0	93.1	70	130			
Selenium	0.00438	0.00500	0.00500	0	87.6	70	130			
Thallium	0.000934	0.00150	0.00100	0	93.4	70	130			

Sample ID	CCV5-160413	Batch ID:	R85219	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:48:00 PM	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	0.195	0.00500	0.200	0	97.5	90	110			
Barium	0.195	0.0100	0.200	0	97.7	90	110			
Beryllium	0.198	0.00100	0.200	0	98.8	90	110			
Cadmium	0.194	0.00100	0.200	0	97.2	90	110			
Calcium	4.76	0.300	5.00	0	95.1	90	110			
Chromium	0.197	0.00500	0.200	0	98.3	90	110			
Cobalt	0.198	0.00500	0.200	0	98.8	90	110			
Lead	0.193	0.00100	0.200	0	96.3	90	110			
Lithium	0.202	0.0100	0.200	0	101	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160413A

Sample ID	CCV5-160413	Batch ID:	R85219	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:48:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum		0.191	0.00500	0.200	0	95.5	90	110			
Selenium		0.196	0.00500	0.200	0	97.8	90	110			
Thallium		0.192	0.00150	0.200	0	95.8	90	110			

Sample ID	LCVL5-160413	Batch ID:	R85219	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160413A	Analysis Date:	4/13/2016 2:53:00 PM	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		0.00483	0.00500	0.00500	0	96.6	70	130			
Barium		0.00481	0.0100	0.00500	0	96.2	70	130			
Beryllium		0.000931	0.00100	0.00100	0	93.1	70	130			
Cadmium		0.000962	0.00100	0.00100	0	96.2	70	130			
Calcium		0.0937	0.300	0.100	0	93.7	70	130			
Chromium		0.00506	0.00500	0.00500	0	101	70	130			
Cobalt		0.00490	0.00500	0.00500	0	97.9	70	130			
Lead		0.000923	0.00100	0.00100	0	92.3	70	130			
Lithium		0.0115	0.0100	0.0100	0	115	70	130			
Molybdenum		0.00476	0.00500	0.00500	0	95.2	70	130			
Selenium		0.00463	0.00500	0.00500	0	92.6	70	130			
Thallium		0.000956	0.00150	0.00100	0	95.6	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160422C

The QC data in batch 74547 applies to the following samples: 1604102-01A, 1604102-02A, 1604102-03A, 1604102-04A, 1604102-05A, 1604102-06A, 1604102-07A, 1604102-08A

Sample ID	MB-74547		Batch ID:	74547		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160422C		Analysis Date:	4/22/2016 2:29:00 PM		Prep Date:	4/12/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	<0.0100	0.0300								

Sample ID	LCS-74547			Batch ID:	74547		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_160422C		Analysis Date:	4/22/2016 2:31:00 PM		Prep Date:	4/12/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	0.189	0.0300	0.200	0	94.4	80	120			

Sample ID	LCSD-74547			Batch ID:	74547		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_160422C		Analysis Date:	4/22/2016 2:33:00 PM		Prep Date:	4/12/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	0.199	0.0300	0.200	0	99.4	80	120	5.09	15	

Sample ID	1604103-01A SD		Batch ID:	74547		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD		Run ID:	ICP-MS4_160422C		Analysis Date:	4/22/2016 2:39:00 PM		Prep Date:	4/12/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	5.94	1.50	0	5.31				11.2	10	R
Calcium	209	15.0	0	209				0.068	10	

Sample ID	1604103-01A PDS			Batch ID:	74547		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_160422C		Analysis Date:	4/22/2016 3:03:00 PM		Prep Date:	4/12/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	7.30	0.300	2.00	5.31	99.5	80	120			
Calcium	252	3.00	50.0	209	87.0	80	120			

Sample ID: 1604103-01A MS	Batch ID: 74547	TestNo: SW6020A	Units: mg/L							
SampType: MS	Run ID: ICP-MS4_160422C	Analysis Date: 4/22/2016 3:05:00 PM	Prep Date: 4/12/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	5.54	0.300	0.200	5.31	116	80	120			

Sample ID	1604103-01A MSD			Batch ID:	74547		TestNo:	SW6020A		Units:	mg/L	
SampType:	MSD			Run ID:	ICP-MS4_160422C		Analysis Date:	4/22/2016 3:07:00 PM		Prep Date:	4/12/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	5.64	0.300	0.200	5.31	166	80	120	1.80	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160422C

Sample ID	ICV-160422	Batch ID:	R85415	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160422C	Analysis Date:	4/22/2016 2:16:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0981	0.0300	0.100	0	98.1	90	110			
Calcium	2.33	0.300	2.50	0	93.3	90	110			

Sample ID	LCVL-160422	Batch ID:	R85415	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160422C	Analysis Date:	4/22/2016 2:23:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0163	0.0300	0.0200	0	81.7	70	130			
Calcium	0.0875	0.300	0.100	0	87.5	70	130			

Sample ID	CCV1-160422	Batch ID:	R85415	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160422C	Analysis Date:	4/22/2016 3:15:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.191	0.0300	0.200	0	95.6	90	110			
Calcium	4.80	0.300	5.00	0	96.0	90	110			

Sample ID	LCVL1-160422	Batch ID:	R85415	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160422C	Analysis Date:	4/22/2016 3:25:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0310	0.0300	0.0200	0	155	70	130			S
Calcium	0.0895	0.300	0.100	0	89.5	70	130			

Sample ID	CCV2-160422	Batch ID:	R85415	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160422C	Analysis Date:	4/22/2016 3:43:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.87	0.300	5.00	0	97.3	90	110			

Sample ID	LCVL2-160422	Batch ID:	R85415	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160422C	Analysis Date:	4/22/2016 3:47:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.0920	0.300	0.100	0	92.0	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160425D

Sample ID	ICV-160425	Batch ID:	R85420	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160425D	Analysis Date:	4/25/2016 10:36:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.104	0.0300	0.100	0	104	90	110			

Sample ID	LCVL-160425	Batch ID:	R85420	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160425D	Analysis Date:	4/25/2016 10:47:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0164	0.0300	0.0200	0	81.8	70	130			

Sample ID	CCV1-160425	Batch ID:	R85420	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160425D	Analysis Date:	4/25/2016 11:37:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.217	0.0300	0.200	0	109	90	110			

Sample ID	LCVL1-160425	Batch ID:	R85420	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160425D	Analysis Date:	4/25/2016 11:48:00 AM	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			

Sample ID	CCV2-160425		Batch ID:	R85420		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS4_160425D		Analysis Date:	4/25/2016 12:28:00 PM		Prep Date:		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Boron	0.200	0.0300	0.200	0	99.9	90	110				

Sample ID	LCVL2-160425	Batch ID:	R85420	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160425D	Analysis Date:	4/25/2016 12:34:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0166	0.0300	0.0200	0	83.0	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160425E

Sample ID	ICV-160425	Batch ID:	R85434	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_160425E	Analysis Date:	4/25/2016 10:36:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		2.37	0.300	2.50	0	94.9	90	110			

Sample ID	LCVL-160425	Batch ID:	R85434	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160425E	Analysis Date:	4/25/2016 10:47:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		0.0899	0.300	0.100	0	89.9	70	130			

Sample ID	CCV5-160425	Batch ID:	R85434	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160425E	Analysis Date:	4/25/2016 2:28:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		4.94	0.300	5.00	0	98.8	90	110			

Sample ID	LCVL5-160425	Batch ID:	R85434	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160425E	Analysis Date:	4/25/2016 2:32:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		0.0971	0.300	0.100	0	97.1	70	130			

Sample ID	CCV6-160425	Batch ID:	R85434	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160425E	Analysis Date:	4/25/2016 2:59:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		4.94	0.300	5.00	0	98.8	90	110			

Sample ID	LCVL6-160425	Batch ID:	R85434	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160425E	Analysis Date:	4/25/2016 3:13:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		0.0911	0.300	0.100	0	91.1	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_160419A

The QC data in batch 74666 applies to the following samples: 1604102-01D, 1604102-02D, 1604102-03D, 1604102-04D, 1604102-05D, 1604102-06D, 1604102-07D, 1604102-08D

Sample ID	MB-74666	Batch ID:	74666	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC2_160419A	Analysis Date:	4/19/2016 9:55:13 AM	Prep Date:	4/19/2016			
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	LCS-74666			Batch ID:	74666		TestNo:	E300		Units:	mg/L	
SampType:	LCS			Run ID:	IC2_160419A		Analysis Date:	4/19/2016 10:09:50 AM		Prep Date:	4/19/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	9.30	1.00	10.00	0	93.0	90	110			
Fluoride	3.70	0.400	4.000	0	92.4	90	110			
Sulfate	29.6	3.00	30.00	0	98.7	90	110			

Sample ID	LCSD-74666			Batch ID:	74666		TestNo:	E300		Units:	mg/L	
SampType:	LCSD			Run ID:	IC2_160419A		Analysis Date:	4/19/2016 10:24:26 AM		Prep Date:	4/19/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	9.29	1.00	10.00	0	92.9	90	110	0.159	20	
Fluoride	3.72	0.400	4.000	0	93.1	90	110	0.787	20	
Sulfate	29.6	3.00	30.00	0	98.7	90	110	0.053	20	

Sample ID	1604102-04DMS			Batch ID:	74666			TestNo:	E300			Units:	mg/L		
SampType:	MS			Run ID:	IC2_160419A			Analysis Date:	4/19/2016 4:12:09 PM			Prep Date:	4/19/2016		
Analyte	Result			RL	SPK value		Ref Val	%REC		LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	224	10.0	200.0	29.44	97.2	90	110			
Fluoride	197	4.00	200.0	0	98.3	90	110			
Sulfate	378	30.0	200.0	219.3	79.1	90	110			S

Sample ID	1604102-04DMSD			Batch ID:	74666			TestNo:	E300			Units:	mg/L		
SampType:	MSD			Run ID:	IC2_160419A			Analysis Date:	4/19/2016 4:26:45 PM			Prep Date:	4/19/2016		
Analyte	Result			RL	SPK value		Ref Val	%REC		LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	225	10.0	200.0	29.44	97.7	90	110	0.454	20	
Fluoride	197	4.00	200.0	0	98.7	90	110	0.483	20	
Sulfate	379	30.0	200.0	219.3	80.0	90	110	0.459	20	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_160419A

Sample ID	1604102-05DMS	Batch ID:	74666	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_160419A	Analysis Date:	4/19/2016 4:41:22 PM	Prep Date:	4/19/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2350	100	2000	373.4	98.8	90	110			
Fluoride	1970	40.0	2000	0	98.7	90	110			
Sulfate	2210	300	2000	454.0	87.7	90	110			S

Sample ID	1604102-05DMSD	Batch ID:	74666	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC2_160419A	Analysis Date:	4/19/2016 4:55:58 PM	Prep Date:	4/19/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2350	100	2000	373.4	98.8	90	110	0.060	20	
Fluoride	1970	40.0	2000	0	98.7	90	110	0.003	20	
Sulfate	2220	300	2000	454.0	88.1	90	110	0.400	20	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_160419A

Sample ID	ICV-160419	Batch ID:	R85331	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_160419A	Analysis Date:	4/19/2016 9:14:43 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	23.4	1.00	25.00	0	93.5	90	110			
Fluoride	9.35	0.400	10.00	0	93.5	90	110			
Sulfate	73.8	3.00	75.00	0	98.4	90	110			

Sample ID	CCV1-160419	Batch ID:	R85331	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_160419A	Analysis Date:	4/19/2016 1:34:20 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.28	1.00	10.00	0	92.8	90	110			
Fluoride	3.82	0.400	4.000	0	95.4	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

Sample ID	CCV2-160419	Batch ID:	R85331	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_160419A	Analysis Date:	4/19/2016 5:10:35 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.30	1.00	10.00	0	93.0	90	110			
Fluoride	3.88	0.400	4.000	0	97.1	90	110			
Sulfate	29.6	3.00	30.00	0	98.8	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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160413A

The QC data in batch 74564 applies to the following samples: 1604102-01D, 1604102-02D, 1604102-03D, 1604102-04D, 1604102-05D, 1604102-06D, 1604102-07D, 1604102-08D

Sample ID	1604102-01D-DUP	Batch ID:	74564	TestNo:	M4500-H+ B	Units:	pH Units@19°C
SampType:	DUP	Run ID:	TITRATOR_160413A	Analysis Date:	4/13/2016 9:34:00 AM	Prep Date:	4/13/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		6.51	0	0	6.560		0.765 5

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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160413A

Sample ID	ICV-160413	Batch ID:	R85205	TestNo:	M4500-H+ B	Units:	pH Units@21.9°C			
SampType:	ICV	Run ID:	TITRATOR_160413A	Analysis Date:	4/13/2016 8:46:00 AM	Prep Date:	4/13/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	10.0	0	10.00	0	100	99	101			

Sample ID	CCV-160413	Batch ID:	R85205	TestNo:	M4500-H+ B	Units:	pH Units@21.7°C			
SampType:	CCV	Run ID:	TITRATOR_160413A	Analysis Date:	4/13/2016 9:53:00 AM	Prep Date:	4/13/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.03	0	7.000	0	100	97.1	102.9			

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: 1604102
Project: Luminant-Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: WC_160412B

The QC data in batch 74560 applies to the following samples: 1604102-01D, 1604102-02D, 1604102-03D, 1604102-04D, 1604102-05D, 1604102-06D, 1604102-07D, 1604102-08D

Sample ID	MB-74560	Batch ID:	74560	TestNo:	M2540C	Units:	mg/L
SampType:	MBLK	Run ID:	WC_160412B	Analysis Date:	4/13/2016 8:45:00 AM	Prep Date:	4/12/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-74560	Batch ID:	74560	TestNo:	M2540C	Units:	mg/L
SampType:	LCS	Run ID:	WC_160412B	Analysis Date:	4/13/2016 8:45:00 AM	Prep Date:	4/12/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 758 10.0 745.6 0 102 90 113

Sample ID	1604108-01C-DUP	Batch ID:	74560	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_160412B	Analysis Date:	4/13/2016 8:45:00 AM	Prep Date:	4/12/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 1200 10.0 0 1149 3.92 5

Sample ID	1604108-06C-DUP	Batch ID:	74560	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_160412B	Analysis Date:	4/13/2016 8:45:00 AM	Prep Date:	4/12/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 680 10.0 0 684.0 0.587 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: 20160352

This report contains the analytical results for the 8 sample(s) received under chain of custody by ESC Lab Sciences on 04/13/16 13:53:12. These samples are associated with your 1604102 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



Client : DHL Analytical, Inc.
 Client Project : 1604102
 Lab Number : 20160352
 Date Reported : 05/19/16
 Date Received : 04/13/16
 Page Number : 2 of 4

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160352-01
Client ID : BMW-24
Date Sampled : 04/07/16 07:50:00
Matrix : NPW

Radiochemical Analyses

Combined Radium	0.242 +/- 1.05	1.92	pCi/l				
Radium-226 SM 7500 Ra B M*	0.243 +/- 0.251	0.349	pCi/l		04/20/16	04/22/16	AK
Radium-228 EPA 904*/9320*	-0.065 +/- 0.799	1.58	pCi/l		05/03/16	05/11/16	JR

Lab ID : 20160352-02
Client ID : BMW-23
Date Sampled : 04/07/16 08:40:00
Matrix : NPW

Radiochemical Analyses

Combined Radium	2.70 +/- 1.14	1.36	pCi/l				
Radium-226 SM 7500 Ra B M*	0.723 +/- 0.355	0.310	pCi/l		04/20/16	04/22/16	AK
Radium-228 EPA 904*/9320*	1.98 +/- 0.784	1.05	pCi/l		05/03/16	05/11/16	JR

Lab ID : 20160352-03
Client ID : BMW-22
Date Sampled : 04/07/16 09:25:00
Matrix : NPW

Radiochemical Analyses

Combined Radium	1.94 +/- 0.95	1.19	pCi/l				
Radium-226 SM 7500 Ra B M*	0.480 +/- 0.229	0.247	pCi/l		04/20/16	04/22/16	AK
Radium-228 EPA 904*/9320*	1.46 +/- 0.72	0.947	pCi/l		05/03/16	05/17/16	JR

Lab ID : 20160352-04
Client ID : BMW-20
Date Sampled : 04/07/16 10:15:00
Matrix : NPW

Radiochemical Analyses

Combined Radium	1.30 +/- 1.16	1.92	pCi/l				
Radium-226 SM 7500 Ra B M*	0.221 +/- 0.161	0.212	pCi/l		04/20/16	04/22/16	AK
Radium-228 EPA 904*/9320*	1.08 +/- 0.997	1.71	pCi/l		05/03/16	05/11/16	JR



Client : DHL Analytical, Inc.
 Client Project : 1604102
 Lab Number : 20160352
 Date Reported : 05/19/16
 Date Received : 04/13/16
 Page Number : 3 of 4

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160352-05
Client ID : BMW-21
Date Sampled : 04/07/16 11:15:00
Matrix : NPW

Radiochemical Analyses

Combined Radium	1.44 +/- 2.15	3.06	pCi/l				
Radium-226 SM 7500 Ra B M*	0.470 +/- 0.234	0.283	pCi/l		04/20/16	04/22/16	AK
Radium-228 EPA 904*/9320*	0.967 +/- 1.92	2.78	pCi/l		05/03/16	05/17/16	JR

Lab ID : 20160352-06
Client ID : BMW-11AR
Date Sampled : 04/07/16 12:15:00
Matrix : NPW

Radiochemical Analyses

Combined Radium	2.37 +/- 0.880	0.932	pCi/l				
Radium-226 SM 7500 Ra B M*	0.885 +/- 0.245	0.143	pCi/l		04/20/16	04/22/16	AK
Radium-228 EPA 904*/9320*	1.48 +/- 0.635	0.789	pCi/l		05/03/16	05/11/16	JR

Lab ID : 20160352-07
Client ID : BMW-19
Date Sampled : 04/07/16 13:05:00
Matrix : NPW

Radiochemical Analyses

Combined Radium	0.403 +/- 0.667	0.900	pCi/l				
Radium-226 SM 7500 Ra B M*	0.061 +/- 0.116	0.185	pCi/l		04/20/16	04/22/16	AK
Radium-228 EPA 904*/9320*	0.342 +/- 0.551	0.715	pCi/l		05/03/16	05/11/16	JR

Lab ID : 20160352-08
Client ID : BMW-18
Date Sampled : 04/07/16 01:50:00
Matrix : NPW

Radiochemical Analyses

Combined Radium	0.873 +/- 0.861	1.11	pCi/l				
Radium-226 SM 7500 Ra B M*	0.088 +/- 0.082	0.109	pCi/l		04/20/16	04/22/16	AK
Radium-228 EPA 904*/9320*	0.785 +/- 0.779	1.00	pCi/l		05/03/16	05/11/16	JR



Client : DHL Analytical, Inc.
Client Project : 1604102
Lab Number : 20160352
Date Reported : 05/19/16
Date Received : 04/13/16
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	Date
Radium-226	0.00	108.0			NC	0.621	84.0	85.5	1.8	04/22/16
Radium-228	-0.090	115.0			NC	0.006	103.0	118.0	13.5	05/11/16

Lab Approval: _____

DHL Analytical, Inc.

2300 Double Creek Drive
Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1604102

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory
311 North Aspen
Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515
FAX:
Acct #: DHLRRTX

11-Apr-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	BM7500Ra-B M				
BMW-24	Aqueous	-01B	04/07/16 07:50 AM	500HDPEHNO3	1					
BMW-24	Aqueous	-01C	04/07/16 07:50 AM	500HDPEHNO3		1				
BMW-23	Aqueous	-02B	04/07/16 08:40 AM	500HDPEHNO3	1					
BMW-23	Aqueous	-02C	04/07/16 08:40 AM	500HDPEHNO3		1				
BMW-22	Aqueous	-03B	04/07/16 09:25 AM	500HDPEHNO3	1					
BMW-22	Aqueous	-03C	04/07/16 09:25 AM	500HDPEHNO3		1				
BMW-20	Aqueous	-04B	04/07/16 10:15 AM	500HDPEHNO3	1					
BMW-20	Aqueous	-04C	04/07/16 10:15 AM	500HDPEHNO3		1				
BMW-21	Aqueous	-05B	04/07/16 11:15 AM	500HDPEHNO3	1					
BMW-21	Aqueous	-05C	04/07/16 11:15 AM	500HDPEHNO3		1				
BMW-11AR	Aqueous	-06B	04/07/16 12:15 PM	500HDPEHNO3	1					
BMW-11AR	Aqueous	-06C	04/07/16 12:15 PM	500HDPEHNO3		1				
BMW-19	Aqueous	-07B	04/07/16 01:05 PM	500HDPEHNO3	1					
BMW-19	Aqueous	-07C	04/07/16 01:05 PM	500HDPEHNO3		1				
BMW-18	Aqueous	-08B	04/07/16 01:50 PM	500HDPEHNO3	1					
BMW-18	Aqueous	-08C	04/07/16 01:50 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

6829716

Relinquished by: <u>[Signature]</u>	Date/Time: <u>4/11/16 17:30</u>	Received by: <u>[Signature]</u>	Date/Time: <u>4/11/16 17:30</u>
Relinquished by: _____	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>4/12/16 13:42</u>

SAMPLE LOGIN

Date Received: 04/13/16 13:53:12

Lab Number: 20160352

Due: 05/11/16

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160352-01 B	BMW-24	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160352-01 A	BMW-24	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160352-02 A	BMW-23	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160352-02 B	BMW-23	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160352-03 A	BMW-22	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160352-03 B	BMW-22	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160352-04 B	BMW-20	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160352-04 A	BMW-20	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160352-05 B	BMW-21	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160352-05 A	BMW-21	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160352-06 A	BMW-11AR	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160352-06 B	BMW-11AR	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160352-07 A	BMW-19	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160352-07 B	BMW-19	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160352-08 B	BMW-18	NPW	04/07/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes

20160352-08 A
Radium-226
Radium-228

BMW-18

NPW

04/07/16
SM 7500 Ra B M*
EPA 904*/9320*

Plastic

500 ml

HNO₃, pH < 2



Yes

Yes

CONTAINER INSPECTION

Coolers 1

Custody Seals Broken NO

Temperature: C NA Ice

Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken NO

Chain of Custody Record ☒

Labels in Tact ☒

Radiation Survey Complete ☐

Anomalies

Inspected By: [Signature]

DATE 4/13/16

QA or Designee Review: Raymond Thomas

DATE 04/13/18

Sample Custodian Review: _____

DATE _____

Project Notes:

LUMINANT



July 25, 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 - MLSES

Order No.: 1606122

Dear Will Vienne:

DHL Analytical, Inc. received 8 sample(s) on 6/11/2016 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 blue ink, appearing to read "John DuPont for".

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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Subcontract Report 1606122	44

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: 6-10-16 PAGE 1 OF 1
PO #: 5164-B DHL WORK ORDER #: 10006122
PROJECT LOCATION OR NAME: LUMINANT- MLSES
CLIENT PROJECT #: 5164-B COLLECTOR: J. BRAYTON

Authorize 5% surcharge for TRRP Report?

☐ Yes ☐ No

S=SOIL
W=WATER
A=AIR
L=LIQUID
SE=SEDIMENT

P=PAINT
SL=SLUDGE
O=OTHER
SO=SOLID

PRESERVATION

of Containers

5

NO₂50. $\square$ NaOH

44

UNPRESERVED

15

ANALYSES
TEX Q MTR
PH 10

ANALYSES
 BTX ☐ M18E ☐ (METHOD 8021)
 TPH 1005 ☐ TPH 1006 ☐ DRO (METHOD 8105) ☐
 VOC 8260 ☐ VOC 624 ☐ VOC 8260/5035 ☐
 SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ SVOC 625 ☐
 8270 PEST ☐ 625 PEST ☐ HOLD PCB ☐ 608 PCB ☐
 8270 O-P PEST ☐ 8082 PCB ☐ 8270 PCB ☐
 8321 HERB ☐ 1 PHOS, AMMONIA ☐
 METALS 6020 ☐ METALS 2008 ☐ DISS. METALS ☐
 PH ☐ TX11 ☐
 CHLORIDE ☐ ALKALINITY ☐ COD ☐
 TELP SVOC ☐ VOC ☐ PEST ☐ HERB ☐
 TCLP METALS ☐ RCRA 8 ☐ TX11 ☐ Pb ☐
 RCI ☐ FLASHPOINT ☐ DGAS ☐
 TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐
SEE ATTACHED

FIELD NOTES

Bmw-24	01	6-8-16	155	W	P	4	X
Bmw-23	02		1605	W	P	4	X
Bm W-22	03	↓	1700	W	P	4	X
Bmw-20	04	6-9-16	0815	W	P	4	X
Bmw-21	05		0905	W	P	4	X
Bmw-11AR	06		1005	W	P	4	X
Bmw-19	07		1100	W	P	4	X
Bmw-18	08	↓	1215	W	P	4	X

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
<i>[Signature]</i>	6-10-11 1730	<i>[Signature]</i>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
<i>[Signature]</i>	6-10-11 1245	<i>[Signature]</i>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

TURN AROUND TIME
 RUSH ☐ CALL FIRST
 1 DAY ☐ CALL FIRST
 2 DAY ☐
 NORMAL ☒
 OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 44, 4.2, 4.2 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☐ INTACT ☒ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

☐ DHL DISPOSAL @ \$5.00 each ☐ Return

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

PBW
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 10JUN16
ACTWGT: 59.50 LB
CAD: 6995323/SSFO1704
DIMS: 25x15x14 IN

BILL THIRD PARTY

TO

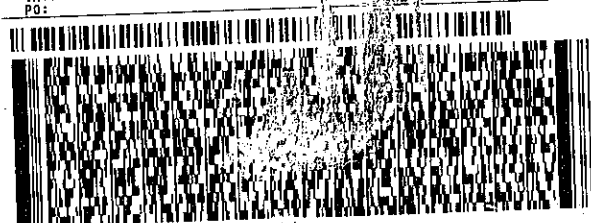
DHL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222

INU:
PO:

REF:



FedEx
Express



AN L0502091019LJ

2 of 3

MPS# 7833 3223 9027
0263

Mstr# 7833 3223 9016

0201

XO BSMA

**SATURDAY 12:00P
PRIORITY OVERNIGHT**

78664
TX-US AUS



ORIGIN ID:FWHA (512) 671-3434

PBW
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 10JUN16
ACTWGT: 59.50 LB
CAD: 6995323/SSFO1704
DIMS: 25x15x14 IN

BILL THIRD PARTY

TO

DHL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222

INU:
PO:

REF:

DEPT:



FedEx
Express



AN L0502091019LJ

1 of 3

TRK# 7833 3223 9016
0201

MASTER

XO BSMA

**SATURDAY 12:00P
PRIORITY OVERNIGHT**

78664
TX-US AUS



ORIGIN ID:FWHA (512) 671-3434

CREEK DR STE 4004

78664

SHIP DATE: 10JUN16
ACTWGT: 28.70 LB
CAD: 6995323/SSF01704
DIMS: 19x11x13 IN

BILL THIRD PARTY

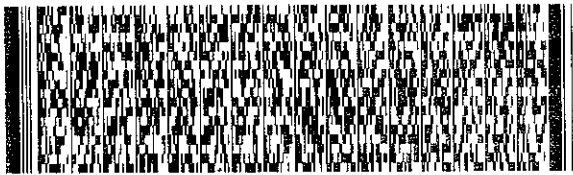
HL
200 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222

REF:

DEPT:



FedEx
Express



3 of 3

MPS# 7833 3223 9038

7833 3223 9016

0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

0 BSMA

78664
TX-US AUS



Sample Receipt Checklist

Client Name **Pastor, Behling & Wheeler**

Date Received: **6/11/2016**

Work Order Number **1606122**

Received by **JB**

Checklist completed by:  **6/13/2016**
Signature Date

Reviewed by:  **6/13/2016**
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 ☐	4.4 °C, 4.2, 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? <u>NO</u>	Checked by _____	
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 - MLSES
Lab Order: 1606122

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 6/11/16. A total of 8 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 6/17/16 and 6/23/16 the matrix spike and matrix spike duplicate recoveries were out of control limits for four analytes. 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 6/17/16 the PDS recovery was below control limits for Molybdenum. This is flagged accordingly. The serial dilution was within control limits for this analyte. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Lab Order: 1606122**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1606122-01	BMW-24		06/08/16 03:15 PM	6/11/2016
1606122-02	BMW-23		06/08/16 04:05 PM	6/11/2016
1606122-03	BMW-22		06/08/16 05:00 PM	6/11/2016
1606122-04	BMW-20		06/09/16 08:15 AM	6/11/2016
1606122-05	BMW-21		06/09/16 09:05 AM	6/11/2016
1606122-06	BMW-11AR		06/09/16 10:05 AM	6/11/2016
1606122-07	BMW-19		06/09/16 11:00 AM	6/11/2016
1606122-08	BMW-18		06/09/16 12:15 PM	6/11/2016

Lab Order: 1606122
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1606122-01A	BMW-24	06/08/16 03:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-24	06/08/16 03:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-24	06/08/16 03:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/17/16 11:52 AM	75718
1606122-01D	BMW-24	06/08/16 03:15 PM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-24	06/08/16 03:15 PM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-24	06/08/16 03:15 PM	Aqueous	M4500-H+ B	pH Preparation	06/14/16 08:22 AM	75614
	BMW-24	06/08/16 03:15 PM	Aqueous	M2540C	TDS Preparation	06/14/16 02:06 PM	75640
1606122-02A	BMW-23	06/08/16 04:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-23	06/08/16 04:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-23	06/08/16 04:05 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/17/16 11:52 AM	75718
1606122-02D	BMW-23	06/08/16 04:05 PM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-23	06/08/16 04:05 PM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-23	06/08/16 04:05 PM	Aqueous	M4500-H+ B	pH Preparation	06/14/16 08:22 AM	75614
	BMW-23	06/08/16 04:05 PM	Aqueous	M2540C	TDS Preparation	06/14/16 02:06 PM	75640
1606122-03A	BMW-22	06/08/16 05:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-22	06/08/16 05:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-22	06/08/16 05:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/17/16 11:52 AM	75718
1606122-03D	BMW-22	06/08/16 05:00 PM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-22	06/08/16 05:00 PM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-22	06/08/16 05:00 PM	Aqueous	M4500-H+ B	pH Preparation	06/14/16 08:22 AM	75614
	BMW-22	06/08/16 05:00 PM	Aqueous	M2540C	TDS Preparation	06/14/16 02:06 PM	75640
1606122-04A	BMW-20	06/09/16 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-20	06/09/16 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-20	06/09/16 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-20	06/09/16 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-20	06/09/16 08:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/17/16 11:52 AM	75718
1606122-04D	BMW-20	06/09/16 08:15 AM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-20	06/09/16 08:15 AM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689

Lab Order: 1606122
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1606122-04D	BMW-20	06/09/16 08:15 AM	Aqueous	M4500-H+ B	pH Preparation	06/14/16 08:22 AM	75614
	BMW-20	06/09/16 08:15 AM	Aqueous	M2540C	TDS Preparation	06/14/16 02:06 PM	75640
1606122-05A	BMW-21	06/09/16 09:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-21	06/09/16 09:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-21	06/09/16 09:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-21	06/09/16 09:05 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/17/16 11:52 AM	75718
1606122-05D	BMW-21	06/09/16 09:05 AM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-21	06/09/16 09:05 AM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-21	06/09/16 09:05 AM	Aqueous	M4500-H+ B	pH Preparation	06/14/16 08:22 AM	75614
	BMW-21	06/09/16 09:05 AM	Aqueous	M2540C	TDS Preparation	06/14/16 02:06 PM	75640
1606122-06A	BMW-11AR	06/09/16 10:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-11AR	06/09/16 10:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-11AR	06/09/16 10:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-11AR	06/09/16 10:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-11AR	06/09/16 10:05 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/17/16 11:52 AM	75718
1606122-06D	BMW-11AR	06/09/16 10:05 AM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-11AR	06/09/16 10:05 AM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-11AR	06/09/16 10:05 AM	Aqueous	M4500-H+ B	pH Preparation	06/14/16 08:22 AM	75614
	BMW-11AR	06/09/16 10:05 AM	Aqueous	M2540C	TDS Preparation	06/14/16 02:06 PM	75640
1606122-07A	BMW-19	06/09/16 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-19	06/09/16 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-19	06/09/16 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-19	06/09/16 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-19	06/09/16 11:00 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/17/16 11:52 AM	75718
1606122-07D	BMW-19	06/09/16 11:00 AM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-19	06/09/16 11:00 AM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-19	06/09/16 11:00 AM	Aqueous	M4500-H+ B	pH Preparation	06/14/16 08:22 AM	75614
	BMW-19	06/09/16 11:00 AM	Aqueous	M2540C	TDS Preparation	06/14/16 02:06 PM	75640

Lab Order: 1606122
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1606122-08A	BMW-18	06/09/16 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-18	06/09/16 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/16/16 11:00 AM	75691
	BMW-18	06/09/16 12:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/17/16 11:52 AM	75718
1606122-08D	BMW-18	06/09/16 12:15 PM	Aqueous	E300	Anion Preparation	06/16/16 10:03 AM	75689
	BMW-18	06/09/16 12:15 PM	Aqueous	M4500-H+ B	pH Preparation	06/14/16 08:22 AM	75614
	BMW-18	06/09/16 12:15 PM	Aqueous	M2540C	TDS Preparation	06/14/16 02:06 PM	75640

Lab Order: 1606122
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1606122-01A	BMW-24	Aqueous	SW7470A	Mercury Total: Aqueous	75718	1	06/17/16 03:25 PM	CETAC2_HG_160617A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/17/16 01:25 PM	ICP-MS4_160617B
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	10	06/23/16 12:35 PM	ICP-MS4_160623A
1606122-01D	BMW-24	Aqueous	E300	Anions by IC method - Water	75689	1	06/16/16 11:49 AM	IC4_160616A
	BMW-24	Aqueous	E300	Anions by IC method - Water	75689	10	06/16/16 03:35 PM	IC4_160616A
	BMW-24	Aqueous	M4500-H+ B	pH	75614	1	06/14/16 09:46 AM	TITRATOR_160614A
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	75640	1	06/15/16 08:55 AM	WC_160614C
1606122-02A	BMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	75718	1	06/17/16 03:27 PM	CETAC2_HG_160617A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/17/16 01:27 PM	ICP-MS4_160617B
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	10	06/23/16 12:37 PM	ICP-MS4_160623A
1606122-02D	BMW-23	Aqueous	E300	Anions by IC method - Water	75689	1	06/16/16 12:04 PM	IC4_160616A
	BMW-23	Aqueous	E300	Anions by IC method - Water	75689	10	06/16/16 03:50 PM	IC4_160616A
	BMW-23	Aqueous	M4500-H+ B	pH	75614	1	06/14/16 09:49 AM	TITRATOR_160614A
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	75640	1	06/15/16 08:55 AM	WC_160614C
1606122-03A	BMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	75718	1	06/17/16 03:30 PM	CETAC2_HG_160617A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/17/16 01:29 PM	ICP-MS4_160617B
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	10	06/23/16 12:39 PM	ICP-MS4_160623A
1606122-03D	BMW-22	Aqueous	E300	Anions by IC method - Water	75689	1	06/16/16 12:19 PM	IC4_160616A
	BMW-22	Aqueous	E300	Anions by IC method - Water	75689	10	06/16/16 04:05 PM	IC4_160616A
	BMW-22	Aqueous	M4500-H+ B	pH	75614	1	06/14/16 09:53 AM	TITRATOR_160614A
	BMW-22	Aqueous	M2540C	Total Dissolved Solids	75640	1	06/15/16 08:55 AM	WC_160614C
1606122-04A	BMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	75718	1	06/17/16 03:32 PM	CETAC2_HG_160617A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/17/16 01:45 PM	ICP-MS4_160617B
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/27/16 02:13 PM	ICP-MS4_160627A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	10	06/23/16 12:41 PM	ICP-MS4_160623A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/23/16 02:28 PM	ICP-MS4_160623A

Lab Order: 1606122
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1606122-04D	BMW-20	Aqueous	E300	Anions by IC method - Water	75689	1	06/16/16 12:34 PM	IC4_160616A
	BMW-20	Aqueous	E300	Anions by IC method - Water	75689	10	06/16/16 04:20 PM	IC4_160616A
	BMW-20	Aqueous	M4500-H+ B	pH	75614	1	06/14/16 09:55 AM	TITRATOR_160614A
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	75640	1	06/15/16 08:55 AM	WC_160614C
1606122-05A	BMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	75718	1	06/17/16 03:34 PM	CETAC2_HG_160617A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	10	06/23/16 12:43 PM	ICP-MS4_160623A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/23/16 02:34 PM	ICP-MS4_160623A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/17/16 01:47 PM	ICP-MS4_160617B
1606122-05D	BMW-21	Aqueous	E300	Anions by IC method - Water	75689	1	06/16/16 12:49 PM	IC4_160616A
	BMW-21	Aqueous	E300	Anions by IC method - Water	75689	10	06/16/16 05:05 PM	IC4_160616A
	BMW-21	Aqueous	M4500-H+ B	pH	75614	1	06/14/16 09:58 AM	TITRATOR_160614A
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	75640	1	06/15/16 08:55 AM	WC_160614C
1606122-06A	BMW-11AR	Aqueous	SW7470A	Mercury Total: Aqueous	75718	1	06/17/16 03:36 PM	CETAC2_HG_160617A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/17/16 01:49 PM	ICP-MS4_160617B
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	10	06/23/16 12:45 PM	ICP-MS4_160623A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/23/16 02:30 PM	ICP-MS4_160623A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/27/16 02:48 PM	ICP-MS4_160627A
1606122-06D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	75689	1	06/16/16 01:04 PM	IC4_160616A
	BMW-11AR	Aqueous	E300	Anions by IC method - Water	75689	10	06/16/16 05:20 PM	IC4_160616A
	BMW-11AR	Aqueous	M4500-H+ B	pH	75614	1	06/14/16 10:01 AM	TITRATOR_160614A
	BMW-11AR	Aqueous	M2540C	Total Dissolved Solids	75640	1	06/15/16 08:55 AM	WC_160614C
1606122-07A	BMW-19	Aqueous	SW7470A	Mercury Total: Aqueous	75718	1	06/17/16 03:39 PM	CETAC2_HG_160617A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/17/16 01:51 PM	ICP-MS4_160617B
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	10	06/23/16 12:47 PM	ICP-MS4_160623A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/23/16 02:32 PM	ICP-MS4_160623A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/27/16 02:50 PM	ICP-MS4_160627A

Lab Order: 1606122
Client: Pastor, Behling & Wheeler
Project: Luminant - MLSES

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1606122-07D	BMW-19	Aqueous	E300	Anions by IC method - Water	75689	100	06/16/16 05:35 PM	IC4_160616A
	BMW-19	Aqueous	E300	Anions by IC method - Water	75689	1	06/16/16 01:19 PM	IC4_160616A
	BMW-19	Aqueous	M4500-H+ B	pH	75614	1	06/14/16 10:03 AM	TITRATOR_160614A
	BMW-19	Aqueous	M2540C	Total Dissolved Solids	75640	1	06/15/16 08:55 AM	WC_160614C
1606122-08A	BMW-18	Aqueous	SW7470A	Mercury Total: Aqueous	75718	1	06/17/16 03:41 PM	CETAC2_HG_160617A
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/17/16 01:53 PM	ICP-MS4_160617B
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	75691	1	06/23/16 12:49 PM	ICP-MS4_160623A
1606122-08D	BMW-18	Aqueous	E300	Anions by IC method - Water	75689	1	06/16/16 01:34 PM	IC4_160616A
	BMW-18	Aqueous	M4500-H+ B	pH	75614	1	06/14/16 10:05 AM	TITRATOR_160614A
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	75640	1	06/15/16 08:55 AM	WC_160614C

DHL Analytical, Inc.

Date: 25-Jul-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1606122

Client Sample ID: BMW-24
Lab ID: 1606122-01
Collection Date: 06/08/16 03:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/17/16 03:25 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/17/16 01:25 PM
Arsenic	0.00481	0.00200	0.00500	J	mg/L	1	06/17/16 01:25 PM
Barium	0.181	0.00300	0.0100		mg/L	1	06/17/16 01:25 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:25 PM
Boron	0.612	0.100	0.300		mg/L	10	06/23/16 12:35 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:25 PM
Calcium	60.1	1.00	3.00		mg/L	10	06/23/16 12:35 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:25 PM
Cobalt	0.0227	0.00300	0.00500		mg/L	1	06/17/16 01:25 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:25 PM
Lithium	0.0475	0.00500	0.0100		mg/L	1	06/17/16 01:25 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:25 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:25 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/17/16 01:25 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	201	3.00	10.0		mg/L	10	06/16/16 03:35 PM
Fluoride	0.147	0.100	0.400	J	mg/L	1	06/16/16 11:49 AM
Sulfate	259	10.0	30.0		mg/L	10	06/16/16 03:35 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	6.19	0	0		pH Units@17.8°C	1	06/14/16 09:46 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	984	10.0	10.0		mg/L	1	06/15/16 08:55 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: 25-Jul-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1606122

Client Sample ID: BMW-23
Lab ID: 1606122-02
Collection Date: 06/08/16 04:05 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/17/16 03:27 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/17/16 01:27 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:27 PM
Barium	0.0497	0.00300	0.0100		mg/L	1	06/17/16 01:27 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:27 PM
Boron	1.31	0.100	0.300		mg/L	10	06/23/16 12:37 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:27 PM
Calcium	102	1.00	3.00		mg/L	10	06/23/16 12:37 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:27 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/17/16 01:27 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:27 PM
Lithium	0.103	0.00500	0.0100		mg/L	1	06/17/16 01:27 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:27 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:27 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/17/16 01:27 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	254	3.00	10.0		mg/L	10	06/16/16 03:50 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/16/16 12:04 PM
Sulfate	558	10.0	30.0		mg/L	10	06/16/16 03:50 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.73	0	0		pH Units@18.7°C	1	06/14/16 09:49 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1720	50.0	50.0		mg/L	1	06/15/16 08:55 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: 25-Jul-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1606122

Client Sample ID: BMW-22
Lab ID: 1606122-03
Collection Date: 06/08/16 05:00 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/17/16 03:30 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/17/16 01:29 PM
Arsenic	0.00206	0.00200	0.00500	J	mg/L	1	06/17/16 01:29 PM
Barium	0.0667	0.00300	0.0100		mg/L	1	06/17/16 01:29 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:29 PM
Boron	3.53	0.100	0.300		mg/L	10	06/23/16 12:39 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:29 PM
Calcium	193	1.00	3.00		mg/L	10	06/23/16 12:39 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:29 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/17/16 01:29 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:29 PM
Lithium	0.0847	0.00500	0.0100		mg/L	1	06/17/16 01:29 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:29 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:29 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/17/16 01:29 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	279	3.00	10.0		mg/L	10	06/16/16 04:05 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/16/16 12:19 PM
Sulfate	890	10.0	30.0		mg/L	10	06/16/16 04:05 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	6.77	0	0		pH Units@18.6°C	1	06/14/16 09:53 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2340	50.0	50.0		mg/L	1	06/15/16 08:55 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: 25-Jul-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1606122

Client Sample ID: BMW-20
Lab ID: 1606122-04
Collection Date: 06/09/16 08:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/17/16 03:32 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/17/16 01:45 PM
Arsenic	0.0103	0.00200	0.00500		mg/L	1	06/17/16 01:45 PM
Barium	0.0776	0.00300	0.0100		mg/L	1	06/17/16 01:45 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:45 PM
Boron	0.129	0.0100	0.0300		mg/L	1	06/27/16 02:13 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:45 PM
Calcium	128	1.00	3.00		mg/L	10	06/23/16 12:41 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:45 PM
Cobalt	0.0540	0.00300	0.00500		mg/L	1	06/17/16 01:45 PM
Lead	0.000696	0.000300	0.00100	J	mg/L	1	06/17/16 01:45 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	06/23/16 02:28 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:45 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:45 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/17/16 01:45 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	37.5	0.300	1.00		mg/L	1	06/16/16 12:34 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/16/16 12:34 PM
Sulfate	557	10.0	30.0		mg/L	10	06/16/16 04:20 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	6.34	0	0		pH Units@18.5°C	1	06/14/16 09:55 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1220	10.0	10.0		mg/L	1	06/15/16 08:55 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: 25-Jul-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1606122

Client Sample ID: BMW-21
Lab ID: 1606122-05
Collection Date: 06/09/16 09:05 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/17/16 03:34 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/17/16 01:47 PM
Arsenic	0.00340	0.00200	0.00500	J	mg/L	1	06/17/16 01:47 PM
Barium	0.0457	0.00300	0.0100		mg/L	1	06/17/16 01:47 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:47 PM
Boron	1.17	0.100	0.300		mg/L	10	06/23/16 12:43 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:47 PM
Calcium	155	1.00	3.00		mg/L	10	06/23/16 12:43 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:47 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/17/16 01:47 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:47 PM
Lithium	0.0675	0.00500	0.0100		mg/L	1	06/23/16 02:34 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:47 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:47 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/17/16 01:47 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	415	3.00	10.0		mg/L	10	06/16/16 05:05 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/16/16 12:49 PM
Sulfate	477	10.0	30.0		mg/L	10	06/16/16 05:05 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	7.20	0	0		pH Units@18.7°C	1	06/14/16 09:58 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2230	50.0	50.0		mg/L	1	06/15/16 08:55 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: 25-Jul-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1606122

Client Sample ID: BMW-11AR
Lab ID: 1606122-06
Collection Date: 06/09/16 10:05 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/17/16 03:36 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/17/16 01:49 PM
Arsenic	0.00532	0.00200	0.00500		mg/L	1	06/17/16 01:49 PM
Barium	0.0891	0.00300	0.0100		mg/L	1	06/17/16 01:49 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:49 PM
Boron	0.417	0.0100	0.0300		mg/L	1	06/27/16 02:48 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:49 PM
Calcium	182	1.00	3.00		mg/L	10	06/23/16 12:45 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:49 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/17/16 01:49 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:49 PM
Lithium	0.0187	0.00500	0.0100		mg/L	1	06/23/16 02:30 PM
Molybdenum	0.00355	0.00200	0.00500	J	mg/L	1	06/17/16 01:49 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:49 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/17/16 01:49 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	19.8	0.300	1.00		mg/L	1	06/16/16 01:04 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/16/16 01:04 PM
Sulfate	603	10.0	30.0		mg/L	10	06/16/16 05:20 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.15	0	0		pH Units@19°C	1	06/14/16 10:01 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1700	50.0	50.0		mg/L	1	06/15/16 08:55 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: 25-Jul-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1606122

Client Sample ID: BMW-19
Lab ID: 1606122-07
Collection Date: 06/09/16 11:00 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/17/16 03:39 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/17/16 01:51 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:51 PM
Barium	0.0158	0.00300	0.0100		mg/L	1	06/17/16 01:51 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:51 PM
Boron	0.444	0.0100	0.0300		mg/L	1	06/27/16 02:50 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:51 PM
Calcium	489	1.00	3.00		mg/L	10	06/23/16 12:47 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:51 PM
Cobalt	0.0141	0.00300	0.00500		mg/L	1	06/17/16 01:51 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:51 PM
Lithium	0.0644	0.00500	0.0100		mg/L	1	06/23/16 02:32 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:51 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:51 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/17/16 01:51 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	8.04	0.300	1.00		mg/L	1	06/16/16 01:19 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/16/16 01:19 PM
Sulfate	2390	100	300		mg/L	100	06/16/16 05:35 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.87	0	0		pH Units@18.8°C	1	06/14/16 10:03 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	4180	50.0	50.0		mg/L	1	06/15/16 08:55 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: 25-Jul-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - MLSES
Project No: 5164-B
Lab Order: 1606122

Client Sample ID: BMW-18
Lab ID: 1606122-08
Collection Date: 06/09/16 12:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: KL			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/17/16 03:41 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/17/16 01:53 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:53 PM
Barium	0.0283	0.00300	0.0100		mg/L	1	06/17/16 01:53 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:53 PM
Boron	0.429	0.0100	0.0300		mg/L	1	06/23/16 12:49 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:53 PM
Calcium	7.32	0.100	0.300		mg/L	1	06/17/16 01:53 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:53 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/17/16 01:53 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/17/16 01:53 PM
Lithium	0.0152	0.00500	0.0100		mg/L	1	06/23/16 12:49 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:53 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/17/16 01:53 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/17/16 01:53 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	18.7	0.300	1.00		mg/L	1	06/16/16 01:34 PM
Fluoride	0.128	0.100	0.400	J	mg/L	1	06/16/16 01:34 PM
Sulfate	101	1.00	3.00		mg/L	1	06/16/16 01:34 PM
PH		M4500-H+ B		Analyst: BJT			
pH	8.54	0	0		pH Units@19°C	1	06/14/16 10:05 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	498	10.0	10.0		mg/L	1	06/15/16 08:55 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: 1606122

Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160617A

The QC data in batch 75718 applies to the following samples: 1606122-01A, 1606122-02A, 1606122-03A, 1606122-04A, 1606122-05A, 1606122-06A, 1606122-07A, 1606122-08A

Sample ID	MB-75718	Batch ID:	75718	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 3:05:11 PM	Prep Date:	6/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-75718	Batch ID:	75718	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 3:09:43 PM	Prep Date:	6/17/2016			
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	LCSD-75718	Batch ID:	75718	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 3:11:59 PM	Prep Date:	6/17/2016			
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

Sample ID	1606101-32B SD	Batch ID:	75718	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 3:16:31 PM	Prep Date:	6/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200 0 0 0 0 10

Sample ID	1606101-32B PDS	Batch ID:	75718	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 3:18:46 PM	Prep Date:	6/17/2016			
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	1606101-32B MS	Batch ID:	75718	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 3:21:02 PM	Prep Date:	6/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00190 0.000200 0.00200 0 95.0 80 120

Sample ID	1606101-32B MSD	Batch ID:	75718	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 3:23:18 PM	Prep Date:	6/17/2016			
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 1.57 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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160617A

Sample ID	ICV-160617	Batch ID:	R86398	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 10:17:36 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00406	0.000200	0.00400	0	102	90	110			

Sample ID	CCV8-160617	Batch ID:	R86398	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_160617A	Analysis Date:	6/17/2016 3:00:37 PM	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			

Sample ID	CCV9-160617			Batch ID:	R86398		TestNo:	SW7470A		Units:	mg/L	
SampType:	CCV			Run ID:	CETAC2_HG_160617A		Analysis Date:	6/17/2016 3:52:14 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Mercury	0.00212	0.000200	0.00200	0	106	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: 1606122

Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160617B

The QC data in batch 75691 applies to the following samples: 1606122-01A, 1606122-02A, 1606122-03A, 1606122-04A, 1606122-05A, 1606122-06A, 1606122-07A, 1606122-08A

Sample ID	MB-75691	Batch ID:	75691	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:01:00 PM	Prep Date:	6/16/2016

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	LCS-75691	Batch ID:	75691	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:03:00 PM	Prep Date:	6/16/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.201	0.00250	0.200	0	100	80	120			
Arsenic	0.203	0.00500	0.200	0	101	80	120			
Barium	0.202	0.0100	0.200	0	101	80	120			
Beryllium	0.211	0.00100	0.200	0	105	80	120			
Cadmium	0.202	0.00100	0.200	0	101	80	120			
Calcium	4.79	0.300	5.00	0	95.7	80	120			
Chromium	0.207	0.00500	0.200	0	104	80	120			
Cobalt	0.210	0.00500	0.200	0	105	80	120			
Lead	0.200	0.00100	0.200	0	100	80	120			
Lithium	0.226	0.0100	0.200	0	113	80	120			
Molybdenum	0.200	0.00500	0.200	0	100	80	120			
Selenium	0.206	0.00500	0.200	0	103	80	120			
Thallium	0.205	0.00150	0.200	0	102	80	120			

Sample ID	LCSD-75691	Batch ID:	75691	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:05:00 PM	Prep Date:	6/16/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	100	80	120	0.276	15	
Arsenic	0.202	0.00500	0.200	0	101	80	120	0.489	15	
Barium	0.202	0.0100	0.200	0	101	80	120	0.031	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160617B

Sample ID	LCSD-75691			Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_160617B		Analysis Date:	6/17/2016 1:05:00 PM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	0.214	0.00100	0.200	0	107	80	120	1.50	15	
Cadmium	0.202	0.00100	0.200	0	101	80	120	0.137	15	
Calcium	4.82	0.300	5.00	0	96.5	80	120	0.815	15	
Chromium	0.205	0.00500	0.200	0	103	80	120	0.800	15	
Cobalt	0.208	0.00500	0.200	0	104	80	120	0.679	15	
Lead	0.200	0.00100	0.200	0	100	80	120	0.177	15	
Lithium	0.215	0.0100	0.200	0	107	80	120	5.18	15	
Molybdenum	0.198	0.00500	0.200	0	99.0	80	120	1.14	15	
Selenium	0.203	0.00500	0.200	0	101	80	120	1.44	15	
Thallium	0.206	0.00150	0.200	0	103	80	120	0.579	15	

Sample ID	1606142-07A SD			Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD			Run ID:	ICP-MS4_160617B		Analysis Date:	6/17/2016 1:11:00 PM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	0.0147	0.0250	0	0.0148				1.02	10	
Barium	0.0245	0.0500	0	0.0247				0.963	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Cadmium	<0.00150	0.00500	0	0.000432				0	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	0.0449	0.0250	0	0.0423				5.90	10	
Lead	<0.00150	0.00500	0	0				0	10	
Molybdenum	0.809	0.0250	0	0.813				0.480	10	
Selenium	<0.0100	0.0250	0	0.00263				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID	1606142-07A PDS			Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_160617B		Analysis Date:	6/17/2016 1:31:00 PM		Prep Date:	6/16/2016	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.194	0.00250	0.200	0	97.1	80	120			
Arsenic	0.218	0.00500	0.200	0.0148	102	80	120			
Barium	0.214	0.0100	0.200	0.0247	94.8	80	120			
Beryllium	0.163	0.00100	0.200	0	81.6	80	120			
Cadmium	0.176	0.00100	0.200	0.000432	87.8	80	120			
Chromium	0.183	0.00500	0.200	0	91.3	80	120			
Cobalt	0.232	0.00500	0.200	0.0423	94.8	80	120			
Lead	0.202	0.00100	0.200	0	101	80	120			
Molybdenum	0.942	0.00500	0.200	0.813	64.6	80	120			S
Selenium	0.235	0.00500	0.200	0.00263	116	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160617B

Sample ID	1606142-07A PDS	Batch ID:	75691	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:31:00 PM	Prep Date:	6/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID	1606142-07A MS	Batch ID:	75691	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:33:00 PM	Prep Date:	6/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.191	0.00250	0.200	0	95.6	80	120			
Arsenic	0.219	0.00500	0.200	0.0148	102	80	120			
Barium	0.217	0.0100	0.200	0.0247	96.0	80	120			
Beryllium	0.155	0.00100	0.200	0	77.6	80	120			S
Cadmium	0.177	0.00100	0.200	0.000432	88.4	80	120			
Calcium	378	0.300	5.00	368	211	80	120			S
Chromium	0.176	0.00500	0.200	0	87.9	80	120			
Cobalt	0.230	0.00500	0.200	0.0423	94.0	80	120			
Lead	0.198	0.00100	0.200	0	99.0	80	120			
Lithium	0.212	0.0100	0.200	0.0731	69.4	80	120			S
Molybdenum	0.997	0.00500	0.200	0.813	92.0	80	120			
Selenium	0.238	0.00500	0.200	0.00263	118	80	120			
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID	1606142-07A MSD	Batch ID:	75691	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:35:00 PM	Prep Date:	6/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.196	0.00250	0.200	0	97.9	80	120	2.33	15	S
Arsenic	0.219	0.00500	0.200	0.0148	102	80	120	0.093	15	
Barium	0.220	0.0100	0.200	0.0247	97.7	80	120	1.56	15	
Beryllium	0.156	0.00100	0.200	0	77.9	80	120	0.395	15	
Cadmium	0.179	0.00100	0.200	0.000432	89.3	80	120	0.962	15	
Calcium	376	0.300	5.00	368	158	80	120	0.702	15	S
Chromium	0.177	0.00500	0.200	0	88.6	80	120	0.876	15	S
Cobalt	0.230	0.00500	0.200	0.0423	93.7	80	120	0.257	15	
Lead	0.202	0.00100	0.200	0	101	80	120	2.10	15	
Lithium	0.205	0.0100	0.200	0.0731	66.0	80	120	3.27	15	
Molybdenum	1.01	0.00500	0.200	0.813	96.4	80	120	0.878	15	
Selenium	0.242	0.00500	0.200	0.00263	120	80	120	1.68	15	
Thallium	0.204	0.00150	0.200	0	102	80	120	0.915	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160617B

Sample ID	ICV-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 10:43:00 AM	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	0.0990	0.00500	0.100	0	99.0	90	110			
Barium	0.0982	0.0100	0.100	0	98.2	90	110			
Beryllium	0.0990	0.00100	0.100	0	99.0	90	110			
Cadmium	0.0981	0.00100	0.100	0	98.1	90	110			
Calcium	2.33	0.300	2.50	0	93.3	90	110			
Chromium	0.103	0.00500	0.100	0	103	90	110			
Cobalt	0.102	0.00500	0.100	0	102	90	110			
Lead	0.0976	0.00100	0.100	0	97.6	90	110			
Lithium	0.0940	0.0100	0.100	0	94.0	90	110			
Molybdenum	0.0945	0.00500	0.100	0	94.5	90	110			
Selenium	0.102	0.00500	0.100	0	102	90	110			
Thallium	0.0979	0.00150	0.100	0	97.9	90	110			

Sample ID	LCVL-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 10:47:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00199	0.00250	0.00200	0	99.6	70	130			
Arsenic	0.00512	0.00500	0.00500	0	102	70	130			
Barium	0.00522	0.0100	0.00500	0	104	70	130			
Beryllium	0.000870	0.00100	0.00100	0	87.0	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.110	0.300	0.100	0	110	70	130			
Chromium	0.00533	0.00500	0.00500	0	107	70	130			
Cobalt	0.00519	0.00500	0.00500	0	104	70	130			
Lead	0.000918	0.00100	0.00100	0	91.8	70	130			
Lithium	0.0100	0.0100	0.0100	0	100	70	130			
Molybdenum	0.00500	0.00500	0.00500	0	100	70	130			
Selenium	0.00530	0.00500	0.00500	0	106	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID	CCV2-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 12:42:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.198	0.00250	0.200	0	99.2	90	110			
Arsenic	0.201	0.00500	0.200	0	101	90	110			
Barium	0.196	0.0100	0.200	0	98.0	90	110			
Beryllium	0.214	0.00100	0.200	0	107	90	110			
Cadmium	0.195	0.00100	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160617B

Sample ID	CCV2-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 12:42:00 PM	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	0.203	0.00500	0.200	0	101	90	110			
Cobalt	0.208	0.00500	0.200	0	104	90	110			
Lead	0.200	0.00100	0.200	0	100	90	110			
Lithium	0.216	0.0100	0.200	0	108	90	110			
Molybdenum	0.193	0.00500	0.200	0	96.5	90	110			
Selenium	0.204	0.00500	0.200	0	102	90	110			
Thallium	0.204	0.00150	0.200	0	102	90	110			

Sample ID	LCVL2-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 12:47:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00200	0.00250	0.00200	0	99.8	70	130			
Arsenic	0.00529	0.00500	0.00500	0	106	70	130			
Barium	0.00505	0.0100	0.00500	0	101	70	130			
Beryllium	0.000756	0.00100	0.00100	0	75.6	70	130			
Cadmium	0.00102	0.00100	0.00100	0	102	70	130			
Calcium	0.107	0.300	0.100	0	107	70	130			
Chromium	0.00525	0.00500	0.00500	0	105	70	130			
Cobalt	0.00528	0.00500	0.00500	0	106	70	130			
Lead	0.000861	0.00100	0.00100	0	86.1	70	130			
Lithium	0.0129	0.0100	0.0100	0	129	70	130			
Molybdenum	0.00499	0.00500	0.00500	0	99.7	70	130			
Selenium	0.00573	0.00500	0.00500	0	115	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV3-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:37:00 PM	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	0.201	0.00500	0.200	0	101	90	110			
Barium	0.199	0.0100	0.200	0	99.7	90	110			
Beryllium	0.197	0.00100	0.200	0	98.5	90	110			
Cadmium	0.199	0.00100	0.200	0	99.7	90	110			
Calcium	5.10	0.300	5.00	0	102	90	110			
Chromium	0.196	0.00500	0.200	0	98.1	90	110			
Cobalt	0.202	0.00500	0.200	0	101	90	110			
Lead	0.200	0.00100	0.200	0	100	90	110			
Lithium	0.198	0.0100	0.200	0	98.8	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160617B

Sample ID	CCV3-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:37:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum		0.197	0.00500	0.200	0	98.6	90	110			
Selenium		0.210	0.00500	0.200	0	105	90	110			
Thallium		0.206	0.00150	0.200	0	103	90	110			

Sample ID	LCVL3-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 1:41:00 PM	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	0.00526	0.00500	0.00500	0	105	70	130			
Barium	0.00527	0.0100	0.00500	0	105	70	130			
Beryllium	0.00116	0.00100	0.00100	0	116	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.112	0.300	0.100	0	112	70	130			
Chromium	0.00526	0.00500	0.00500	0	105	70	130			
Cobalt	0.00534	0.00500	0.00500	0	107	70	130			
Lead	0.000882	0.00100	0.00100	0	88.2	70	130			
Lithium	0.0113	0.0100	0.0100	0	113	70	130			
Molybdenum	0.00514	0.00500	0.00500	0	103	70	130			
Selenium	0.00562	0.00500	0.00500	0	112	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID	CCV4-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160617B	Analysis Date: 6/17/2016 2:05:00 PM		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	0.200	0.00500	0.200	0	100	90	110			
Barium	0.197	0.0100	0.200	0	98.7	90	110			
Beryllium	0.211	0.00100	0.200	0	106	90	110			
Cadmium	0.197	0.00100	0.200	0	98.6	90	110			
Calcium	4.88	0.300	5.00	0	97.7	90	110			
Chromium	0.201	0.00500	0.200	0	100	90	110			
Cobalt	0.205	0.00500	0.200	0	102	90	110			
Lead	0.198	0.00100	0.200	0	99.2	90	110			
Molybdenum	0.193	0.00500	0.200	0	96.3	90	110			
Selenium	0.206	0.00500	0.200	0	103	90	110			
Thallium	0.204	0.00150	0.200	0	102	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160617B

Sample ID	LCVL4-160617	Batch ID:	R86404	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160617B	Analysis Date:	6/17/2016 2:09:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00201	0.00250	0.00200	0	101	70	130			
Arsenic	0.00529	0.00500	0.00500	0	106	70	130			
Barium	0.00510	0.0100	0.00500	0	102	70	130			
Beryllium	0.00101	0.00100	0.00100	0	101	70	130			
Cadmium	0.000909	0.00100	0.00100	0	90.9	70	130			
Calcium	0.110	0.300	0.100	0	110	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	0.000862	0.00100	0.00100	0	86.2	70	130			
Molybdenum	0.00493	0.00500	0.00500	0	98.5	70	130			
Selenium	0.00535	0.00500	0.00500	0	107	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160623A

The QC data in batch 75691 applies to the following samples: 1606122-01A, 1606122-02A, 1606122-03A, 1606122-04A, 1606122-05A, 1606122-06A, 1606122-07A, 1606122-08A

Sample ID	MB-75691		Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160623A		Analysis Date:	6/23/2016 12:23:00 PM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	<0.0100	0.0300								

Sample ID	LCS-75691			Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_160623A		Analysis Date:	6/23/2016 12:25:00 PM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	0.211	0.0300	0.200	0	105	80	120			

Sample ID	LCSD-75691			Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_160623A		Analysis Date:	6/23/2016 12:27:00 PM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	0.211	0.0300	0.200	0	106	80	120	0.445	15	

Sample ID	1606142-07A SD		Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD		Run ID:	ICP-MS4_160623A		Analysis Date:	6/23/2016 12:33:00 PM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	1.91	1.50	0	1.79				6.67	10	

Lithium	<0.250	0.500	0	0.0936				0	10	

Sample ID	1606142-07A PDS			Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_160623A		Analysis Date:	6/23/2016 12:53:00 PM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	3.87	0.300	2.00	1.79	104	80	120			

Lithium	2.01	0.100	2.00	0.0936	95.8	80	120			

Sample ID	1606142-07A MS	Batch ID:	75691	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 12:55:00 PM	Prep Date:	6/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	2.16	0.300	0.200	1.79	183	80	120			S

Sample ID	1606142-07A MSD			Batch ID:	75691			TestNo:	SW6020A			Units:	mg/L		
SampType:	MSD			Run ID:	ICP-MS4_160623A			Analysis Date:	6/23/2016 12:57:00 PM			Prep Date:	6/16/2016		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Boron	2.09	0.300	0.200	1.79	149	80	120	3.18	15	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160623A

Sample ID: 1606142-07A SD	Batch ID: 75691	TestNo: SW6020A	Units: mg/L							
SampType: SD	Run ID: ICP-MS4_160623A	Analysis Date: 6/23/2016 1:43:00 PM	Prep Date: 6/16/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	376	75.0	0	369				1.91	10	

Sample ID	1606142-07A PDS		Batch ID:	75691		TestNo:	SW6020A		Units:	mg/L		
SampType:	PDS		Run ID:	ICP-MS4_160623A		Analysis Date:	6/23/2016 1:45:00 PM		Prep Date:	6/16/2016		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	608	15.0	250	369	95.6	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160623A

Sample ID	ICV-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 11:37:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.107	0.0300	0.100	0	107	90	110			
Calcium	2.37	0.300	2.50	0	94.6	90	110			
Lithium	0.104	0.0100	0.100	0	104	90	110			

Sample ID	LCVL-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 11:48:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0213	0.0300	0.0200	0	107	70	130			
Calcium	0.0946	0.300	0.100	0	94.6	70	130			
Lithium	0.0114	0.0100	0.0100	0	114	70	130			

Sample ID	CCV1-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 12:12:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.196	0.0300	0.200	0	97.8	90	110			
Calcium	4.74	0.300	5.00	0	94.7	90	110			
Lithium	0.201	0.0100	0.200	0	100	90	110			

Sample ID	LCVL1-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 12:19:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0234	0.0300	0.0200	0	117	70	130			
Calcium	0.0953	0.300	0.100	0	95.3	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			

Sample ID	CCV2-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 12:59:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.211	0.0300	0.200	0	105	90	110			
Calcium	4.81	0.300	5.00	0	96.1	90	110			
Lithium	0.202	0.0100	0.200	0	101	90	110			

Sample ID	LCVL2-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 1:37:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0184	0.0300	0.0200	0	92.2	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160623A

Sample ID	LCVL2-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 1:37:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0925	0.300	0.100	0	92.5	70	130			
Lithium	0.00975	0.0100	0.0100	0	97.5	70	130			

Sample ID	CCV3-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 2:03:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.90	0.300	5.00	0	97.9	90	110			
Lithium	0.214	0.0100	0.200	0	107	90	110			

Sample ID	LCVL3-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 2:22:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0933	0.300	0.100	0	93.3	70	130			
Lithium	0.0110	0.0100	0.0100	0	110	70	130			

Sample ID	CCV4-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 2:48:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.212	0.0100	0.200	0	106	90	110			

Sample ID	LCVL4-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 2:55:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.0105	0.0100	0.0100	0	105	70	130			

Sample ID	CCV6-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 4:11:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.78	0.300	5.00	0	95.6	90	110			

Sample ID	LCVL6-160623	Batch ID:	R86514	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160623A	Analysis Date:	6/23/2016 4:31:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0980	0.300	0.100	0	98.0	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160627A

Sample ID	ICV-160627	Batch ID:	R86563	TestNo:	SW6020A	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS4_160627A	Analysis Date:	6/27/2016 12:26:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.0994	0.0300	0.100	0	99.4	90	110

Sample ID	LCVL-160627	Batch ID:	R86563	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160627A	Analysis Date:	6/27/2016 12:32:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.0231	0.0300	0.0200	0	115	70	130

Sample ID	CCV1-160627	Batch ID:	R86563	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160627A	Analysis Date:	6/27/2016 1:27:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.213	0.0300	0.200	0	107	90	110

Sample ID	LCVL1-160627	Batch ID:	R86563	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160627A	Analysis Date:	6/27/2016 1:45:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Boron	0.0244	0.0300	0.0200	0	122	70	130

Sample ID	CCV2-160627	Batch ID:	R86563	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160627A	Analysis Date:	6/27/2016 2:23:00 PM	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

Sample ID	LCVL2-160627	Batch ID:	R86563	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160627A	Analysis Date:	6/27/2016 2:41:00 PM	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

Sample ID	CCV3-160627	Batch ID:	R86563	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160627A	Analysis Date:	6/27/2016 3:20:00 PM	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

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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160627A

Sample ID	LCVL3-160627	Batch ID:	R86563	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160627A	Analysis Date:	6/27/2016 3:36:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0219	0.0300	0.0200	0	109	70	130			

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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_160616A

The QC data in batch 75689 applies to the following samples: 1606122-01D, 1606122-02D, 1606122-03D, 1606122-04D, 1606122-05D, 1606122-06D, 1606122-07D, 1606122-08D

Sample ID	MB-75689	Batch ID:	75689	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC4_160616A	Analysis Date:	6/16/2016 10:52:51 AM	Prep Date:	6/16/2016			
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	LCS-75689			Batch ID:	75689		TestNo:	E300		Units:	mg/L			
SampType:	LCS			Run ID:	IC4_160616A		Analysis Date:	6/16/2016 11:07:51 AM		Prep Date:	6/16/2016			
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	4.05	0.400	4.000	0	101	90	110			
Sulfate	31.4	3.00	30.00	0	105	90	110			

Sample ID	LCSD-75689		Batch ID:	75689		TestNo:	E300		Units:	mg/L	
SampType:	LCSD		Run ID:	IC4_160616A		Analysis Date:	6/16/2016 11:22:51 AM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.4	1.00	10.00	0	104	90	110	0.815	20	
Fluoride	4.07	0.400	4.000	0	102	90	110	0.403	20	
Sulfate	31.6	3.00	30.00	0	105	90	110	0.449	20	

Sample ID	1606122-04DMS			Batch ID:	75689		TestNo:	E300		Units:	mg/L	
SampType:	MS			Run ID:	IC4_160616A		Analysis Date:	6/16/2016 4:35:41 PM		Prep Date:	6/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	246	10.0	200.0	36.01	105	90	110			
Fluoride	206	4.00	200.0	0	103	90	110			
Sulfate	777	30.0	200.0	556.8	110	90	110			

Sample ID	1606122-04DMSD			Batch ID:	75689			TestNo:	E300			Units:	mg/L		
SampType:	MSD			Run ID:	IC4_160616A			Analysis Date:	6/16/2016 4:50:41 PM			Prep Date:	6/16/2016		
Analyte	Result			RL	SPK value		Ref Val	%REC		LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	244	10.0	200.0	36.01	104	90	110	0.817	20	
Fluoride	205	4.00	200.0	0	102	90	110	0.722	20	
Sulfate	775	30.0	200.0	556.8	109	90	110	0.277	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_160616A

Sample ID	ICV-160616	Batch ID:	R86383	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC4_160616A	Analysis Date:	6/16/2016 10:13:44 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.7	1.00	25.00	0	103	90	110			
Fluoride	10.1	0.400	10.00	0	101	90	110			
Sulfate	78.9	3.00	75.00	0	105	90	110			

Sample ID	CCV1-160616	Batch ID:	R86383	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160616A	Analysis Date:	6/16/2016 2:48:53 PM	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	4.15	0.400	4.000	0	104	90	110			
Sulfate	32.1	3.00	30.00	0	107	90	110			

Sample ID	CCV2-160616	Batch ID:	R86383	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160616A	Analysis Date:	6/16/2016 6:35:41 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.6	1.00	10.00	0	106	90	110			
Fluoride	4.19	0.400	4.000	0	105	90	110			
Sulfate	32.0	3.00	30.00	0	107	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160614A

The QC data in batch 75614 applies to the following samples: 1606122-01D, 1606122-02D, 1606122-03D, 1606122-04D, 1606122-05D, 1606122-06D, 1606122-07D, 1606122-08D

Sample ID	1606121-01D-DUP	Batch ID:	75614	TestNo:	M4500-H+ B	Units:	pH Units@17.8°C
SampType:	DUP	Run ID:	TITRATOR_160614A	Analysis Date:	6/14/2016 9:31:00 AM	Prep Date:	6/14/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

pH	6.30	0	0	6.330			0.475	5

Sample ID	1606132-01A-DUP	Batch ID:	75614	TestNo:	M4500-H+ B	Units:	pH Units@19.5°C
SampType:	DUP	Run ID:	TITRATOR_160614A	Analysis Date:	6/14/2016 10:13:00 AM	Prep Date:	6/14/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

pH	7.38	0	0	7.370			0.136	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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160614A

Sample ID	ICV-160614	Batch ID:	R86296	TestNo:	M4500-H+ B	Units:	pH Units@22°C			
SampType:	ICV	Run ID:	TITRATOR_160614A	Analysis Date:	6/14/2016 8:36:00 AM	Prep Date:	6/14/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.93	0	10.00	0	99.3	99	101			

Sample ID	CCV1-160614	Batch ID:	R86296	TestNo:	M4500-H+ B	Units:	pH Units@21.2°C			
SampType:	CCV	Run ID:	TITRATOR_160614A	Analysis Date:	6/14/2016 9:50:00 AM	Prep Date:	6/14/2016			
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			

Sample ID	CCV2-160614	Batch ID:	R86296	TestNo:	M4500-H+ B	Units:	pH Units@21°C				
SampType:	CCV	Run ID:	TITRATOR_160614A	Analysis Date:	6/14/2016 10:15:00 AM	Prep Date:	6/14/2016				
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

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: 1606122
Project: Luminant - MLSES

ANALYTICAL QC SUMMARY REPORT

RunID: WC_160614C

The QC data in batch 75640 applies to the following samples: 1606122-01D, 1606122-02D, 1606122-03D, 1606122-04D, 1606122-05D, 1606122-06D, 1606122-07D, 1606122-08D

Sample ID	MB-75640	Batch ID:	75640	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_160614C	Analysis Date:	6/15/2016 8:55:00 AM	Prep Date:	6/14/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-75640	Batch ID:	75640	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_160614C	Analysis Date:	6/15/2016 8:55:00 AM	Prep Date:	6/14/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 769 10.0 745.6 0 103 90 113

Sample ID	1606122-03D-DUP	Batch ID:	75640	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_160614C	Analysis Date:	6/15/2016 8:55:00 AM	Prep Date:	6/14/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 2380 50.0 0 2345 1.48 5

Sample ID	1606123-01D-DUP	Batch ID:	75640	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_160614C	Analysis Date:	6/15/2016 8:55:00 AM	Prep Date:	6/14/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 1450 50.0 0 1385 4.59 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: 20160577

This report contains the analytical results for the 16 sample(s) received under chain of custody by ESC Lab Sciences on 6/15/2016 11:00:09 AM. These samples are associated with your 1606122-123 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



Client : DHL Analytical, Inc.
Client Project : 1606122-123
Lab Number : 20160577
Date Reported: 07/22/16
Date Received: 06/15/16
Page Number : 2 of 6

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160577-01
Client ID : BMW-24
Date Sampled : 6/8/2016 3:15:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium	1.62 +/- 0.900	1.07	pCi/l				
Radium-226 SM 7500 Ra B M*	0.360 +/- 0.153	0.138	pCi/l		06/22/16	06/23/16	AK
Radium-228 EPA 904*/9320*	1.26 +/- 0.747	0.927	pCi/l		07/11/16	07/19/16	JR

Lab ID : 20160577-02
Client ID : BMW-23
Date Sampled : 6/8/2016 4:05:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium	1.94 +/- 0.978	1.12	pCi/l				
Radium-226 SM 7500 Ra B M*	0.654 +/- 0.225	0.185	pCi/l		06/22/16	06/23/16	AK
Radium-228 EPA 904*/9320*	1.29 +/- 0.753	0.931	pCi/l		07/11/16	07/20/16	JR

Lab ID : 20160577-03
Client ID : BMW-22
Date Sampled : 6/8/2016 5:00:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium	2.77 +/- 0.866	0.928	pCi/l				
Radium-226 SM 7500 Ra B M*	0.888 +/- 0.243	0.196	pCi/l		06/22/16	06/23/16	AK
Radium-228 EPA 904*/9320*	1.88 +/- 0.623	0.732	pCi/l		07/11/16	07/20/16	JR

Lab ID : 20160577-04
Client ID : BMW-20
Date Sampled : 6/9/2016 8:15:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium	1.07 +/- 0.708	0.803	pCi/l				
Radium-226 SM 7500 Ra B M*	0.512 +/- 0.173	0.087	pCi/l		06/22/16	06/23/16	AK
Radium-228 EPA 904*/9320*	0.554 +/- 0.535	0.716	pCi/l		07/11/16	07/20/16	JR



Client : DHL Analytical, Inc.
Client Project : 1606122-123
Lab Number : 20160577
Date Reported: 07/22/16
Date Received: 06/15/16
Page Number : 3 of 6

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160577-05
Client ID : BMW-21
Date Sampled : 6/9/2016 9:05:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.09 +/- 0.893	1.09	pCi/l			
Radium-226	SM 7500 Ra B M*	0.319 +/- 0.169	0.171	pCi/l	06/22/16	06/23/16	AK
Radium-228	EPA 904*/9320*	0.773 +/- 0.724	0.917	pCi/l	07/11/16	07/20/16	JR

Lab ID : 20160577-06
Client ID : BMW-11AR
Date Sampled : 6/9/2016 10:05:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.650 +/- 0.683	0.815	pCi/l			
Radium-226	SM 7500 Ra B M*	0.465 +/- 0.173	0.141	pCi/l	06/22/16	06/26/16	AK
Radium-228	EPA 904*/9320*	0.185 +/- 0.510	0.674	pCi/l	07/11/16	07/20/16	JR

Lab ID : 20160577-07
Client ID : BMW-19
Date Sampled : 6/9/2016 11:00:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		2.05 +/- 0.789	1.35	pCi/l			
Radium-226	SM 7500 Ra B M*	0.074 +/- 0.093	0.142	pCi/l	06/22/16	06/26/16	AK
Radium-228	EPA 904*/9320*	1.98 +/- 0.696	1.21	pCi/l	07/11/16	07/20/16	JR

Lab ID : 20160577-08
Client ID : BMW-18
Date Sampled : 6/9/2016 12:15:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.914 +/- 0.721	0.952	pCi/l			
Radium-226	SM 7500 Ra B M*	0.057 +/- 0.089	0.143	pCi/l	06/22/16	06/26/16	AK
Radium-228	EPA 904*/9320*	0.857 +/- 0.632	0.809	pCi/l	07/11/16	07/20/16	JR

Client : DHL Analytical, Inc.
 Client Project : 1606122-123
 Lab Number : 20160577
 Date Reported: 07/22/16
 Date Received: 06/15/16
 Page Number : 6 of 6

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	89.8			NC	0.121	97.5	96.5	1.0	R1100
Radium-228	-0.283	104.0			145.0	1.580	101.0	96.6	4.3	R3830

Lab Approval: _____



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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1606122

Subcontractor:

ESC Laboratory
311 North Aspen
Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515
FAX:
Acct #: DHLRRTX

11-Jun-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests				
					E904.0	SM7500Ra-B M			
BMW-24	Aqueous	-01B	06/08/16 03:15 PM	500HDPEHNO3	1				
BMW-24	Aqueous	-01C	06/08/16 03:15 PM	500HDPEHNO3		1			
BMW-23	Aqueous	-02B	06/08/16 04:05 PM	500HDPEHNO3	1				
BMW-23	Aqueous	-02C	06/08/16 04:05 PM	500HDPEHNO3		1			
BMW-22	Aqueous	-03B	06/08/16 05:00 PM	500HDPEHNO3	1				
BMW-22	Aqueous	-03C	06/08/16 05:00 PM	500HDPEHNO3		1			
BMW-20	Aqueous	-04B	06/09/16 08:15 AM	500HDPEHNO3	1				
BMW-20	Aqueous	-04C	06/09/16 08:15 AM	500HDPEHNO3		1			
BMW-21	Aqueous	-05B	06/09/16 09:05 AM	500HDPEHNO3	1				
BMW-21	Aqueous	-05C	06/09/16 09:05 AM	500HDPEHNO3		1			
BMW-11AR	Aqueous	-06B	06/09/16 10:05 AM	500HDPEHNO3	1				
BMW-11AR	Aqueous	-06C	06/09/16 10:05 AM	500HDPEHNO3		1			
BMW-19	Aqueous	-07B	06/09/16 11:00 AM	500HDPEHNO3	1				
BMW-19	Aqueous	-07C	06/09/16 11:00 AM	500HDPEHNO3		1			
BMW-18	Aqueous	-08B	06/09/16 12:15 PM	500HDPEHNO3	1				
BMW-18	Aqueous	-08C	06/09/16 12:15 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

L 84/689
20/60577

Date/Time		Date/Time	
Relinquished by: <u>[Signature]</u>	<u>6/13/16 1730</u>	Received by: <u>[Signature]</u>	<u>6/13/16 1730</u>
Relinquished by: _____	_____	Received by: <u>[Signature]</u>	<u>6/10/16 1100</u>

SAMPLE LOGIN

Date Received: 06/15/16 11:00:09

Lab Number: 20160577

Due: 07/13/16

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160577-01 B	BMW-24	NPW	06/08/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-01 A	BMW-24	NPW	06/08/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-02 A	BMW-23	NPW	06/08/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-02 B	BMW-23	NPW	06/08/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-03 A	BMW-22	NPW	06/08/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-03 B	BMW-22	NPW	06/08/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-04 B	BMW-20	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-04 A	BMW-20	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-05 A	BMW-21	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-05 B	BMW-21	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-06 A	BMW-11AR	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-06 B	BMW-11AR	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-07 A	BMW-19	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-07 B	BMW-19	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						

20160577-08 A	BMW-18	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-08 B	BMW-18	NPW	06/09/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-09 B	AMW-13	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-09 A	AMW-13	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-10 A	AMW-14	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-10 B	AMW-14	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-11 A	AMW-23	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-11 B	AMW-23	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-12 B	AMW-22	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-12 A	AMW-22	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-13 A	AMW-20	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-13 B	AMW-20	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-14 A	AMW-10	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-14 B	AMW-10	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-15 A	AMW-21	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-15 B	AMW-21	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160577-16 B	A-1 POND	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20160577-16 A	A-1 POND	NPW	06/10/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes

Radium-226

Radium-228

SM 7500 Ra B M*

EPA 904*/9320*

CONTAINER INSPECTION

Coolers Custody Seals Broken No Temperature: N/A Ice Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken No Chain of Custody Record ☒ Labels in Tact ☒ mostly Radiation Survey Complete ☒ N/A

Anomalles

Inspected By: RSL DATE 01/15/16

QA or Designee Review: Raymond Thomas DATE 06/15/16

Sample Custodian Review: _____ DATE _____

Project Notes:

Sample -15, AMW-21, was not preserved. 06/15/16 M



September 14, 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 - Martin Lake

Order No.: 1608133

Dear Will Vienne:

DHL Analytical, Inc. received 27 sample(s) on 8/11/2016 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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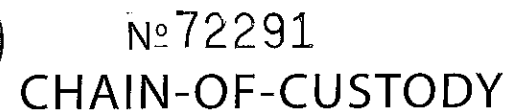
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AnalyticalDatesReport 1608133 19

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AnalyticalQCSummaryReport 1608133 54

Subcontract Report 1608133 114



COLLECTOR: C KAROLEWSKI

3

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: 8-11-16 PAGE 1 OF 1
PO #: 5164-B DHL WORK ORDER #: 1608133
PROJECT LOCATION OR NAME: LUMINANT- MSES
CLIENT PROJECT #: 5164-B COLLECTOR: J. BRAYTON

[illegible]

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
<i>[Signature]</i>	17.208-11-16 5:20	<i>[Signature]</i>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

TURN AROUND TIME

RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 31.0.2 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

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 8/11/2016

Work Order Number 1608133

Received by JT

Checklist completed by:

Signature

8/12/2016

Date

Reviewed by

Initials

8/12/2016

Date

Carrier name Hand Delivered

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 10.2/0.16

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 - Martin Lake
Lab Order: 1608133

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 8/11/16. A total of 27 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis (batch 76817) the matrix spike and matrix spike duplicate had low responses for the internal standard Bismuth. The associated analyte (Lead) was within control limits. No further corrective actions were taken.

For Metals analysis performed on 8/17/16, 8/19/16, 8/22/16, 8/23/16 and 8/24/16 (batches 76816, 76817, 76893 and 76895) the matrix spikes and matrix spike duplicate recoveries were out of control limits for a total of nine analytes. In addition, the matrix spikes and matrix spike duplicates (batches 76893 & 76895) had the RPD slightly above control limits for Boron or Selenium. 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 8/22/16 and 8/24/16 (batches 76817 & 76893) the RPDs for the serial dilutions were slightly above control limits for Boron. These are flagged accordingly. The PDSs were within control limits for this analyte. No further corrective actions were taken.

For Metals analysis performed on 8/19/16 and 8/23/16 (batches 76817 & 76893) the PDS recoveries were below control limits for Molybdenum or Lithium. These are flagged accordingly. The serial dilutions were within control limits for these analytes. No further corrective actions were taken.

For Metals analysis performed on 8/18/16 and 8/22/16 LCVL3-160818 and LCVL2-160822 were out of control limits for Boron or Beryllium. These are flagged accordingly. The associated CCV3-160818

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Lab Order: 1608133

CASE NARRATIVE

and CCV2-160822 were within control limits for these analytes. No further corrective actions were taken.

LUMINANT

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Lab Order: 1608133

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1608133-01	H-28		08/09/16 09:30 AM	8/11/2016
1608133-02	H-29		08/09/16 10:35 AM	8/11/2016
1608133-03	H-31		08/09/16 11:50 AM	8/11/2016
1608133-04	H-30		08/09/16 12:45 PM	8/11/2016
1608133-05	H-32		08/09/16 01:50 PM	8/11/2016
1608133-06	H-27		08/09/16 02:50 PM	8/11/2016
1608133-07	H-33		08/09/16 03:55 PM	8/11/2016
1608133-08	H-26		08/09/16 04:45 PM	8/11/2016
1608133-09	DUP-01		08/09/16 02:38 PM	8/11/2016
1608133-10	PDP-25		08/10/16 01:30 PM	8/11/2016
1608133-11	PDP-24		08/10/16 11:00 AM	8/11/2016
1608133-12	MW-17A		08/10/16 10:20 AM	8/11/2016
1608133-13	PDP-23		08/10/16 09:10 AM	8/11/2016
1608133-14	MW-19		08/10/16 03:00 PM	8/11/2016
1608133-15	MW-20A		08/10/16 02:10 PM	8/11/2016
1608133-16	PDP-22		08/10/16 09:20 AM	8/11/2016
1608133-17	PDP-26		08/10/16 10:30 AM	8/11/2016
1608133-18	MW-18A		08/10/16 11:30 AM	8/11/2016
1608133-19	EB-1		08/10/16 11:45 AM	8/11/2016
1608133-20	BMW-11AR		08/11/16 08:25 AM	8/11/2016
1608133-21	BMW-19		08/11/16 09:20 AM	8/11/2016
1608133-22	BMW-18		08/11/16 10:15 AM	8/11/2016
1608133-23	BMW-20		08/11/16 10:50 AM	8/11/2016
1608133-24	BMW-24		08/11/16 08:50 AM	8/11/2016
1608133-25	BMW-23		08/11/16 09:20 AM	8/11/2016
1608133-26	BMW-22		08/11/16 10:00 AM	8/11/2016
1608133-27	BMW-21		08/11/16 10:30 AM	8/11/2016

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1608133-01A	H-28	08/09/16 09:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:53 AM	76816
	H-28	08/09/16 09:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:53 AM	76816
	H-28	08/09/16 09:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-01D	H-28	08/09/16 09:30 AM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-28	08/09/16 09:30 AM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-28	08/09/16 09:30 AM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	H-28	08/09/16 09:30 AM	Aqueous	M2540C	TDS Preparation	08/15/16 03:45 PM	76803
1608133-02A	H-29	08/09/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:53 AM	76816
	H-29	08/09/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:53 AM	76816
	H-29	08/09/16 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:53 AM	76816
	H-29	08/09/16 10:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-02D	H-29	08/09/16 10:35 AM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-29	08/09/16 10:35 AM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-29	08/09/16 10:35 AM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	H-29	08/09/16 10:35 AM	Aqueous	M2540C	TDS Preparation	08/15/16 03:45 PM	76803
1608133-03A	H-31	08/09/16 11:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-31	08/09/16 11:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-31	08/09/16 11:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-31	08/09/16 11:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-03D	H-31	08/09/16 11:50 AM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-31	08/09/16 11:50 AM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-31	08/09/16 11:50 AM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	H-31	08/09/16 11:50 AM	Aqueous	M2540C	TDS Preparation	08/15/16 03:45 PM	76803
1608133-04A	H-30	08/09/16 12:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-30	08/09/16 12:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-30	08/09/16 12:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-30	08/09/16 12:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-04D	H-30	08/09/16 12:45 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1608133-04D	H-30	08/09/16 12:45 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-30	08/09/16 12:45 PM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	H-30	08/09/16 12:45 PM	Aqueous	M2540C	TDS Preparation	08/15/16 03:45 PM	76803
1608133-05A	H-32	08/09/16 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-32	08/09/16 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-32	08/09/16 01:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-32	08/09/16 01:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-05D	H-32	08/09/16 01:50 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-32	08/09/16 01:50 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-32	08/09/16 01:50 PM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	H-32	08/09/16 01:50 PM	Aqueous	M2540C	TDS Preparation	08/15/16 03:45 PM	76803
1608133-06A	H-27	08/09/16 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-27	08/09/16 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-27	08/09/16 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-27	08/09/16 02:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-06D	H-27	08/09/16 02:50 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-27	08/09/16 02:50 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-27	08/09/16 02:50 PM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	H-27	08/09/16 02:50 PM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-07A	H-33	08/09/16 03:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-33	08/09/16 03:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-33	08/09/16 03:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-33	08/09/16 03:55 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-07D	H-33	08/09/16 03:55 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-33	08/09/16 03:55 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-33	08/09/16 03:55 PM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	H-33	08/09/16 03:55 PM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-08A	H-26	08/09/16 04:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1608133-08A	H-26	08/09/16 04:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-26	08/09/16 04:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	H-26	08/09/16 04:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-08D	H-26	08/09/16 04:45 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-26	08/09/16 04:45 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	H-26	08/09/16 04:45 PM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	H-26	08/09/16 04:45 PM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-09A	DUP-01	08/09/16 02:38 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	DUP-01	08/09/16 02:38 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	DUP-01	08/09/16 02:38 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	DUP-01	08/09/16 02:38 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-09D	DUP-01	08/09/16 02:38 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	DUP-01	08/09/16 02:38 PM	Aqueous	E300	Anion Preparation	08/15/16 10:13 AM	76808
	DUP-01	08/09/16 02:38 PM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	DUP-01	08/09/16 02:38 PM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-10A	PDP-25	08/10/16 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-25	08/10/16 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-25	08/10/16 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-25	08/10/16 01:30 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/17/16 09:07 AM	76835
1608133-10D	PDP-25	08/10/16 01:30 PM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	PDP-25	08/10/16 01:30 PM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	PDP-25	08/10/16 01:30 PM	Aqueous	M4500-H+ B	pH Preparation	08/16/16 08:41 AM	76818
	PDP-25	08/10/16 01:30 PM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-11A	PDP-24	08/10/16 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-24	08/10/16 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-24	08/10/16 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-24	08/10/16 11:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-24	08/10/16 11:00 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1608133-11D	PDP-24	08/10/16 11:00 AM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	PDP-24	08/10/16 11:00 AM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	PDP-24	08/10/16 11:00 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	PDP-24	08/10/16 11:00 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-12A	MW-17A	08/10/16 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	MW-17A	08/10/16 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	MW-17A	08/10/16 10:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-12D	MW-17A	08/10/16 10:20 AM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	MW-17A	08/10/16 10:20 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	MW-17A	08/10/16 10:20 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-13A	PDP-23	08/10/16 09:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-23	08/10/16 09:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	PDP-23	08/10/16 09:10 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-13D	PDP-23	08/10/16 09:10 AM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	PDP-23	08/10/16 09:10 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	PDP-23	08/10/16 09:10 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-14A	MW-19	08/10/16 03:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	MW-19	08/10/16 03:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	MW-19	08/10/16 03:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-14D	MW-19	08/10/16 03:00 PM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	MW-19	08/10/16 03:00 PM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	MW-19	08/10/16 03:00 PM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-15A	MW-20A	08/10/16 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	MW-20A	08/10/16 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	MW-20A	08/10/16 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/16/16 07:58 AM	76817
	MW-20A	08/10/16 02:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-15D	MW-20A	08/10/16 02:10 PM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	MW-20A	08/10/16 02:10 PM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1608133-15D	MW-20A	08/10/16 02:10 PM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-16A	PDP-22	08/10/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	PDP-22	08/10/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	PDP-22	08/10/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	PDP-22	08/10/16 09:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-16D	PDP-22	08/10/16 09:20 AM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	PDP-22	08/10/16 09:20 AM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	PDP-22	08/10/16 09:20 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	PDP-22	08/10/16 09:20 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-17A	PDP-26	08/10/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	PDP-26	08/10/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	PDP-26	08/10/16 10:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-17D	PDP-26	08/10/16 10:30 AM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	PDP-26	08/10/16 10:30 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	PDP-26	08/10/16 10:30 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-18A	MW-18A	08/10/16 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	MW-18A	08/10/16 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	MW-18A	08/10/16 11:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
	MW-18A	08/10/16 11:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-18D	MW-18A	08/10/16 11:30 AM	Aqueous	E300	Anion Preparation	08/16/16 09:28 AM	76820
	MW-18A	08/10/16 11:30 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	MW-18A	08/10/16 11:30 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-19A	EB-1	08/10/16 11:45 AM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	EB-1	08/10/16 11:45 AM	Equip Blank	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	EB-1	08/10/16 11:45 AM	Equip Blank	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-19D	EB-1	08/10/16 11:45 AM	Equip Blank	E300	Anion Preparation	08/17/16 09:55 AM	76838
	EB-1	08/10/16 11:45 AM	Equip Blank	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	EB-1	08/10/16 11:45 AM	Equip Blank	M2540C	TDS Preparation	08/16/16 02:51 PM	76831

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1608133-20A	BMW-11AR	08/11/16 08:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-11AR	08/11/16 08:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-11AR	08/11/16 08:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-11AR	08/11/16 08:25 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-20D	BMW-11AR	08/11/16 08:25 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-11AR	08/11/16 08:25 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-11AR	08/11/16 08:25 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	BMW-11AR	08/11/16 08:25 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-21A	BMW-19	08/11/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-19	08/11/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-19	08/11/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-19	08/11/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-19	08/11/16 09:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-21D	BMW-19	08/11/16 09:20 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-19	08/11/16 09:20 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-19	08/11/16 09:20 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	BMW-19	08/11/16 09:20 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-22A	BMW-18	08/11/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-18	08/11/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:54 AM	76893
	BMW-18	08/11/16 10:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-22D	BMW-18	08/11/16 10:15 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-18	08/11/16 10:15 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	BMW-18	08/11/16 10:15 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-23A	BMW-20	08/11/16 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-20	08/11/16 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-20	08/11/16 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-20	08/11/16 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-20	08/11/16 10:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1608133-23D	BMW-20	08/11/16 10:50 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-20	08/11/16 10:50 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-20	08/11/16 10:50 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	BMW-20	08/11/16 10:50 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-24A	BMW-24	08/11/16 08:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-24	08/11/16 08:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-24	08/11/16 08:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-24	08/11/16 08:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-24	08/11/16 08:50 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-24D	BMW-24	08/11/16 08:50 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-24	08/11/16 08:50 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-24	08/11/16 08:50 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	BMW-24	08/11/16 08:50 AM	Aqueous	M2540C	TDS Preparation	08/16/16 02:51 PM	76831
1608133-25A	BMW-23	08/11/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-23	08/11/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-23	08/11/16 09:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-23	08/11/16 09:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-25D	BMW-23	08/11/16 09:20 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-23	08/11/16 09:20 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-23	08/11/16 09:20 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	BMW-23	08/11/16 09:20 AM	Aqueous	M2540C	TDS Preparation	08/18/16 08:44 AM	76858
1608133-26A	BMW-22	08/11/16 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-22	08/11/16 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-22	08/11/16 10:00 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-22	08/11/16 10:00 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-26D	BMW-22	08/11/16 10:00 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-22	08/11/16 10:00 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-22	08/11/16 10:00 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1608133-26D	BMW-22	08/11/16 10:00 AM	Aqueous	M2540C	TDS Preparation	08/18/16 08:44 AM	76858
1608133-27A	BMW-21	08/11/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-21	08/11/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-21	08/11/16 10:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/22/16 08:57 AM	76895
	BMW-21	08/11/16 10:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/23/16 08:44 AM	76918
1608133-27D	BMW-21	08/11/16 10:30 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-21	08/11/16 10:30 AM	Aqueous	E300	Anion Preparation	08/17/16 09:55 AM	76838
	BMW-21	08/11/16 10:30 AM	Aqueous	M4500-H+ B	pH Preparation	08/17/16 10:19 AM	76839
	BMW-21	08/11/16 10:30 AM	Aqueous	M2540C	TDS Preparation	08/18/16 08:44 AM	76858

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1608133-01A	H-28	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:36 AM	CETAC2_HG_160818 B
	H-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76816	1	08/17/16 02:05 PM	ICP-MS4_160817A
	H-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76816	50	08/18/16 03:36 PM	ICP-MS4_160818B
1608133-01D	H-28	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 12:24 PM	IC4_160815A
	H-28	Aqueous	E300	Anions by IC method - Water	76808	10	08/15/16 03:58 PM	IC4_160815A
	H-28	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:17 AM	TITRATOR_160816A
	H-28	Aqueous	M2540C	Total Dissolved Solids	76803	1	08/16/16 08:42 AM	WC_160815A
1608133-02A	H-29	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:43 AM	CETAC2_HG_160818 B
	H-29	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76816	1	08/17/16 02:07 PM	ICP-MS4_160817A
	H-29	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76816	10	08/18/16 03:38 PM	ICP-MS4_160818B
	H-29	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76816	1	08/18/16 03:40 PM	ICP-MS4_160818B
1608133-02D	H-29	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 12:39 PM	IC4_160815A
	H-29	Aqueous	E300	Anions by IC method - Water	76808	10	08/15/16 04:28 PM	IC4_160815A
	H-29	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:20 AM	TITRATOR_160816A
	H-29	Aqueous	M2540C	Total Dissolved Solids	76803	1	08/16/16 08:42 AM	WC_160815A
1608133-03A	H-31	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:45 AM	CETAC2_HG_160818 B
	H-31	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 05:50 PM	ICP-MS4_160819A
	H-31	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	100	08/22/16 02:05 PM	ICP-MS4_160822B
	H-31	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 03:22 PM	ICP-MS4_160822B
1608133-03D	H-31	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 12:54 PM	IC4_160815A
	H-31	Aqueous	E300	Anions by IC method - Water	76808	100	08/15/16 04:43 PM	IC4_160815A
	H-31	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:23 AM	TITRATOR_160816A
	H-31	Aqueous	M2540C	Total Dissolved Solids	76803	1	08/16/16 08:42 AM	WC_160815A
1608133-04A	H-30	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:48 AM	CETAC2_HG_160818 B
	H-30	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 05:52 PM	ICP-MS4_160819A
	H-30	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 03:24 PM	ICP-MS4_160822B

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Client: Pastor, Behling & Wheeler
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ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1608133-04A	H-30	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	10	08/22/16 02:07 PM	ICP-MS4_160822B
1608133-04D	H-30	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 01:09 PM	IC4_160815A
	H-30	Aqueous	E300	Anions by IC method - Water	76808	10	08/15/16 04:58 PM	IC4_160815A
	H-30	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:25 AM	TITRATOR_160816A
	H-30	Aqueous	M2540C	Total Dissolved Solids	76803	1	08/16/16 08:42 AM	WC_160815A
1608133-05A	H-32	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:50 AM	CETAC2_HG_160818B
	H-32	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 05:54 PM	ICP-MS4_160819A
	H-32	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	10	08/22/16 02:09 PM	ICP-MS4_160822B
	H-32	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 03:26 PM	ICP-MS4_160822B
1608133-05D	H-32	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 01:24 PM	IC4_160815A
	H-32	Aqueous	E300	Anions by IC method - Water	76808	10	08/15/16 05:28 PM	IC4_160815A
	H-32	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:27 AM	TITRATOR_160816A
	H-32	Aqueous	M2540C	Total Dissolved Solids	76803	1	08/16/16 08:42 AM	WC_160815A
1608133-06A	H-27	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:52 AM	CETAC2_HG_160818B
	H-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:10 PM	ICP-MS4_160819A
	H-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	10	08/22/16 02:11 PM	ICP-MS4_160822B
	H-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 02:59 PM	ICP-MS4_160822B
1608133-06D	H-27	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 01:39 PM	IC4_160815A
	H-27	Aqueous	E300	Anions by IC method - Water	76808	10	08/15/16 05:43 PM	IC4_160815A
	H-27	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:29 AM	TITRATOR_160816A
	H-27	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-07A	H-33	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:54 AM	CETAC2_HG_160818B
	H-33	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 02:13 PM	ICP-MS4_160822B
	H-33	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/24/16 05:45 PM	ICP-MS3_160824B
	H-33	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:12 PM	ICP-MS4_160819A
1608133-07D	H-33	Aqueous	E300	Anions by IC method - Water	76808	10	08/15/16 05:58 PM	IC4_160815A

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1608133-07D	H-33	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 01:54 PM	IC4_160815A
	H-33	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:32 AM	TITRATOR_160816A
	H-33	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-08A	H-26	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:57 AM	CETAC2_HG_160818B
	H-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/24/16 05:51 PM	ICP-MS3_160824B
	H-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:14 PM	ICP-MS4_160819A
	H-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 02:15 PM	ICP-MS4_160822B
1608133-08D	H-26	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 02:09 PM	IC4_160815A
	H-26	Aqueous	E300	Anions by IC method - Water	76808	10	08/15/16 07:28 PM	IC4_160815A
	H-26	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:34 AM	TITRATOR_160816A
	H-26	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-09A	DUP-01	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 10:59 AM	CETAC2_HG_160818B
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	10	08/22/16 02:17 PM	ICP-MS4_160822B
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 03:28 PM	ICP-MS4_160822B
	DUP-01	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:17 PM	ICP-MS4_160819A
1608133-09D	DUP-01	Aqueous	E300	Anions by IC method - Water	76808	1	08/15/16 02:24 PM	IC4_160815A
	DUP-01	Aqueous	E300	Anions by IC method - Water	76808	10	08/15/16 07:43 PM	IC4_160815A
	DUP-01	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:36 AM	TITRATOR_160816A
	DUP-01	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-10A	PDP-25	Aqueous	SW7470A	Mercury Total: Aqueous	76835	1	08/18/16 11:01 AM	CETAC2_HG_160818B
	PDP-25	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:19 PM	ICP-MS4_160819A
	PDP-25	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	10	08/22/16 02:19 PM	ICP-MS4_160822B
	PDP-25	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 03:01 PM	ICP-MS4_160822B
1608133-10D	PDP-25	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 11:27 AM	IC4_160816A
	PDP-25	Aqueous	E300	Anions by IC method - Water	76820	10	08/16/16 02:52 PM	IC4_160816A
	PDP-25	Aqueous	M4500-H+ B	pH	76818	1	08/16/16 10:53 AM	TITRATOR_160816A

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1608133-10D	PDP-25	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-11A	PDP-24	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:23 AM	CETAC2_HG_160824 B
	PDP-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/24/16 05:57 PM	ICP-MS3_160824B
	PDP-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:21 PM	ICP-MS4_160819A
	PDP-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	10	08/22/16 02:21 PM	ICP-MS4_160822B
	PDP-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 03:30 PM	ICP-MS4_160822B
1608133-11D	PDP-24	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 11:42 AM	IC4_160816A
	PDP-24	Aqueous	E300	Anions by IC method - Water	76820	10	08/16/16 03:37 PM	IC4_160816A
	PDP-24	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:15 AM	TITRATOR_160817B
	PDP-24	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-12A	MW-17A	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:26 AM	CETAC2_HG_160824 B
	MW-17A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:23 PM	ICP-MS4_160819A
	MW-17A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 02:51 PM	ICP-MS4_160822B
1608133-12D	MW-17A	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 11:57 AM	IC4_160816A
	MW-17A	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:19 AM	TITRATOR_160817B
	MW-17A	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-13A	PDP-23	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:28 AM	CETAC2_HG_160824 B
	PDP-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:25 PM	ICP-MS4_160819A
	PDP-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 02:53 PM	ICP-MS4_160822B
1608133-13D	PDP-23	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 12:12 PM	IC4_160816A
	PDP-23	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:21 AM	TITRATOR_160817B
	PDP-23	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-14A	MW-19	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:30 AM	CETAC2_HG_160824 B
	MW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 02:55 PM	ICP-MS4_160822B
	MW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:27 PM	ICP-MS4_160819A
1608133-14D	MW-19	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 12:27 PM	IC4_160816A

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1608133-14D	MW-19	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:24 AM	TITRATOR_160817B
	MW-19	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-15A	MW-20A	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:32 AM	CETAC2_HG_160824B
	MW-20A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/19/16 06:29 PM	ICP-MS4_160819A
	MW-20A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/22/16 02:57 PM	ICP-MS4_160822B
	MW-20A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76817	1	08/26/16 12:27 PM	ICP-MS4_160826B
1608133-15D	MW-20A	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 12:42 PM	IC4_160816A
	MW-20A	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:26 AM	TITRATOR_160817B
	MW-20A	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-16A	PDP-22	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:35 AM	CETAC2_HG_160824B
	PDP-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/24/16 04:31 PM	ICP-MS4_160824B
	PDP-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/23/16 12:40 PM	ICP-MS4_160823B
	PDP-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	10	08/24/16 03:46 PM	ICP-MS4_160824B
1608133-16D	PDP-22	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 12:57 PM	IC4_160816A
	PDP-22	Aqueous	E300	Anions by IC method - Water	76820	10	08/16/16 03:52 PM	IC4_160816A
	PDP-22	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:28 AM	TITRATOR_160817B
	PDP-22	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-17A	PDP-26	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:46 AM	CETAC2_HG_160824B
	PDP-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/23/16 01:14 PM	ICP-MS4_160823B
	PDP-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/24/16 04:33 PM	ICP-MS4_160824B
1608133-17D	PDP-26	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 01:12 PM	IC4_160816A
	PDP-26	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:31 AM	TITRATOR_160817B
	PDP-26	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-18A	MW-18A	Aqueous	SW7470A	Mercury Total: Aqueous	76918	20	08/24/16 11:31 AM	CETAC2_HG_160824B
	MW-18A	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:48 AM	CETAC2_HG_160824B
	MW-18A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/23/16 01:16 PM	ICP-MS4_160823B

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1608133-18A	MW-18A	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/24/16 05:29 PM	ICP-MS4_160824B
1608133-18D	MW-18A	Aqueous	E300	Anions by IC method - Water	76820	1	08/16/16 01:27 PM	IC4_160816A
	MW-18A	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:34 AM	TITRATOR_160817B
	MW-18A	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-19A	EB-1	Equip Blank	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:53 AM	CETAC2_HG_160824B
	EB-1	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/23/16 01:18 PM	ICP-MS4_160823B
	EB-1	Equip Blank	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/24/16 05:31 PM	ICP-MS4_160824B
1608133-19D	EB-1	Equip Blank	E300	Anions by IC method - Water	76838	1	08/17/16 11:24 AM	IC4_160817A
	EB-1	Equip Blank	M4500-H+ B	pH	76839	1	08/17/16 11:36 AM	TITRATOR_160817B
	EB-1	Equip Blank	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-20A	BMW-11AR	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 10:56 AM	CETAC2_HG_160824B
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	10	08/24/16 05:33 PM	ICP-MS4_160824B
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/24/16 05:35 PM	ICP-MS4_160824B
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/23/16 01:20 PM	ICP-MS4_160823B
1608133-20D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	76838	1	08/17/16 11:39 AM	IC4_160817A
	BMW-11AR	Aqueous	E300	Anions by IC method - Water	76838	10	08/17/16 02:41 PM	IC4_160817A
	BMW-11AR	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:40 AM	TITRATOR_160817B
	BMW-11AR	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-21A	BMW-19	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 11:04 AM	CETAC2_HG_160824B
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	50	08/25/16 02:49 PM	ICP-MS4_160825A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/23/16 01:22 PM	ICP-MS4_160823B
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	10	08/24/16 05:37 PM	ICP-MS4_160824B
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/24/16 05:39 PM	ICP-MS4_160824B
1608133-21D	BMW-19	Aqueous	E300	Anions by IC method - Water	76838	100	08/17/16 02:56 PM	IC4_160817A
	BMW-19	Aqueous	E300	Anions by IC method - Water	76838	1	08/17/16 11:54 AM	IC4_160817A
	BMW-19	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:42 AM	TITRATOR_160817B

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1608133-21D	BMW-19	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-22A	BMW-18	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 11:06 AM	CETAC2_HG_160824 B
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/23/16 01:24 PM	ICP-MS4_160823B
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76893	1	08/24/16 05:41 PM	ICP-MS4_160824B
1608133-22D	BMW-18	Aqueous	E300	Anions by IC method - Water	76838	1	08/17/16 12:09 PM	IC4_160817A
	BMW-18	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:46 AM	TITRATOR_160817B
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-23A	BMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 11:08 AM	CETAC2_HG_160824 B
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	10	08/24/16 07:14 PM	ICP-MS4_160824B
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/24/16 08:48 PM	ICP-MS4_160824B
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/23/16 02:11 PM	ICP-MS4_160823B
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/25/16 02:51 PM	ICP-MS4_160825A
1608133-23D	BMW-20	Aqueous	E300	Anions by IC method - Water	76838	1	08/17/16 12:24 PM	IC4_160817A
	BMW-20	Aqueous	E300	Anions by IC method - Water	76838	10	08/17/16 03:11 PM	IC4_160817A
	BMW-20	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:48 AM	TITRATOR_160817B
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-24A	BMW-24	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 11:10 AM	CETAC2_HG_160824 B
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/23/16 02:13 PM	ICP-MS4_160823B
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	10	08/24/16 07:16 PM	ICP-MS4_160824B
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/24/16 08:50 PM	ICP-MS4_160824B
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/25/16 02:53 PM	ICP-MS4_160825A
1608133-24D	BMW-24	Aqueous	E300	Anions by IC method - Water	76838	100	08/17/16 03:26 PM	IC4_160817A
	BMW-24	Aqueous	E300	Anions by IC method - Water	76838	1	08/17/16 12:39 PM	IC4_160817A
	BMW-24	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:50 AM	TITRATOR_160817B
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	76831	1	08/17/16 08:42 AM	WC_160816D
1608133-25A	BMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 11:13 AM	CETAC2_HG_160824 B

Lab Order: 1608133
Client: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1608133-25A	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/23/16 02:15 PM	ICP-MS4_160823B
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	10	08/24/16 07:18 PM	ICP-MS4_160824B
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/25/16 02:55 PM	ICP-MS4_160825A
1608133-25D	BMW-23	Aqueous	E300	Anions by IC method - Water	76838	1	08/17/16 12:54 PM	IC4_160817A
	BMW-23	Aqueous	E300	Anions by IC method - Water	76838	10	08/17/16 03:41 PM	IC4_160817A
	BMW-23	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:52 AM	TITRATOR_160817B
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	76858	1	08/22/16 08:40 AM	WC_160818B
1608133-26A	BMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 11:15 AM	CETAC2_HG_160824B
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	10	08/24/16 07:20 PM	ICP-MS4_160824B
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/25/16 02:57 PM	ICP-MS4_160825A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/23/16 02:17 PM	ICP-MS4_160823B
1608133-26D	BMW-22	Aqueous	E300	Anions by IC method - Water	76838	100	08/17/16 03:56 PM	IC4_160817A
	BMW-22	Aqueous	E300	Anions by IC method - Water	76838	1	08/17/16 01:09 PM	IC4_160817A
	BMW-22	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:53 AM	TITRATOR_160817B
	BMW-22	Aqueous	M2540C	Total Dissolved Solids	76858	1	08/22/16 08:40 AM	WC_160818B
1608133-27A	BMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	76918	1	08/24/16 11:17 AM	CETAC2_HG_160824B
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/23/16 02:19 PM	ICP-MS4_160823B
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	10	08/24/16 07:22 PM	ICP-MS4_160824B
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	76895	1	08/25/16 02:58 PM	ICP-MS4_160825A
1608133-27D	BMW-21	Aqueous	E300	Anions by IC method - Water	76838	1	08/17/16 01:24 PM	IC4_160817A
	BMW-21	Aqueous	E300	Anions by IC method - Water	76838	100	08/17/16 04:11 PM	IC4_160817A
	BMW-21	Aqueous	M4500-H+ B	pH	76839	1	08/17/16 11:56 AM	TITRATOR_160817B
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	76858	1	08/22/16 08:40 AM	WC_160818B

DHL Analytical, Inc.

Date: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: H-28
Lab ID: 1608133-01
Collection Date: 08/09/16 09:30 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:36 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/17/16 02:05 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/17/16 02:05 PM
Barium	0.0155	0.00300	0.0100		mg/L	1	08/17/16 02:05 PM
Beryllium	0.00275	0.000300	0.00100		mg/L	1	08/17/16 02:05 PM
Boron	9.29	0.500	1.50		mg/L	50	08/18/16 03:36 PM
Cadmium	0.00160	0.000300	0.00100		mg/L	1	08/17/16 02:05 PM
Calcium	116	5.00	15.0		mg/L	50	08/18/16 03:36 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/17/16 02:05 PM
Cobalt	0.195	0.00300	0.00500		mg/L	1	08/17/16 02:05 PM
Lead	0.000774	0.000300	0.00100	J	mg/L	1	08/17/16 02:05 PM
Lithium	0.155	0.00500	0.0100		mg/L	1	08/17/16 02:05 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/17/16 02:05 PM
Selenium	0.00286	0.00200	0.00500	J	mg/L	1	08/17/16 02:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/17/16 02:05 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	98.4	3.00	10.0		mg/L	10	08/15/16 03:58 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/15/16 12:24 PM
Sulfate	1080	10.0	30.0		mg/L	10	08/15/16 03:58 PM
PH		M4500-H+ B		Analyst: BJT			
pH	5.29	0	0		pH Units@19.6°C	1	08/16/16 10:17 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2100	50.0	50.0		mg/L	1	08/16/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: H-29
Lab ID: 1608133-02
Collection Date: 08/09/16 10:35 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:43 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/17/16 02:07 PM
Arsenic	0.00995	0.00200	0.00500		mg/L	1	08/17/16 02:07 PM
Barium	0.315	0.00300	0.0100		mg/L	1	08/17/16 02:07 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/17/16 02:07 PM
Boron	0.172	0.0100	0.0300		mg/L	1	08/18/16 03:40 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/17/16 02:07 PM
Calcium	64.6	1.00	3.00		mg/L	10	08/18/16 03:38 PM
Chromium	0.00297	0.00200	0.00500	J	mg/L	1	08/17/16 02:07 PM
Cobalt	0.00473	0.00300	0.00500	J	mg/L	1	08/17/16 02:07 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/17/16 02:07 PM
Lithium	0.0143	0.00500	0.0100		mg/L	1	08/17/16 02:07 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/17/16 02:07 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/17/16 02:07 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/17/16 02:07 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	53.1	3.00	10.0		mg/L	10	08/15/16 04:28 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/15/16 12:39 PM
Sulfate	124	1.00	3.00		mg/L	1	08/15/16 12:39 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.75	0	0		pH Units@19.7°C	1	08/16/16 10:20 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	575	10.0	10.0		mg/L	1	08/16/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: H-31
Lab ID: 1608133-03
Collection Date: 08/09/16 11:50 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:45 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 05:50 PM
Arsenic	0.00886	0.00200	0.00500		mg/L	1	08/19/16 05:50 PM
Barium	0.0191	0.00300	0.0100		mg/L	1	08/19/16 05:50 PM
Beryllium	0.00734	0.000300	0.00100		mg/L	1	08/22/16 03:22 PM
Boron	24.1	1.00	3.00		mg/L	100	08/22/16 02:05 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 05:50 PM
Calcium	251	10.0	30.0		mg/L	100	08/22/16 02:05 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 05:50 PM
Cobalt	0.286	0.00300	0.00500		mg/L	1	08/19/16 05:50 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 05:50 PM
Lithium	0.170	0.00500	0.0100		mg/L	1	08/22/16 03:22 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 05:50 PM
Selenium	0.0202	0.00200	0.00500		mg/L	1	08/19/16 05:50 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 05:50 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	217	30.0	100		mg/L	100	08/15/16 04:43 PM
Fluoride	0.216	0.100	0.400	J	mg/L	1	08/15/16 12:54 PM
Sulfate	2730	100	300		mg/L	100	08/15/16 04:43 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.07	0	0		pH Units@19.7°C	1	08/16/16 10:23 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	4440	50.0	50.0		mg/L	1	08/16/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: H-30
Lab ID: 1608133-04
Collection Date: 08/09/16 12:45 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:48 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 05:52 PM
Arsenic	0.00447	0.00200	0.00500	J	mg/L	1	08/19/16 05:52 PM
Barium	0.0233	0.00300	0.0100		mg/L	1	08/19/16 05:52 PM
Beryllium	0.00483	0.000300	0.00100		mg/L	1	08/22/16 03:24 PM
Boron	6.75	0.100	0.300		mg/L	10	08/22/16 02:07 PM
Cadmium	0.000380	0.000300	0.00100	J	mg/L	1	08/19/16 05:52 PM
Calcium	139	1.00	3.00		mg/L	10	08/22/16 02:07 PM
Chromium	0.00282	0.00200	0.00500	J	mg/L	1	08/19/16 05:52 PM
Cobalt	0.162	0.00300	0.00500		mg/L	1	08/19/16 05:52 PM
Lead	0.00363	0.000300	0.00100		mg/L	1	08/19/16 05:52 PM
Lithium	0.0819	0.00500	0.0100		mg/L	1	08/22/16 03:24 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 05:52 PM
Selenium	0.0195	0.00200	0.00500		mg/L	1	08/19/16 05:52 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 05:52 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	109	3.00	10.0		mg/L	10	08/15/16 04:58 PM
Fluoride	0.152	0.100	0.400	J	mg/L	1	08/15/16 01:09 PM
Sulfate	1230	10.0	30.0		mg/L	10	08/15/16 04:58 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	5.22	0	0		pH Units@19.7°C	1	08/16/16 10:25 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2160	50.0	50.0		mg/L	1	08/16/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: H-32
Lab ID: 1608133-05
Collection Date: 08/09/16 01:50 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:50 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 05:54 PM
Arsenic	0.00344	0.00200	0.00500	J	mg/L	1	08/19/16 05:54 PM
Barium	0.0234	0.00300	0.0100		mg/L	1	08/19/16 05:54 PM
Beryllium	0.00548	0.000300	0.00100		mg/L	1	08/22/16 03:26 PM
Boron	1.69	0.100	0.300		mg/L	10	08/22/16 02:09 PM
Cadmium	0.000713	0.000300	0.00100	J	mg/L	1	08/19/16 05:54 PM
Calcium	45.4	1.00	3.00		mg/L	10	08/22/16 02:09 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 05:54 PM
Cobalt	0.190	0.00300	0.00500		mg/L	1	08/19/16 05:54 PM
Lead	0.00115	0.000300	0.00100		mg/L	1	08/19/16 05:54 PM
Lithium	0.0774	0.00500	0.0100		mg/L	1	08/22/16 03:26 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 05:54 PM
Selenium	0.00281	0.00200	0.00500	J	mg/L	1	08/19/16 05:54 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 05:54 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	132	3.00	10.0		mg/L	10	08/15/16 05:28 PM
Fluoride	0.680	0.100	0.400		mg/L	1	08/15/16 01:24 PM
Sulfate	342	10.0	30.0		mg/L	10	08/15/16 05:28 PM
PH		M4500-H+ B		Analyst: BJT			
pH	5.46	0	0		pH Units@20°C	1	08/16/16 10:27 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	839	10.0	10.0		mg/L	1	08/16/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: H-27
Lab ID: 1608133-06
Collection Date: 08/09/16 02:50 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:52 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:10 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:10 PM
Barium	0.0241	0.00300	0.0100		mg/L	1	08/19/16 06:10 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/22/16 02:59 PM
Boron	0.462	0.0100	0.0300		mg/L	1	08/22/16 02:59 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:10 PM
Calcium	54.3	1.00	3.00		mg/L	10	08/22/16 02:11 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:10 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/19/16 06:10 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:10 PM
Lithium	0.0616	0.00500	0.0100		mg/L	1	08/22/16 02:59 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:10 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:10 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:10 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	124	3.00	10.0		mg/L	10	08/15/16 05:43 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/15/16 01:39 PM
Sulfate	365	10.0	30.0		mg/L	10	08/15/16 05:43 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.10	0	0		pH Units@20.2°C	1	08/16/16 10:29 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	854	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: H-33
Lab ID: 1608133-07
Collection Date: 08/09/16 03:55 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:54 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:12 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:12 PM
Barium	0.0424	0.00300	0.0100		mg/L	1	08/19/16 06:12 PM
Beryllium	0.000519	0.000300	0.00100	J	mg/L	1	08/24/16 05:45 PM
Boron	0.0431	0.0100	0.0300		mg/L	1	08/22/16 02:13 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:12 PM
Calcium	11.2	0.100	0.300		mg/L	1	08/19/16 06:12 PM
Chromium	0.00291	0.00200	0.00500	J	mg/L	1	08/19/16 06:12 PM
Cobalt	0.0284	0.00300	0.00500		mg/L	1	08/19/16 06:12 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:12 PM
Lithium	0.102	0.00500	0.0100		mg/L	1	08/22/16 02:13 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:12 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:12 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:12 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	64.9	3.00	10.0		mg/L	10	08/15/16 05:58 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/15/16 01:54 PM
Sulfate	120	10.0	30.0		mg/L	10	08/15/16 05:58 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	6.04	0	0		pH Units@20.5°C	1	08/16/16 10:32 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	442	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: H-26
Lab ID: 1608133-08
Collection Date: 08/09/16 04:45 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:57 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:14 PM
Arsenic	0.00290	0.00200	0.00500	J	mg/L	1	08/19/16 06:14 PM
Barium	0.0431	0.00300	0.0100		mg/L	1	08/19/16 06:14 PM
Beryllium	0.00136	0.000300	0.00100		mg/L	1	08/24/16 05:51 PM
Boron	0.569	0.0100	0.0300		mg/L	1	08/22/16 02:15 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:14 PM
Calcium	14.0	0.100	0.300		mg/L	1	08/19/16 06:14 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:14 PM
Cobalt	0.0352	0.00300	0.00500		mg/L	1	08/19/16 06:14 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:14 PM
Lithium	0.0155	0.00500	0.0100		mg/L	1	08/22/16 02:15 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:14 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:14 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:14 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	70.0	3.00	10.0		mg/L	10	08/15/16 07:28 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/15/16 02:09 PM
Sulfate	90.9	1.00	3.00		mg/L	1	08/15/16 02:09 PM
PH		M4500-H+ B		Analyst: BJT			
pH	5.60	0	0		pH Units@20.7°C	1	08/16/16 10:34 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	354	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: DUP-01
Lab ID: 1608133-09
Collection Date: 08/09/16 02:38 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 10:59 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:17 PM
Arsenic	0.00437	0.00200	0.00500	J	mg/L	1	08/19/16 06:17 PM
Barium	0.0212	0.00300	0.0100		mg/L	1	08/19/16 06:17 PM
Beryllium	0.00543	0.000300	0.00100		mg/L	1	08/22/16 03:28 PM
Boron	7.04	0.100	0.300		mg/L	10	08/22/16 02:17 PM
Cadmium	0.000367	0.000300	0.00100	J	mg/L	1	08/19/16 06:17 PM
Calcium	138	1.00	3.00		mg/L	10	08/22/16 02:17 PM
Chromium	0.00210	0.00200	0.00500	J	mg/L	1	08/19/16 06:17 PM
Cobalt	0.165	0.00300	0.00500		mg/L	1	08/19/16 06:17 PM
Lead	0.00341	0.000300	0.00100		mg/L	1	08/19/16 06:17 PM
Lithium	0.0809	0.00500	0.0100		mg/L	1	08/22/16 03:28 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:17 PM
Selenium	0.0166	0.00200	0.00500		mg/L	1	08/19/16 06:17 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:17 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	112	3.00	10.0		mg/L	10	08/15/16 07:43 PM
Fluoride	0.180	0.100	0.400	J	mg/L	1	08/15/16 02:24 PM
Sulfate	1260	10.0	30.0		mg/L	10	08/15/16 07:43 PM
PH		M4500-H+ B		Analyst: BJT			
pH	5.11	0	0		pH Units@21°C	1	08/16/16 10:36 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2080	50.0	50.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: PDP-25
Lab ID: 1608133-10
Collection Date: 08/10/16 01:30 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
		SW7470A				Analyst: AH	
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/18/16 11:01 AM
TRACE METALS: ICP-MS - WATER							
		SW6020A				Analyst: CVD	
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:19 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:19 PM
Barium	0.193	0.00300	0.0100		mg/L	1	08/19/16 06:19 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/22/16 03:01 PM
Boron	0.119	0.0100	0.0300		mg/L	1	08/22/16 03:01 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:19 PM
Calcium	37.7	1.00	3.00		mg/L	10	08/22/16 02:19 PM
Chromium	0.00527	0.00200	0.00500		mg/L	1	08/19/16 06:19 PM
Cobalt	0.0109	0.00300	0.00500		mg/L	1	08/19/16 06:19 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:19 PM
Lithium	0.120	0.00500	0.0100		mg/L	1	08/22/16 03:01 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:19 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:19 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:19 PM
ANIONS BY IC METHOD - WATER							
		E300				Analyst: AV	
Chloride	136	3.00	10.0		mg/L	10	08/16/16 02:52 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/16/16 11:27 AM
Sulfate	110	1.00	3.00		mg/L	1	08/16/16 11:27 AM
PH							
		M4500-H+ B				Analyst: BJT	
pH	6.19	0	0		pH Units@17.4°C	1	08/16/16 10:53 AM
TOTAL DISSOLVED SOLIDS							
		M2540C				Analyst: AJH	
Total Dissolved Solids (Residue, Filterable)	612	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: PDP-24
Lab ID: 1608133-11
Collection Date: 08/10/16 11:00 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	0.00214	0.0000800	0.000200		mg/L	1	08/24/16 10:23 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:21 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:21 PM
Barium	0.0206	0.00300	0.0100		mg/L	1	08/19/16 06:21 PM
Beryllium	0.00427	0.000300	0.00100		mg/L	1	08/22/16 03:30 PM
Boron	3.80	0.100	0.300		mg/L	10	08/22/16 02:21 PM
Cadmium	0.00185	0.000300	0.00100		mg/L	1	08/19/16 06:21 PM
Calcium	32.6	1.00	3.00		mg/L	10	08/22/16 02:21 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:21 PM
Cobalt	0.0826	0.00300	0.00500		mg/L	1	08/19/16 06:21 PM
Lead	0.00121	0.000300	0.00100		mg/L	1	08/19/16 06:21 PM
Lithium	0.0241	0.00500	0.0100		mg/L	1	08/22/16 03:30 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:21 PM
Selenium	0.00377	0.00200	0.00500	J	mg/L	1	08/19/16 06:21 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:21 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	21.4	0.300	1.00		mg/L	1	08/16/16 11:42 AM
Fluoride	0.693	0.100	0.400		mg/L	1	08/16/16 11:42 AM
Sulfate	432	10.0	30.0		mg/L	10	08/16/16 03:37 PM
PH		M4500-H+ B		Analyst: BJT			
pH	4.53	0	0		pH Units@20°C	1	08/17/16 11:15 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	747	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: MW-17A
Lab ID: 1608133-12
Collection Date: 08/10/16 10:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	0.000114	0.0000800	0.000200	J	mg/L	1	08/24/16 10:26 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:23 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:23 PM
Barium	0.108	0.00300	0.0100		mg/L	1	08/19/16 06:23 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/22/16 02:51 PM
Boron	0.410	0.0100	0.0300		mg/L	1	08/22/16 02:51 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:23 PM
Calcium	4.46	0.100	0.300		mg/L	1	08/19/16 06:23 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:23 PM
Cobalt	0.00795	0.00300	0.00500		mg/L	1	08/19/16 06:23 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:23 PM
Lithium	0.0153	0.00500	0.0100		mg/L	1	08/22/16 02:51 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:23 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:23 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:23 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	9.52	0.300	1.00		mg/L	1	08/16/16 11:57 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/16/16 11:57 AM
Sulfate	42.9	1.00	3.00		mg/L	1	08/16/16 11:57 AM
PH		M4500-H+ B		Analyst: BJT			
pH	5.57	0	0		pH Units@20°C	1	08/17/16 11:19 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	143	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: PDP-23
Lab ID: 1608133-13
Collection Date: 08/10/16 09:10 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
		SW7470A				Analyst: AH	
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 10:28 AM
TRACE METALS: ICP-MS - WATER							
		SW6020A				Analyst: CVD	
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:25 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:25 PM
Barium	0.0449	0.00300	0.0100		mg/L	1	08/19/16 06:25 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/22/16 02:53 PM
Boron	0.0357	0.0100	0.0300		mg/L	1	08/22/16 02:53 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:25 PM
Calcium	1.77	0.100	0.300		mg/L	1	08/19/16 06:25 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:25 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/19/16 06:25 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:25 PM
Lithium	0.0124	0.00500	0.0100		mg/L	1	08/22/16 02:53 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:25 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:25 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:25 PM
ANIONS BY IC METHOD - WATER							
		E300				Analyst: AV	
Chloride	6.61	0.300	1.00		mg/L	1	08/16/16 12:12 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/16/16 12:12 PM
Sulfate	2.37	1.00	3.00	J	mg/L	1	08/16/16 12:12 PM
PH							
		M4500-H+ B				Analyst: BJT	
pH	5.91	0	0		pH Units@20.1°C	1	08/17/16 11:21 AM
TOTAL DISSOLVED SOLIDS							
		M2540C				Analyst: AJH	
Total Dissolved Solids (Residue, Filterable)	99.0	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: MW-19
Lab ID: 1608133-14
Collection Date: 08/10/16 03:00 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 10:30 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:27 PM
Arsenic	0.00286	0.00200	0.00500	J	mg/L	1	08/19/16 06:27 PM
Barium	0.0188	0.00300	0.0100		mg/L	1	08/19/16 06:27 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/22/16 02:55 PM
Boron	0.0539	0.0100	0.0300		mg/L	1	08/22/16 02:55 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:27 PM
Calcium	8.62	0.100	0.300		mg/L	1	08/19/16 06:27 PM
Chromium	0.00346	0.00200	0.00500	J	mg/L	1	08/19/16 06:27 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/19/16 06:27 PM
Lead	0.000807	0.000300	0.00100	J	mg/L	1	08/19/16 06:27 PM
Lithium	0.0144	0.00500	0.0100		mg/L	1	08/22/16 02:55 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:27 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:27 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:27 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	30.8	0.300	1.00		mg/L	1	08/16/16 12:27 PM
Fluoride	0.152	0.100	0.400	J	mg/L	1	08/16/16 12:27 PM
Sulfate	31.6	1.00	3.00		mg/L	1	08/16/16 12:27 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.24	0	0		pH Units@20.1°C	1	08/17/16 11:24 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	323	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: MW-20A
Lab ID: 1608133-15
Collection Date: 08/10/16 02:10 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	0.000325	0.0000800	0.000200		mg/L	1	08/24/16 10:32 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/19/16 06:29 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:29 PM
Barium	0.0313	0.00300	0.0100		mg/L	1	08/19/16 06:29 PM
Beryllium	0.000502	0.000300	0.00100	J	mg/L	1	08/26/16 12:27 PM
Boron	0.123	0.0100	0.0300		mg/L	1	08/22/16 02:57 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/19/16 06:29 PM
Calcium	12.7	0.100	0.300		mg/L	1	08/19/16 06:29 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:29 PM
Cobalt	0.00427	0.00300	0.00500	J	mg/L	1	08/19/16 06:29 PM
Lead	0.00141	0.000300	0.00100		mg/L	1	08/19/16 06:29 PM
Lithium	0.0166	0.00500	0.0100		mg/L	1	08/22/16 02:57 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/19/16 06:29 PM
Selenium	0.00518	0.00200	0.00500		mg/L	1	08/19/16 06:29 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/19/16 06:29 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	11.2	0.300	1.00		mg/L	1	08/16/16 12:42 PM
Fluoride	0.389	0.100	0.400	J	mg/L	1	08/16/16 12:42 PM
Sulfate	77.8	1.00	3.00		mg/L	1	08/16/16 12:42 PM
PH		M4500-H+ B		Analyst: BJT			
pH	4.91	0	0		pH Units@20.1°C	1	08/17/16 11:26 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	210	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: PDP-22
Lab ID: 1608133-16
Collection Date: 08/10/16 09:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 10:35 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 12:40 PM
Arsenic	0.00488	0.00200	0.00500	J	mg/L	1	08/23/16 12:40 PM
Barium	0.141	0.00300	0.0100		mg/L	1	08/23/16 12:40 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 12:40 PM
Boron	0.255	0.0100	0.0300		mg/L	1	08/24/16 04:31 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 12:40 PM
Calcium	104	1.00	3.00		mg/L	10	08/24/16 03:46 PM
Chromium	0.0121	0.00200	0.00500		mg/L	1	08/23/16 12:40 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 12:40 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 12:40 PM
Lithium	0.0219	0.00500	0.0100		mg/L	1	08/23/16 12:40 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 12:40 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 12:40 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 12:40 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	15.2	0.300	1.00		mg/L	1	08/16/16 12:57 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/16/16 12:57 PM
Sulfate	216	10.0	30.0		mg/L	10	08/16/16 03:52 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.08	0	0		pH Units@20.3°C	1	08/17/16 11:28 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	750	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: PDP-26
Lab ID: 1608133-17
Collection Date: 08/10/16 10:30 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 10:46 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 01:14 PM
Arsenic	0.00589	0.00200	0.00500		mg/L	1	08/23/16 01:14 PM
Barium	0.0355	0.00300	0.0100		mg/L	1	08/23/16 01:14 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:14 PM
Boron	0.0671	0.0100	0.0300		mg/L	1	08/24/16 04:33 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:14 PM
Calcium	3.04	0.100	0.300		mg/L	1	08/23/16 01:14 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:14 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 01:14 PM
Lead	0.000675	0.000300	0.00100	J	mg/L	1	08/23/16 01:14 PM
Lithium	0.0151	0.00500	0.0100		mg/L	1	08/23/16 01:14 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:14 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:14 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 01:14 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	5.62	0.300	1.00		mg/L	1	08/16/16 01:12 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/16/16 01:12 PM
Sulfate	7.79	1.00	3.00		mg/L	1	08/16/16 01:12 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.97	0	0		pH Units@20.4°C	1	08/17/16 11:31 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	114	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: MW-18A
Lab ID: 1608133-18
Collection Date: 08/10/16 11:30 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	0.0312	0.00160	0.00400		mg/L	20	08/24/16 11:31 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 01:16 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:16 PM
Barium	0.0447	0.00300	0.0100		mg/L	1	08/23/16 01:16 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:16 PM
Boron	0.0755	0.0100	0.0300		mg/L	1	08/24/16 05:29 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:16 PM
Calcium	1.13	0.100	0.300		mg/L	1	08/23/16 01:16 PM
Chromium	0.00251	0.00200	0.00500	J	mg/L	1	08/23/16 01:16 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 01:16 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:16 PM
Lithium	0.00806	0.00500	0.0100	J	mg/L	1	08/23/16 01:16 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:16 PM
Selenium	0.00292	0.00200	0.00500	J	mg/L	1	08/23/16 01:16 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 01:16 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	7.04	0.300	1.00		mg/L	1	08/16/16 01:27 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/16/16 01:27 PM
Sulfate	4.78	1.00	3.00		mg/L	1	08/16/16 01:27 PM
PH		M4500-H+ B		Analyst: BJT			
pH	5.86	0	0		pH Units@20.6°C	1	08/17/16 11:34 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	62.0	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: EB-1
Lab ID: 1608133-19
Collection Date: 08/10/16 11:45 AM
Matrix: EQUIP BLANK

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 10:53 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 01:18 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:18 PM
Barium	<0.00300	0.00300	0.0100		mg/L	1	08/23/16 01:18 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:18 PM
Boron	0.0375	0.0100	0.0300		mg/L	1	08/24/16 05:31 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:18 PM
Calcium	5.33	0.100	0.300		mg/L	1	08/23/16 01:18 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:18 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 01:18 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:18 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	08/23/16 01:18 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:18 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:18 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 01:18 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	11.4	0.300	1.00		mg/L	1	08/17/16 11:24 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/17/16 11:24 AM
Sulfate	24.7	1.00	3.00		mg/L	1	08/17/16 11:24 AM
PH		M4500-H+ B		Analyst: BJT			
pH	6.97	0	0		pH Units@20.7°C	1	08/17/16 11:36 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	<10.0	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: BMW-11AR
Lab ID: 1608133-20
Collection Date: 08/11/16 08:25 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 10:56 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 01:20 PM
Arsenic	0.00271	0.00200	0.00500	J	mg/L	1	08/23/16 01:20 PM
Barium	0.0772	0.00300	0.0100		mg/L	1	08/23/16 01:20 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:20 PM
Boron	0.389	0.0100	0.0300		mg/L	1	08/24/16 05:35 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:20 PM
Calcium	170	1.00	3.00		mg/L	10	08/24/16 05:33 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:20 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 01:20 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:20 PM
Lithium	0.0147	0.00500	0.0100		mg/L	1	08/23/16 01:20 PM
Molybdenum	0.00346	0.00200	0.00500	J	mg/L	1	08/23/16 01:20 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:20 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 01:20 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	20.8	0.300	1.00		mg/L	1	08/17/16 11:39 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/17/16 11:39 AM
Sulfate	682	10.0	30.0		mg/L	10	08/17/16 02:41 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	7.24	0	0		pH Units@20.8°C	1	08/17/16 11:40 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1790	50.0	50.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: BMW-19
Lab ID: 1608133-21
Collection Date: 08/11/16 09:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 11:04 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 01:22 PM
Arsenic	0.00711	0.00200	0.00500		mg/L	1	08/23/16 01:22 PM
Barium	0.0158	0.00300	0.0100		mg/L	1	08/23/16 01:22 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:22 PM
Boron	0.419	0.0100	0.0300		mg/L	1	08/24/16 05:39 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:22 PM
Calcium	458	5.00	15.0		mg/L	50	08/25/16 02:49 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:22 PM
Cobalt	0.0128	0.00300	0.00500		mg/L	1	08/23/16 01:22 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:22 PM
Lithium	0.0568	0.00500	0.0100		mg/L	1	08/23/16 01:22 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:22 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:22 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 01:22 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	8.26	0.300	1.00		mg/L	1	08/17/16 11:54 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/17/16 11:54 AM
Sulfate	2370	100	300		mg/L	100	08/17/16 02:56 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.75	0	0		pH Units@20.7°C	1	08/17/16 11:42 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	3780	50.0	50.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: BMW-18
Lab ID: 1608133-22
Collection Date: 08/11/16 10:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 11:06 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 01:24 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:24 PM
Barium	0.0291	0.00300	0.0100		mg/L	1	08/23/16 01:24 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:24 PM
Boron	0.415	0.0100	0.0300		mg/L	1	08/24/16 05:41 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:24 PM
Calcium	7.02	0.100	0.300		mg/L	1	08/23/16 01:24 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:24 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 01:24 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 01:24 PM
Lithium	0.0147	0.00500	0.0100		mg/L	1	08/23/16 01:24 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:24 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 01:24 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 01:24 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	18.5	0.300	1.00		mg/L	1	08/17/16 12:09 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/17/16 12:09 PM
Sulfate	100	1.00	3.00		mg/L	1	08/17/16 12:09 PM
PH		M4500-H+ B		Analyst: BJT			
pH	8.48	0	0		pH Units@20.8°C	1	08/17/16 11:46 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	493	10.0	10.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: BMW-20
Lab ID: 1608133-23
Collection Date: 08/11/16 10:50 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 11:08 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 02:11 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:11 PM
Barium	0.0637	0.00300	0.0100		mg/L	1	08/23/16 02:11 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:11 PM
Boron	0.106	0.0100	0.0300		mg/L	1	08/24/16 08:48 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:11 PM
Calcium	107	1.00	3.00		mg/L	10	08/24/16 07:14 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:11 PM
Cobalt	0.0513	0.00300	0.00500		mg/L	1	08/23/16 02:11 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:11 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	08/25/16 02:51 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:11 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:11 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 02:11 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	39.4	0.300	1.00		mg/L	1	08/17/16 12:24 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/17/16 12:24 PM
Sulfate	602	10.0	30.0		mg/L	10	08/17/16 03:11 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.38	0	0		pH Units@20.8°C	1	08/17/16 11:48 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1310	50.0	50.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: BMW-24
Lab ID: 1608133-24
Collection Date: 08/11/16 08:50 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 11:10 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 02:13 PM
Arsenic	0.00414	0.00200	0.00500	J	mg/L	1	08/23/16 02:13 PM
Barium	1.26	0.00300	0.0100		mg/L	1	08/23/16 02:13 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:13 PM
Boron	0.248	0.0100	0.0300		mg/L	1	08/24/16 08:50 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:13 PM
Calcium	58.5	1.00	3.00		mg/L	10	08/24/16 07:16 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:13 PM
Cobalt	0.00707	0.00300	0.00500		mg/L	1	08/23/16 02:13 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:13 PM
Lithium	0.00938	0.00500	0.0100	J	mg/L	1	08/25/16 02:53 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:13 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:13 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 02:13 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	481	30.0	100		mg/L	100	08/17/16 03:26 PM
Fluoride	0.225	0.100	0.400	J	mg/L	1	08/17/16 12:39 PM
Sulfate	97.8	1.00	3.00		mg/L	1	08/17/16 12:39 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.52	0	0		pH Units@20.9°C	1	08/17/16 11:50 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1150	50.0	50.0		mg/L	1	08/17/16 08:42 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: BMW-23
Lab ID: 1608133-25
Collection Date: 08/11/16 09:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 11:13 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 02:15 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:15 PM
Barium	0.0458	0.00300	0.0100		mg/L	1	08/23/16 02:15 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:15 PM
Boron	1.28	0.100	0.300		mg/L	10	08/24/16 07:18 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:15 PM
Calcium	90.4	1.00	3.00		mg/L	10	08/24/16 07:18 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:15 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 02:15 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:15 PM
Lithium	0.0770	0.00500	0.0100		mg/L	1	08/25/16 02:55 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:15 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:15 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 02:15 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	242	3.00	10.0		mg/L	10	08/17/16 03:41 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/17/16 12:54 PM
Sulfate	539	10.0	30.0		mg/L	10	08/17/16 03:41 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.69	0	0		pH Units@21°C	1	08/17/16 11:52 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1430	50.0	50.0		mg/L	1	08/22/16 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: BMW-22
Lab ID: 1608133-26
Collection Date: 08/11/16 10:00 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 11:15 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 02:17 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:17 PM
Barium	0.0679	0.00300	0.0100		mg/L	1	08/23/16 02:17 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:17 PM
Boron	3.18	0.100	0.300		mg/L	10	08/24/16 07:20 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:17 PM
Calcium	198	1.00	3.00		mg/L	10	08/24/16 07:20 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:17 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 02:17 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:17 PM
Lithium	0.0675	0.00500	0.0100		mg/L	1	08/25/16 02:57 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:17 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:17 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 02:17 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	311	30.0	100		mg/L	100	08/17/16 03:56 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/17/16 01:09 PM
Sulfate	946	100	300		mg/L	100	08/17/16 03:56 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.78	0	0		pH Units@21.1°C	1	08/17/16 11:53 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2520	50.0	50.0		mg/L	1	08/22/16 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: 14-Sep-16

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - Martin Lake
Project No: 5164-B
Lab Order: 1608133

Client Sample ID: BMW-21
Lab ID: 1608133-27
Collection Date: 08/11/16 10:30 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/24/16 11:17 AM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/23/16 02:19 PM
Arsenic	0.00373	0.00200	0.00500	J	mg/L	1	08/23/16 02:19 PM
Barium	0.0445	0.00300	0.0100		mg/L	1	08/23/16 02:19 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:19 PM
Boron	1.04	0.100	0.300		mg/L	10	08/24/16 07:22 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:19 PM
Calcium	143	1.00	3.00		mg/L	10	08/24/16 07:22 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:19 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	08/23/16 02:19 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/23/16 02:19 PM
Lithium	0.0527	0.00500	0.0100		mg/L	1	08/25/16 02:58 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:19 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/23/16 02:19 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/23/16 02:19 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	425	30.0	100		mg/L	100	08/17/16 04:11 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/17/16 01:24 PM
Sulfate	484	100	300		mg/L	100	08/17/16 04:11 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	7.28	0	0		pH Units@21.7°C	1	08/17/16 11:56 AM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1860	50.0	50.0		mg/L	1	08/22/16 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		

CLIENT: Pastor, Behling & Wheeler

Work Order: 1608133

Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160818B

The QC data in batch 76835 applies to the following samples: 1608133-01A, 1608133-02A, 1608133-03A, 1608133-04A, 1608133-05A, 1608133-06A, 1608133-07A, 1608133-08A, 1608133-09A, 1608133-10A

Sample ID	MB-76835	Batch ID:	76835	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 9:58:12 AM	Prep Date:	8/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-76835	Batch ID:	76835	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 10:02:44 AM	Prep Date:	8/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00192 0.000200 0.00200 0 96.0 85 115

Sample ID	LCSD-76835	Batch ID:	76835	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 10:05:00 AM	Prep Date:	8/17/2016			
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 2.57 15

Sample ID	1608119-02A SD	Batch ID:	76835	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 10:11:47 AM	Prep Date:	8/17/2016			
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	1608119-02A PDS	Batch ID:	76835	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 10:14:03 AM	Prep Date:	8/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00235 0.000200 0.00250 0 94.0 85 115

Sample ID	1608119-02A MS	Batch ID:	76835	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 10:16:19 AM	Prep Date:	8/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00199 0.000200 0.00200 0 99.5 80 120

Sample ID	1608119-02A MSD	Batch ID:	76835	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 10:18:35 AM	Prep Date:	8/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00199 0.000200 0.00200 0 99.5 80 120 0 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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160818B

Sample ID	ICV-160818	Batch ID:	R87672	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 9:53:38 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.00388	0.000200	0.00400	0	97.0	90	110			

Sample ID	CCV1-160818	Batch ID:	R87672	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 10:39:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00190	0.000200	0.00200	0	95.0	90	110			

Sample ID	CCV2-160818	Batch ID:	R87672	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_160818B	Analysis Date:	8/18/2016 11:06:20 AM	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			

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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160824B

The QC data in batch 76918 applies to the following samples: 1608133-11A, 1608133-12A, 1608133-13A, 1608133-14A, 1608133-15A, 1608133-16A, 1608133-17A, 1608133-18A, 1608133-19A, 1608133-20A, 1608133-21A, 1608133-22A, 1608133-23A, 1608133-24A, 1608133-25A, 1608133-26A, 1608133-27A

Sample ID	MB-76918	Batch ID:	76918	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:14:50 AM	Prep Date:	8/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-76918	Batch ID:	76918	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:19:22 AM	Prep Date:	8/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00201 0.000200 0.00200 0 101 85 115

Sample ID	LCSD-76918	Batch ID:	76918	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:21:38 AM	Prep Date:	8/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00207 0.000200 0.00200 0 104 85 115 2.94 15

Sample ID	1608133-16A SD	Batch ID:	76918	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:37:29 AM	Prep Date:	8/23/2016			
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	1608133-16A PDS	Batch ID:	76918	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:39:45 AM	Prep Date:	8/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00228 0.000200 0.00250 0 91.2 85 115

Sample ID	1608133-16A MS	Batch ID:	76918	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:42:01 AM	Prep Date:	8/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00186 0.000200 0.00200 0 93.0 80 120

Sample ID	1608133-16A MSD	Batch ID:	76918	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:44:17 AM	Prep Date:	8/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00186 0.000200 0.00200 0 93.0 80 120 0 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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160824B

Sample ID	ICV-160824	Batch ID:	R87769	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:10:16 AM	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	CCV1-160824	Batch ID:	R87769	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 10:58:25 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	90	110			

Sample ID	CCV2-160824	Batch ID:	R87769	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 11:26:52 AM	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			

Sample ID	CCV3-160824	Batch ID:	R87769	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160824B	Analysis Date:	8/24/2016 11:33:45 AM	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			

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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS3_160824B

Sample ID	ICV1-160824	Batch ID:	R87792	TestNo:	SW6020A	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS3_160824B	Analysis Date:	8/24/2016 1:49:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Beryllium 0.103 0.00100 0.100 0 103 90 110

Sample ID	ILCVL-160824	Batch ID:	R87792	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS3_160824B	Analysis Date:	8/24/2016 1:55:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Beryllium 0.00108 0.00100 0.00100 0 108 70 130

Sample ID	CCV1-160824	Batch ID:	R87792	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_160824B	Analysis Date:	8/24/2016 4:35:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Beryllium 0.217 0.00100 0.200 0 108 90 110

Sample ID	LCVL1-160824	Batch ID:	R87792	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS3_160824B	Analysis Date:	8/24/2016 4:47:00 PM	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

Sample ID	CCV2-160824	Batch ID:	R87792	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS3_160824B	Analysis Date:	8/24/2016 6:51:00 PM	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

Sample ID	LCVL2-160824	Batch ID:	R87792	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS3_160824B	Analysis Date:	8/24/2016 7:02:00 PM	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

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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160817A

The QC data in batch 76816 applies to the following samples: 1608133-01A, 1608133-02A

Sample ID	MB-76816	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 12:55:00 PM	Prep Date:	8/16/2016

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	LCS-76816	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 12:57:00 PM	Prep Date:	8/16/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.209	0.00250	0.200	0	105	80	120			
Arsenic	0.184	0.00500	0.200	0	91.9	80	120			
Barium	0.197	0.0100	0.200	0	98.5	80	120			
Beryllium	0.200	0.00100	0.200	0	100	80	120			
Cadmium	0.200	0.00100	0.200	0	99.8	80	120			
Calcium	4.73	0.300	5.00	0	94.5	80	120			
Chromium	0.198	0.00500	0.200	0	99.1	80	120			
Cobalt	0.180	0.00500	0.200	0	89.8	80	120			
Lead	0.196	0.00100	0.200	0	97.9	80	120			
Lithium	0.199	0.0100	0.200	0	99.4	80	120			
Molybdenum	0.194	0.00500	0.200	0	96.9	80	120			
Selenium	0.180	0.00500	0.200	0	90.0	80	120			
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID	LCSD-76816	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 12:59:00 PM	Prep Date:	8/16/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.210	0.00250	0.200	0	105	80	120	0.364	15	
Arsenic	0.192	0.00500	0.200	0	96.2	80	120	4.61	15	
Barium	0.194	0.0100	0.200	0	97.2	80	120	1.39	15	
Beryllium	0.199	0.00100	0.200	0	99.6	80	120	0.495	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160817A

Sample ID	LCSD-76816	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 12:59:00 PM	Prep Date:	8/16/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Cadmium	0.197	0.00100	0.200	0	98.5	80	120	1.30	15	
Calcium	4.70	0.300	5.00	0	94.0	80	120	0.549	15	
Chromium	0.196	0.00500	0.200	0	98.2	80	120	0.920	15	
Cobalt	0.186	0.00500	0.200	0	93.0	80	120	3.45	15	
Lead	0.191	0.00100	0.200	0	95.5	80	120	2.54	15	
Lithium	0.197	0.0100	0.200	0	98.5	80	120	0.885	15	
Molybdenum	0.193	0.00500	0.200	0	96.6	80	120	0.298	15	
Selenium	0.189	0.00500	0.200	0	94.3	80	120	4.76	15	
Thallium	0.194	0.00150	0.200	0	96.9	80	120	4.14	15	

Sample ID	1608135-04A SD	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 1:05:00 PM	Prep Date:	8/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	<0.0400	0.125	0	0				0	10	
Arsenic	0.667	0.250	0	0.668				0.086	10	
Barium	<0.150	0.500	0	0				0	10	
Beryllium	<0.0150	0.0500	0	0				0	10	
Cadmium	<0.0150	0.0500	0	0				0	10	
Calcium	5.38	15.0	0	5.68				5.39	10	
Chromium	<0.100	0.250	0	0				0	10	
Cobalt	<0.150	0.250	0	0				0	10	
Lead	<0.0150	0.0500	0	0				0	10	
Lithium	<0.250	0.500	0	0				0	10	
Molybdenum	1.25	0.250	0	1.21				3.01	10	
Selenium	<0.100	0.250	0	0				0	10	
Thallium	<0.0250	0.0750	0	0				0	10	

Sample ID	1608135-04A PDS			Batch ID:	76816		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_160817A		Analysis Date:	8/17/2016 1:25:00 PM		Prep Date:	8/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	2.10	0.0250	2.00	0	105	80	120			
Arsenic	2.66	0.0500	2.00	0.668	99.7	80	120			
Barium	1.97	0.100	2.00	0	98.6	80	120			
Beryllium	1.86	0.0100	2.00	0	93.2	80	120			
Cadmium	1.87	0.0100	2.00	0	93.7	80	120			
Calcium	50.3	3.00	50.0	5.68	89.2	80	120			
Chromium	1.93	0.0500	2.00	0	96.7	80	120			
Cobalt	1.90	0.0500	2.00	0	95.1	80	120			
Lead	1.97	0.0100	2.00	0	98.7	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160817A

Sample ID	1608135-04A PDS	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 1:25:00 PM	Prep Date:	8/16/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lithium	1.81	0.100	2.00	0	90.4	80	120			
Molybdenum	3.08	0.0500	2.00	1.21	93.4	80	120			
Selenium	1.94	0.0500	2.00	0	96.8	80	120			
Thallium	1.97	0.0150	2.00	0	98.3	80	120			

Sample ID	1608135-04A MS		Batch ID:	76816		TestNo:	SW6020A		Units:	mg/L	
SampType:	MS		Run ID:	ICP-MS4_160817A		Analysis Date:	8/17/2016 1:27:00 PM		Prep Date:	8/16/2016	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.219	0.0250	0.200	0	110	80	120			
Arsenic	0.891	0.0500	0.200	0.668	112	80	120			
Barium	0.215	0.100	0.200	0	107	80	120			
Beryllium	0.186	0.0100	0.200	0	92.9	80	120			
Cadmium	0.196	0.0100	0.200	0	97.9	80	120			
Calcium	10.3	3.00	5.00	5.68	92.9	80	120			
Chromium	0.191	0.0500	0.200	0	95.6	80	120			
Cobalt	0.195	0.0500	0.200	0	97.4	80	120			
Lead	0.204	0.0100	0.200	0	102	80	120			
Lithium	0.215	0.100	0.200	0	108	80	120			
Molybdenum	1.48	0.0500	0.200	1.21	135	80	120			S
Selenium	0.175	0.0500	0.200	0	87.3	80	120			
Thallium	0.199	0.0150	0.200	0	99.5	80	120			

Sample ID	1608135-04A MSD	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 1:29:00 PM	Prep Date:	8/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.213	0.0250	0.200	0	106	80	120	3.19	15	
Arsenic	0.873	0.0500	0.200	0.668	103	80	120	2.08	15	
Barium	0.213	0.100	0.200	0	106	80	120	0.965	15	
Beryllium	0.184	0.0100	0.200	0	91.8	80	120	1.18	15	
Cadmium	0.192	0.0100	0.200	0	95.9	80	120	2.08	15	
Calcium	10.3	3.00	5.00	5.68	91.6	80	120	0.674	15	
Chromium	0.189	0.0500	0.200	0	94.7	80	120	0.972	15	
Cobalt	0.192	0.0500	0.200	0	95.8	80	120	1.70	15	
Lead	0.199	0.0100	0.200	0	99.4	80	120	2.38	15	
Lithium	0.206	0.100	0.200	0	103	80	120	4.42	15	
Molybdenum	1.48	0.0500	0.200	1.21	134	80	120	0.179	15	S
Selenium	0.164	0.0500	0.200	0	82.1	80	120	6.17	15	
Thallium	0.200	0.0150	0.200	0	99.8	80	120	0.341	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160817A

Sample ID	ICV-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 10:42:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.104	0.00250	0.100	0	104	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	0.100	0.00100	0.100	0	100	90	110			
Cadmium	0.0985	0.00100	0.100	0	98.5	90	110			
Calcium	2.34	0.300	2.50	0	93.8	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	0.101	0.00100	0.100	0	101	90	110			
Lithium	0.0976	0.0100	0.100	0	97.6	90	110			
Molybdenum	0.0952	0.00500	0.100	0	95.2	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.101	0.00150	0.100	0	101	90	110			

Sample ID	LCVL-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 10:46:00 AM	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			
Arsenic	0.00526	0.00500	0.00500	0	105	70	130			
Barium	0.00513	0.0100	0.00500	0	103	70	130			
Beryllium	0.000783	0.00100	0.00100	0	78.3	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.105	0.300	0.100	0	105	70	130			
Chromium	0.00526	0.00500	0.00500	0	105	70	130			
Cobalt	0.00522	0.00500	0.00500	0	104	70	130			
Lead	0.00111	0.00100	0.00100	0	110	70	130			
Lithium	0.0100	0.0100	0.0100	0	100	70	130			
Molybdenum	0.00524	0.00500	0.00500	0	105	70	130			
Selenium	0.00555	0.00500	0.00500	0	111	70	130			
Thallium	0.00105	0.00150	0.00100	0	105	70	130			

Sample ID	CCV2-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 12:28:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.205	0.00250	0.200	0	103	90	110			
Arsenic	0.214	0.00500	0.200	0	107	90	110			
Barium	0.204	0.0100	0.200	0	102	90	110			
Beryllium	0.210	0.00100	0.200	0	105	90	110			
Cadmium	0.208	0.00100	0.200	0	104	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160817A

Sample ID	CCV2-160817			Batch ID:	R87663		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV			Run ID:	ICP-MS4_160817A		Analysis Date:	8/17/2016 12:28:00 PM		Prep Date:		
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.66	0.300	5.00	0	93.1	90	110			
Chromium	0.208	0.00500	0.200	0	104	90	110			
Cobalt	0.211	0.00500	0.200	0	106	90	110			
Lead	0.210	0.00100	0.200	0	105	90	110			
Lithium	0.215	0.0100	0.200	0	107	90	110			
Molybdenum	0.207	0.00500	0.200	0	103	90	110			
Selenium	0.212	0.00500	0.200	0	106	90	110			
Thallium	0.217	0.00150	0.200	0	108	90	110			

Sample ID	LCVL2-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 12:38:00 PM	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	0.00520	0.00500	0.00500	0	104	70	130			
Barium	0.00517	0.0100	0.00500	0	103	70	130			
Beryllium	0.00109	0.00100	0.00100	0	109	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.0990	0.300	0.100	0	99.0	70	130			
Chromium	0.00514	0.00500	0.00500	0	103	70	130			
Cobalt	0.00494	0.00500	0.00500	0	98.9	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0104	0.0100	0.0100	0	104	70	130			
Molybdenum	0.00489	0.00500	0.00500	0	97.8	70	130			
Selenium	0.00491	0.00500	0.00500	0	98.1	70	130			
Thallium	0.00105	0.00150	0.00100	0	105	70	130			

Sample ID	CCV3-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 1:39:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.203	0.00250	0.200	0	102	90	110			
Arsenic	0.210	0.00500	0.200	0	105	90	110			
Barium	0.203	0.0100	0.200	0	102	90	110			
Beryllium	0.209	0.00100	0.200	0	104	90	110			
Cadmium	0.206	0.00100	0.200	0	103	90	110			
Calcium	4.76	0.300	5.00	0	95.3	90	110			
Chromium	0.209	0.00500	0.200	0	105	90	110			
Cobalt	0.206	0.00500	0.200	0	103	90	110			
Lead	0.202	0.00100	0.200	0	101	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160817A

Sample ID	CCV3-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 1:39:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.202	0.00500	0.200	0	101	90	110			
Selenium	0.205	0.00500	0.200	0	103	90	110			
Thallium	0.208	0.00150	0.200	0	104	90	110			

Sample ID	LCVL3-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 1:46:00 PM	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	0.00537	0.00500	0.00500	0	107	70	130			
Barium	0.00514	0.0100	0.00500	0	103	70	130			
Beryllium	0.000885	0.00100	0.00100	0	88.5	70	130			
Cadmium	0.00103	0.00100	0.00100	0	103	70	130			
Calcium	0.103	0.300	0.100	0	103	70	130			
Chromium	0.00517	0.00500	0.00500	0	103	70	130			
Cobalt	0.00528	0.00500	0.00500	0	106	70	130			
Lead	0.000995	0.00100	0.00100	0	99.5	70	130			
Lithium	0.0101	0.0100	0.0100	0	101	70	130			
Molybdenum	0.00491	0.00500	0.00500	0	98.2	70	130			
Selenium	0.00497	0.00500	0.00500	0	99.5	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

Sample ID	CCV4-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 2:11:00 PM	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	0.209	0.00500	0.200	0	105	90	110			
Barium	0.208	0.0100	0.200	0	104	90	110			
Beryllium	0.207	0.00100	0.200	0	103	90	110			
Cadmium	0.208	0.00100	0.200	0	104	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	0.204	0.00100	0.200	0	102	90	110			
Lithium	0.214	0.0100	0.200	0	107	90	110			
Molybdenum	0.205	0.00500	0.200	0	103	90	110			
Selenium	0.203	0.00500	0.200	0	101	90	110			
Thallium	0.210	0.00150	0.200	0	105	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160817A

Sample ID	LCVL4-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 2:15:00 PM	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	0.00509	0.00500	0.00500	0	102	70	130			
Barium	0.00516	0.0100	0.00500	0	103	70	130			
Beryllium	0.00123	0.00100	0.00100	0	123	70	130			
Cadmium	0.00108	0.00100	0.00100	0	108	70	130			
Chromium	0.00521	0.00500	0.00500	0	104	70	130			
Cobalt	0.00503	0.00500	0.00500	0	101	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0104	0.0100	0.0100	0	104	70	130			
Molybdenum	0.00495	0.00500	0.00500	0	99.0	70	130			
Selenium	0.00460	0.00500	0.00500	0	91.9	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID	CCV6-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 3:33:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.203	0.00250	0.200	0	102	90	110			
Arsenic	0.204	0.00500	0.200	0	102	90	110			
Barium	0.208	0.0100	0.200	0	104	90	110			
Beryllium	0.202	0.00100	0.200	0	101	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Chromium	0.201	0.00500	0.200	0	101	90	110			
Cobalt	0.195	0.00500	0.200	0	97.7	90	110			
Lead	0.206	0.00100	0.200	0	103	90	110			
Molybdenum	0.200	0.00500	0.200	0	99.8	90	110			
Selenium	0.198	0.00500	0.200	0	99.2	90	110			
Thallium	0.210	0.00150	0.200	0	105	90	110			

Sample ID	LCVL6-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 3:38:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00230	0.00250	0.00200	0	115	70	130			
Arsenic	0.00526	0.00500	0.00500	0	105	70	130			
Barium	0.00533	0.0100	0.00500	0	107	70	130			
Beryllium	0.00128	0.00100	0.00100	0	128	70	130			
Cadmium	0.000952	0.00100	0.00100	0	95.2	70	130			
Chromium	0.00519	0.00500	0.00500	0	104	70	130			
Cobalt	0.00517	0.00500	0.00500	0	103	70	130			
Lead	0.00101	0.00100	0.00100	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160817A

Sample ID	LCVL6-160817	Batch ID:	R87663	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160817A	Analysis Date:	8/17/2016 3:38:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.00482	0.00500	0.00500	0	96.4	70	130			
Selenium	0.00483	0.00500	0.00500	0	96.7	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160818B

The QC data in batch 76816 applies to the following samples: 1608133-01A, 1608133-02A

Sample ID	MB-76816	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	MBLK	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 2:32:00 PM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron <0.0100 0.0300

Sample ID	LCS-76816	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCS	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 2:34:00 PM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 0.193 0.0300 0.200 0 96.3 80 120

Sample ID	LCSD-76816	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 2:36:00 PM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 0.185 0.0300 0.200 0 92.7 80 120 3.82 15

Sample ID	1608135-04A SD	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 2:42:00 PM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 1.97 1.50 0 1.87 5.13 10

Sample ID	1608135-04A PDS	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 2:44:00 PM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 3.60 0.300 2.00 1.87 86.7 80 120

Sample ID	1608135-04A MS	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 3:04:00 PM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 2.18 0.300 0.200 1.87 158 80 120 S

Sample ID	1608135-04A MSD	Batch ID:	76816	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 3:06:00 PM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Boron 2.07 0.300 0.200 1.87 102 80 120 5.26 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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160818B

Sample ID	ICV2-160818	Batch ID:	R87690	TestNo:	SW6020A	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 2:06:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Boron	0.0920	0.0300	0.100	0	92.0	90	110
Calcium	2.39	0.300	2.50	0	95.8	90	110

Sample ID	ILCVL2-160818	Batch ID:	R87690	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 2:11:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Boron	0.0190	0.0300	0.0200	0	95.0	70	130
Calcium	0.102	0.300	0.100	0	102	70	130

Sample ID	CCV2-160818	Batch ID:	R87690	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 3:08:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Boron	0.195	0.0300	0.200	0	97.6	90	110
Calcium	4.88	0.300	5.00	0	97.6	90	110

Sample ID	LCVL2-160818	Batch ID:	R87690	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 3:16:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Boron	0.0176	0.0300	0.0200	0	87.8	70	130
Calcium	0.0995	0.300	0.100	0	99.5	70	130

Sample ID	CCV3-160818	Batch ID:	R87690	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 3:42:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Boron	0.193	0.0300	0.200	0	96.6	90	110
Calcium	4.89	0.300	5.00	0	97.8	90	110

Sample ID	LCVL3-160818	Batch ID:	R87690	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS4_160818B	Analysis Date:	8/18/2016 3:54:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual

Boron	0.00902	0.0300	0.0200	0	45.1	70	130
Calcium	0.100	0.300	0.100	0	100	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160819A

The QC data in batch 76817 applies to the following samples: 1608133-03A, 1608133-04A, 1608133-05A, 1608133-06A, 1608133-07A, 1608133-08A, 1608133-09A, 1608133-10A, 1608133-11A, 1608133-12A, 1608133-13A, 1608133-14A, 1608133-15A

Sample ID MB-76817	Batch ID: 76817	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_160819A	Analysis Date: 8/19/2016 5:26:00 PM	Prep Date: 8/16/2016

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 LCS-76817	Batch ID: 76817	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_160819A	Analysis Date: 8/19/2016 5:28:00 PM	Prep Date: 8/16/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.6	80	120			
Arsenic	0.200	0.00500	0.200	0	100	80	120			
Barium	0.194	0.0100	0.200	0	97.1	80	120			
Cadmium	0.190	0.00100	0.200	0	95.2	80	120			
Calcium	4.76	0.300	5.00	0	95.3	80	120			
Chromium	0.196	0.00500	0.200	0	97.9	80	120			
Cobalt	0.200	0.00500	0.200	0	100	80	120			
Lead	0.200	0.00100	0.200	0	99.8	80	120			
Molybdenum	0.186	0.00500	0.200	0	93.2	80	120			
Selenium	0.203	0.00500	0.200	0	102	80	120			
Thallium	0.200	0.00150	0.200	0	100	80	120			

Sample ID LCSD-76817	Batch ID: 76817	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS4_160819A	Analysis Date: 8/19/2016 5:30:00 PM	Prep Date: 8/16/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.200	0.00250	0.200	0	100	80	120	0.615	15	
Arsenic	0.201	0.00500	0.200	0	100	80	120	0.198	15	
Barium	0.195	0.0100	0.200	0	97.3	80	120	0.243	15	
Cadmium	0.192	0.00100	0.200	0	96.0	80	120	0.767	15	
Calcium	4.81	0.300	5.00	0	96.2	80	120	0.929	15	
Chromium	0.196	0.00500	0.200	0	97.8	80	120	0.039	15	
Cobalt	0.201	0.00500	0.200	0	100	80	120	0.213	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160819A

Sample ID	LCSD-76817	Batch ID:	76817	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 5:30:00 PM	Prep Date:	8/16/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lead	0.199	0.00100	0.200	0	99.3	80	120	0.462	15	
Molybdenum	0.189	0.00500	0.200	0	94.5	80	120	1.31	15	
Selenium	0.203	0.00500	0.200	0	102	80	120	0.159	15	
Thallium	0.199	0.00150	0.200	0	99.3	80	120	0.824	15	

Sample ID	1608136-06A SD		Batch ID:	76817		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD		Run ID:	ICP-MS4_160819A		Analysis Date:	8/19/2016 5:36:00 PM		Prep Date:	8/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	0.190	0.0250	0	0.193				1.47	10	
Barium	0.0413	0.0500	0	0.0412				0.187	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Calcium	5.17	1.50	0	5.22				0.967	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0.00742				0	10	
Lead	<0.00150	0.00500	0	0.000484				0	10	
Molybdenum	0.364	0.0250	0	0.374				2.56	10	
Selenium	<0.0100	0.0250	0	0.00282				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID	1608136-06A PDS		Batch ID:	76817		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS		Run ID:	ICP-MS4_160819A		Analysis Date:	8/19/2016 5:56:00 PM		Prep Date:	8/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.209	0.00250	0.200	0	104	80	120			
Arsenic	0.386	0.00500	0.200	0.193	96.6	80	120			
Barium	0.238	0.0100	0.200	0.0412	98.6	80	120			
Cadmium	0.177	0.00100	0.200	0	88.4	80	120			
Calcium	9.50	0.300	5.00	5.22	85.7	80	120			
Chromium	0.186	0.00500	0.200	0	93.0	80	120			
Cobalt	0.197	0.00500	0.200	0.00742	94.6	80	120			
Lead	0.202	0.00100	0.200	0.000484	101	80	120			
Molybdenum	0.524	0.00500	0.200	0.374	74.9	80	120			S
Selenium	0.210	0.00500	0.200	0.00282	103	80	120			
Thallium	0.201	0.00150	0.200	0	101	80	120			

Sample ID	1608136-06A MS		Batch ID:	76817		TestNo:	SW6020A		Units:	mg/L	
SampType:	MS		Run ID:	ICP-MS4_160819A		Analysis Date:	8/19/2016 5:58:00 PM		Prep Date:	8/16/2016	
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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160819A

Sample ID	1608136-06A MS	Batch ID:	76817	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 5:58:00 PM	Prep Date:	8/16/2016			
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	0.633	0.00500	0.200	0.193	220	80	120			S
Barium	0.535	0.0100	0.200	0.0412	247	80	120			S
Cadmium	0.173	0.00100	0.200	0	86.5	80	120			
Calcium	5.64	0.300	5.00	5.22	8.36	80	120			S
Chromium	0.174	0.00500	0.200	0	87.1	80	120			
Cobalt	0.181	0.00500	0.200	0.00742	86.7	80	120			
Lead	0.201	0.00100	0.200	0.000484	100	80	120			
Molybdenum	2.66	0.00500	0.200	0.374	1140	80	120			S
Selenium	0.206	0.00500	0.200	0.00282	102	80	120			
Thallium	0.201	0.00150	0.200	0	101	80	120			

Sample ID: 1608136-06A MSD	Batch ID: 76817	TestNo: SW6020A	Units: mg/L							
SampType: MSD	Run ID: ICP-MS4_160819A	Analysis Date: 8/19/2016 6:00:00 PM	Prep Date: 8/16/2016							
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	2.74	15	
Arsenic	0.612	0.00500	0.200	0.193	210	80	120	3.36	15	S
Barium	0.506	0.0100	0.200	0.0412	232	80	120	5.57	15	S
Cadmium	0.167	0.00100	0.200	0	83.7	80	120	3.24	15	
Calcium	5.63	0.300	5.00	5.22	8.09	80	120	0.238	15	S
Chromium	0.171	0.00500	0.200	0	85.6	80	120	1.72	15	
Cobalt	0.178	0.00500	0.200	0.00742	85.3	80	120	1.57	15	
Lead	0.199	0.00100	0.200	0.000484	99.2	80	120	1.03	15	
Molybdenum	2.51	0.00500	0.200	0.374	1070	80	120	5.76	15	S
Selenium	0.207	0.00500	0.200	0.00282	102	80	120	0.267	15	
Thallium	0.198	0.00150	0.200	0	98.9	80	120	1.84	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160819A

Sample ID	ICV-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 12:09:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.104	0.00250	0.100	0	104	90	110			
Arsenic	0.101	0.00500	0.100	0	101	90	110			
Barium	0.101	0.0100	0.100	0	101	90	110			
Cadmium	0.0995	0.00100	0.100	0	99.5	90	110			
Calcium	2.40	0.300	2.50	0	96.1	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	0.0999	0.00100	0.100	0	99.9	90	110			
Molybdenum	0.0938	0.00500	0.100	0	93.8	90	110			
Selenium	0.103	0.00500	0.100	0	103	90	110			
Thallium	0.0989	0.00150	0.100	0	98.9	90	110			

Sample ID	LCVL-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 12:13:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00224	0.00250	0.00200	0	112	70	130			
Arsenic	0.00546	0.00500	0.00500	0	109	70	130			
Barium	0.00533	0.0100	0.00500	0	107	70	130			
Cadmium	0.00105	0.00100	0.00100	0	105	70	130			
Calcium	0.103	0.300	0.100	0	103	70	130			
Chromium	0.00543	0.00500	0.00500	0	109	70	130			
Cobalt	0.00554	0.00500	0.00500	0	111	70	130			
Lead	0.00113	0.00100	0.00100	0	113	70	130			
Molybdenum	0.00515	0.00500	0.00500	0	103	70	130			
Selenium	0.00608	0.00500	0.00500	0	122	70	130			
Thallium	0.00106	0.00150	0.00100	0	106	70	130			

Sample ID	CCV5-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 5:18:00 PM	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	0.206	0.00500	0.200	0	103	90	110			
Barium	0.201	0.0100	0.200	0	100	90	110			
Cadmium	0.195	0.00100	0.200	0	97.3	90	110			
Calcium	4.99	0.300	5.00	0	99.9	90	110			
Chromium	0.202	0.00500	0.200	0	101	90	110			
Cobalt	0.204	0.00500	0.200	0	102	90	110			
Lead	0.203	0.00100	0.200	0	102	90	110			
Molybdenum	0.193	0.00500	0.200	0	96.7	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160819A

Sample ID	CCV5-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 5:18:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.207	0.00500	0.200	0	104	90	110			
Thallium	0.207	0.00150	0.200	0	104	90	110			

Sample ID	LCVL5-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 5:22:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00232	0.00250	0.00200	0	116	70	130			
Arsenic	0.00549	0.00500	0.00500	0	110	70	130			
Barium	0.00536	0.0100	0.00500	0	107	70	130			
Cadmium	0.00103	0.00100	0.00100	0	103	70	130			
Calcium	0.108	0.300	0.100	0	108	70	130			
Chromium	0.00549	0.00500	0.00500	0	110	70	130			
Cobalt	0.00548	0.00500	0.00500	0	110	70	130			
Lead	0.00113	0.00100	0.00100	0	113	70	130			
Molybdenum	0.00488	0.00500	0.00500	0	97.5	70	130			
Selenium	0.00563	0.00500	0.00500	0	113	70	130			
Thallium	0.00111	0.00150	0.00100	0	111	70	130			

Sample ID	CCV6-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 6:02:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.205	0.00250	0.200	0	103	90	110			
Arsenic	0.207	0.00500	0.200	0	103	90	110			
Barium	0.196	0.0100	0.200	0	97.9	90	110			
Cadmium	0.185	0.00100	0.200	0	92.6	90	110			
Calcium	5.07	0.300	5.00	0	101	90	110			
Chromium	0.188	0.00500	0.200	0	93.9	90	110			
Cobalt	0.196	0.00500	0.200	0	97.9	90	110			
Lead	0.202	0.00100	0.200	0	101	90	110			
Molybdenum	0.189	0.00500	0.200	0	94.5	90	110			
Selenium	0.215	0.00500	0.200	0	108	90	110			
Thallium	0.203	0.00150	0.200	0	102	90	110			

Sample ID	LCVL6-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 6:06:00 PM	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	0.00547	0.00500	0.00500	0	109	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160819A

Sample ID	LCVL6-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 6:06:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.00542	0.0100	0.00500	0	108	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Calcium	0.109	0.300	0.100	0	109	70	130			
Chromium	0.00524	0.00500	0.00500	0	105	70	130			
Cobalt	0.00530	0.00500	0.00500	0	106	70	130			
Lead	0.00109	0.00100	0.00100	0	109	70	130			
Molybdenum	0.00510	0.00500	0.00500	0	102	70	130			
Selenium	0.00645	0.00500	0.00500	0	129	70	130			
Thallium	0.00111	0.00150	0.00100	0	111	70	130			

Sample ID	CCV7-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 6:31:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.205	0.00250	0.200	0	102	90	110			
Arsenic	0.208	0.00500	0.200	0	104	90	110			
Barium	0.198	0.0100	0.200	0	99.0	90	110			
Cadmium	0.190	0.00100	0.200	0	94.9	90	110			
Calcium	4.94	0.300	5.00	0	98.8	90	110			
Chromium	0.200	0.00500	0.200	0	99.8	90	110			
Cobalt	0.205	0.00500	0.200	0	102	90	110			
Lead	0.204	0.00100	0.200	0	102	90	110			
Molybdenum	0.189	0.00500	0.200	0	94.3	90	110			
Selenium	0.208	0.00500	0.200	0	104	90	110			
Thallium	0.204	0.00150	0.200	0	102	90	110			

Sample ID	LCVL7-160819	Batch ID:	R87706	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160819A	Analysis Date:	8/19/2016 6:35:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00228	0.00250	0.00200	0	114	70	130			
Arsenic	0.00552	0.00500	0.00500	0	110	70	130			
Barium	0.00510	0.0100	0.00500	0	102	70	130			
Cadmium	0.000970	0.00100	0.00100	0	97.0	70	130			
Calcium	0.104	0.300	0.100	0	104	70	130			
Chromium	0.00536	0.00500	0.00500	0	107	70	130			
Cobalt	0.00541	0.00500	0.00500	0	108	70	130			
Lead	0.00108	0.00100	0.00100	0	108	70	130			
Molybdenum	0.00480	0.00500	0.00500	0	96.1	70	130			
Selenium	0.00607	0.00500	0.00500	0	121	70	130			
Thallium	0.00111	0.00150	0.00100	0	111	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160822B

The QC data in batch 76817 applies to the following samples: 1608133-03A, 1608133-04A, 1608133-05A, 1608133-06A, 1608133-07A, 1608133-08A, 1608133-09A, 1608133-10A, 1608133-11A, 1608133-12A, 1608133-13A, 1608133-14A, 1608133-15A

Sample ID	MB-76817		Batch ID:	76817		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160822B		Analysis Date:	8/22/2016 1:51:00 PM		Prep Date:	8/16/2016	
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	LCS-76817			Batch ID:	76817		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_160822B		Analysis Date:	8/22/2016 1:53:00 PM		Prep Date:	8/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	0.200	0.00100	0.200	0	99.8	80	120			
Boron	0.196	0.0300	0.200	0	98.2	80	120			
Lithium	0.200	0.0100	0.200	0	100	80	120			

Sample ID	LCSD-76817			Batch ID:	76817		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_160822B		Analysis Date:	8/22/2016 1:55:00 PM		Prep Date:	8/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	0.201	0.00100	0.200	0	100	80	120	0.617	15	
Boron	0.199	0.0300	0.200	0	99.4	80	120	1.23	15	
Lithium	0.207	0.0100	0.200	0	104	80	120	3.27	15	

Sample ID	1608136-06A SD	Batch ID:	76817	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 2:01:00 PM	Prep Date:	8/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	<0.0150	0.0500	0	0				0	10	
Boron	1.40	1.50	0	1.19				16.8	10	R
Lithium	<0.250	0.500	0	0				0	10	

Sample ID	1608136-06A PDS			Batch ID:	76817		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_160822B		Analysis Date:	8/22/2016 2:03:00 PM		Prep Date:	8/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	1.86	0.0100	2.00	0	93.0	80	120			
Boron	3.08	0.300	2.00	1.19	94.9	80	120			
Lithium	1.82	0.100	2.00	0	91.1	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160822B

Sample ID	1608136-06A MS	Batch ID:	76817	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 2:23:00 PM	Prep Date:	8/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.171	0.0100	0.200	0	85.3	80	120			
Boron	1.15	0.300	0.200	1.19	-18.0	80	120			S
Lithium	0.189	0.100	0.200	0	94.3	80	120			

Sample ID	1608136-06A MSD	Batch ID:	76817	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 2:25:00 PM	Prep Date:	8/16/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.174	0.0100	0.200	0	87.2	80	120	2.20	15	
Boron	1.15	0.300	0.200	1.19	-18.1	80	120	0.025	15	S
Lithium	0.176	0.100	0.200	0	87.9	80	120	7.03	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160822B

Sample ID	ICV2-160822	Batch ID:	R87729	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 1:35:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.100	0.00100	0.100	0	100	90	110			
Boron	0.0948	0.0300	0.100	0	94.8	90	110			
Calcium	2.32	0.300	2.50	0	92.9	90	110			
Lithium	0.0966	0.0100	0.100	0	96.6	90	110			

Sample ID	ILCVL2-160822	Batch ID:	R87729	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 1:44:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00125	0.00100	0.00100	0	125	70	130			
Boron	0.0215	0.0300	0.0200	0	108	70	130			
Calcium	0.106	0.300	0.100	0	106	70	130			
Lithium	0.0114	0.0100	0.0100	0	114	70	130			

Sample ID	CCV2-160822	Batch ID:	R87729	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 2:35:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.209	0.00100	0.200	0	105	90	110			
Boron	0.213	0.0300	0.200	0	106	90	110			
Calcium	4.78	0.300	5.00	0	95.5	90	110			
Lithium	0.213	0.0100	0.200	0	107	90	110			

Sample ID	LCVL2-160822	Batch ID:	R87729	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 2:46:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00131	0.00100	0.00100	0	131	70	130			S
Boron	0.0245	0.0300	0.0200	0	123	70	130			
Calcium	0.0981	0.300	0.100	0	98.1	70	130			
Lithium	0.0113	0.0100	0.0100	0	113	70	130			

Sample ID	CCV3-160822	Batch ID:	R87729	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 3:07:00 PM	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	0.220	0.0300	0.200	0	110	90	110			
Lithium	0.219	0.0100	0.200	0	110	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160822B

Sample ID	LCVL3-160822	Batch ID:	R87729	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 3:17:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium		0.00108	0.00100	0.00100	0	108	70	130			
Boron		0.0214	0.0300	0.0200	0	107	70	130			
Lithium		0.0113	0.0100	0.0100	0	113	70	130			

Sample ID	CCV4-160822	Batch ID:	R87729	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 3:35:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.192	0.00100	0.200	0	96.0	90	110			
Lithium	0.202	0.0100	0.200	0	101	90	110			

Sample ID	LCVL4-160822	Batch ID:	R87729	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160822B	Analysis Date:	8/22/2016 3:46:00 PM	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			
Lithium		0.0101	0.0100	0.0100	0	101	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

The QC data in batch 76893 applies to the following samples: 1608133-16A, 1608133-17A, 1608133-18A, 1608133-19A, 1608133-20A, 1608133-21A, 1608133-22A

Sample ID	MB-76893		Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160823B		Analysis Date:	8/23/2016 12:12:00 PM		Prep Date:	8/22/2016	
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	LCS-76893		Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS4_160823B		Analysis Date:	8/23/2016 12:14:00 PM		Prep Date:	8/22/2016	
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	0.199	0.00500	0.200	0	99.5	80	120			
Barium	0.196	0.0100	0.200	0	97.8	80	120			
Beryllium	0.201	0.00100	0.200	0	101	80	120			
Cadmium	0.203	0.00100	0.200	0	101	80	120			
Calcium	4.82	0.300	5.00	0	96.4	80	120			
Chromium	0.203	0.00500	0.200	0	101	80	120			
Cobalt	0.202	0.00500	0.200	0	101	80	120			
Lead	0.196	0.00100	0.200	0	98.2	80	120			
Lithium	0.199	0.0100	0.200	0	99.6	80	120			
Molybdenum	0.201	0.00500	0.200	0	100	80	120			
Selenium	0.197	0.00500	0.200	0	98.5	80	120			
Thallium	0.196	0.00150	0.200	0	98.0	80	120			

Sample ID	LCSD-76893	Batch ID:	76893	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 12:16:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.208	0.00250	0.200	0	104	80	120	2.52	15	
Arsenic	0.199	0.00500	0.200	0	99.3	80	120	0.240	15	
Barium	0.196	0.0100	0.200	0	98.1	80	120	0.297	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

Sample ID	LCSD-76893			Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_160823B		Analysis Date:	8/23/2016 12:16:00 PM		Prep Date:	8/22/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	0.198	0.00100	0.200	0	98.9	80	120	1.69	15	
Cadmium	0.202	0.00100	0.200	0	101	80	120	0.195	15	
Calcium	4.79	0.300	5.00	0	95.9	80	120	0.478	15	
Chromium	0.201	0.00500	0.200	0	101	80	120	0.842	15	
Cobalt	0.203	0.00500	0.200	0	101	80	120	0.425	15	
Lead	0.200	0.00100	0.200	0	99.8	80	120	1.66	15	
Lithium	0.197	0.0100	0.200	0	98.4	80	120	1.20	15	
Molybdenum	0.202	0.00500	0.200	0	101	80	120	0.688	15	
Selenium	0.198	0.00500	0.200	0	98.9	80	120	0.390	15	
Thallium	0.197	0.00150	0.200	0	98.4	80	120	0.336	15	

Sample ID	1608181-05A SD		Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD		Run ID:	ICP-MS4_160823B		Analysis Date:	8/23/2016 12:22:00 PM		Prep Date:	8/22/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00722	0.0125	0	0.00670				7.61	10	
Arsenic	0.0275	0.0250	0	0.0274				0.353	10	
Barium	0.0761	0.0500	0	0.0743				2.38	10	
Beryllium	<0.00150	0.00500	0	0.000692				0	10	
Cadmium	<0.00150	0.00500	0	0.000325				0	10	
Chromium	<0.0100	0.0250	0	0.00533				0	10	
Cobalt	<0.0150	0.0250	0	0.00556				0	10	
Lead	0.00462	0.00500	0	0.00469				1.55	10	
Lithium	0.267	0.0500	0	0.242				9.42	10	
Molybdenum	<0.0100	0.0250	0	0.00903				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID: 1608181-05A PDS	Batch ID: 76893	TestNo: SW6020A	Units: mg/L							
SampType: PDS	Run ID: ICP-MS4_160823B	Analysis Date: 8/23/2016 12:42:00 PM	Prep Date: 8/22/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.219	0.00250	0.200	0.00670	106	80	120			
Arsenic	0.235	0.00500	0.200	0.0274	104	80	120			
Barium	0.267	0.0100	0.200	0.0743	96.4	80	120			
Beryllium	0.174	0.00100	0.200	0.000692	86.7	80	120			
Cadmium	0.185	0.00100	0.200	0.000325	92.6	80	120			
Chromium	0.193	0.00500	0.200	0.00533	93.6	80	120			
Cobalt	0.191	0.00500	0.200	0.00556	92.9	80	120			
Lead	0.203	0.00100	0.200	0.00469	99.3	80	120			
Lithium	0.368	0.0100	0.200	0.243	63.0	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

Sample ID	1608181-05A PDS	Batch ID:	76893	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 12:42:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.197	0.00500	0.200	0.00903	93.9	80	120			
Selenium	0.210	0.00500	0.200	0	105	80	120			
Thallium	0.198	0.00150	0.200	0	98.8	80	120			

Sample ID	1608181-05A MS	Batch ID:	76893	TestNo:	SW6020A	Units:	mg/L				
SampType:	MS	Run ID:	ICP-MS4_160823B	Analysis Date: 8/23/2016 12:44:00 PM		Prep Date:	8/22/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony		0.207	0.00250	0.200	0.00670	100	80	120			
Arsenic		0.241	0.00500	0.200	0.0274	107	80	120			
Barium		0.269	0.0100	0.200	0.0743	97.2	80	120			
Beryllium		0.178	0.00100	0.200	0.000692	88.7	80	120			
Cadmium		0.188	0.00100	0.200	0.000325	93.6	80	120			
Calcium		587	0.300	5.00	573	282	80	120			S
Chromium		0.191	0.00500	0.200	0.00533	92.6	80	120			
Cobalt		0.192	0.00500	0.200	0.00556	93.0	80	120			
Lead		0.203	0.00100	0.200	0.00469	99.1	80	120			
Lithium		0.388	0.0100	0.200	0.243	72.5	80	120			S
Molybdenum		0.207	0.00500	0.200	0.00903	98.8	80	120			
Selenium		0.210	0.00500	0.200	0	105	80	120			
Thallium		0.198	0.00150	0.200	0	98.8	80	120			

Sample ID	1608181-05A MSD	Batch ID:	76893	TestNo:	SW6020A			Units:	mg/L		
SampType:	MSD	Run ID:	ICP-MS4_160823B	Analysis Date: 8/23/2016 12:46:00 PM				Prep Date:	8/22/2016		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony		0.209	0.00250	0.200	0.00670	101	80	120	0.721	15	
Arsenic		0.240	0.00500	0.200	0.0274	106	80	120	0.404	15	
Barium		0.270	0.0100	0.200	0.0743	97.9	80	120	0.517	15	
Beryllium		0.175	0.00100	0.200	0.000692	86.9	80	120	1.95	15	
Cadmium		0.185	0.00100	0.200	0.000325	92.5	80	120	1.27	15	
Calcium		591	0.300	5.00	573	357	80	120	0.637	15	S
Chromium		0.190	0.00500	0.200	0.00533	92.1	80	120	0.519	15	
Cobalt		0.191	0.00500	0.200	0.00556	92.9	80	120	0.044	15	
Lead		0.206	0.00100	0.200	0.00469	100	80	120	1.30	15	
Lithium		0.392	0.0100	0.200	0.243	74.9	80	120	1.21	15	S
Molybdenum		0.205	0.00500	0.200	0.00903	98.2	80	120	0.647	15	
Selenium		0.218	0.00500	0.200	0	109	80	120	3.68	15	
Thallium		0.200	0.00150	0.200	0	100	80	120	1.23	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

The QC data in batch 76895 applies to the following samples: 1608133-23A, 1608133-24A, 1608133-25A, 1608133-26A, 1608133-27A

Sample ID MB-76895	Batch ID: 76895	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_160823B	Analysis Date: 8/23/2016 2:47:00 PM	Prep Date: 8/22/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	<0.000800	0.00250								
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								
Thallium	<0.000500	0.00150								

Sample ID LCS-76895	Batch ID: 76895	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_160823B	Analysis Date: 8/23/2016 2:49:00 PM	Prep Date: 8/22/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.211	0.00250	0.200	0	106	80	120			
Barium	0.199	0.0100	0.200	0	99.7	80	120			
Beryllium	0.195	0.00100	0.200	0	97.6	80	120			
Cadmium	0.200	0.00100	0.200	0	100	80	120			
Calcium	4.95	0.300	5.00	0	98.9	80	120			
Chromium	0.200	0.00500	0.200	0	99.8	80	120			
Cobalt	0.199	0.00500	0.200	0	99.6	80	120			
Lead	0.199	0.00100	0.200	0	99.3	80	120			
Lithium	0.193	0.0100	0.200	0	96.7	80	120			
Molybdenum	0.195	0.00500	0.200	0	97.6	80	120			
Thallium	0.197	0.00150	0.200	0	98.5	80	120			

Sample ID LCSD-76895	Batch ID: 76895	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS4_160823B	Analysis Date: 8/23/2016 2:51:00 PM	Prep Date: 8/22/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.210	0.00250	0.200	0	105	80	120	0.404	15	
Barium	0.199	0.0100	0.200	0	99.6	80	120	0.096	15	
Beryllium	0.194	0.00100	0.200	0	97.1	80	120	0.534	15	
Cadmium	0.200	0.00100	0.200	0	99.8	80	120	0.137	15	
Calcium	4.83	0.300	5.00	0	96.7	80	120	2.29	15	
Chromium	0.196	0.00500	0.200	0	98.2	80	120	1.60	15	
Cobalt	0.200	0.00500	0.200	0	99.9	80	120	0.293	15	
Lead	0.198	0.00100	0.200	0	98.8	80	120	0.463	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

Sample ID	LCSD-76895	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 2:51:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.195	0.0100	0.200	0	97.5	80	120	0.771	15	
Molybdenum	0.196	0.00500	0.200	0	98.2	80	120	0.676	15	
Thallium	0.197	0.00150	0.200	0	98.4	80	120	0.125	15	

Sample ID	1608210-05A MS	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 3:18:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.186	0.00250	0.200	0.00110	92.5	80	120			
Barium	0.366	0.0100	0.200	0.175	95.9	80	120			
Beryllium	0.123	0.00100	0.200	0.00194	60.3	80	120			S
Cadmium	0.177	0.00100	0.200	0.000340	88.5	80	120			
Calcium	1100	0.300	5.00	1070	657	80	120			S
Chromium	0.329	0.00500	0.200	0.191	68.8	80	120			S
Cobalt	0.190	0.00500	0.200	0.0273	81.1	80	120			
Lead	0.225	0.00100	0.200	0.0238	101	80	120			
Lithium	1.82	0.0100	0.200	1.98	-80.3	80	120			S
Molybdenum	0.197	0.00500	0.200	0.00359	96.6	80	120			
Thallium	0.201	0.00150	0.200	0	100	80	120			

Sample ID	1608210-05A MSD	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 3:20:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.175	0.00250	0.200	0.00110	87.1	80	120	6.01	15	
Barium	0.364	0.0100	0.200	0.175	94.5	80	120	0.800	15	
Beryllium	0.118	0.00100	0.200	0.00194	58.0	80	120	3.79	15	S
Cadmium	0.178	0.00100	0.200	0.000340	88.9	80	120	0.375	15	
Calcium	1090	0.300	5.00	1070	503	80	120	0.700	15	S
Chromium	0.318	0.00500	0.200	0.191	63.1	80	120	3.49	15	S
Cobalt	0.189	0.00500	0.200	0.0273	80.6	80	120	0.584	15	
Lead	0.224	0.00100	0.200	0.0238	100	80	120	0.170	15	
Lithium	1.70	0.0100	0.200	1.98	-138	80	120	6.61	15	S
Molybdenum	0.195	0.00500	0.200	0.00359	95.6	80	120	0.984	15	
Thallium	0.202	0.00150	0.200	0	101	80	120	0.458	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

Sample ID	ICV-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 11:07:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.104	0.00250	0.100	0	104	90	110			
Arsenic	0.0998	0.00500	0.100	0	99.8	90	110			
Barium	0.0969	0.0100	0.100	0	96.9	90	110			
Beryllium	0.0994	0.00100	0.100	0	99.4	90	110			
Cadmium	0.0990	0.00100	0.100	0	99.0	90	110			
Calcium	2.36	0.300	2.50	0	94.3	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	0.0931	0.0100	0.100	0	93.1	90	110			
Molybdenum	0.0962	0.00500	0.100	0	96.2	90	110			
Selenium	0.0991	0.00500	0.100	0	99.1	90	110			
Thallium	0.0984	0.00150	0.100	0	98.4	90	110			

Sample ID	LCVL-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 11:11:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00222	0.00250	0.00200	0	111	70	130			
Arsenic	0.00516	0.00500	0.00500	0	103	70	130			
Barium	0.00518	0.0100	0.00500	0	104	70	130			
Beryllium	0.00109	0.00100	0.00100	0	109	70	130			
Cadmium	0.00103	0.00100	0.00100	0	103	70	130			
Calcium	0.105	0.300	0.100	0	105	70	130			
Chromium	0.00544	0.00500	0.00500	0	109	70	130			
Cobalt	0.00534	0.00500	0.00500	0	107	70	130			
Lead	0.00107	0.00100	0.00100	0	107	70	130			
Lithium	0.0102	0.0100	0.0100	0	102	70	130			
Molybdenum	0.00527	0.00500	0.00500	0	105	70	130			
Selenium	0.00562	0.00500	0.00500	0	112	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID	CCV1-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 11:55:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.203	0.00250	0.200	0	102	90	110			
Arsenic	0.207	0.00500	0.200	0	103	90	110			
Barium	0.204	0.0100	0.200	0	102	90	110			
Beryllium	0.205	0.00100	0.200	0	103	90	110			
Cadmium	0.209	0.00100	0.200	0	104	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

Sample ID	CCV1-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 11:55:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.78	0.300	5.00	0	95.6	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	0.207	0.00100	0.200	0	104	90	110			
Lithium	0.205	0.0100	0.200	0	102	90	110			
Molybdenum	0.210	0.00500	0.200	0	105	90	110			
Selenium	0.203	0.00500	0.200	0	101	90	110			
Thallium	0.205	0.00150	0.200	0	103	90	110			

Sample ID	LCVL1-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 12:00:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00243	0.00250	0.00200	0	121	70	130			
Arsenic	0.00524	0.00500	0.00500	0	105	70	130			
Barium	0.00523	0.0100	0.00500	0	105	70	130			
Beryllium	0.000968	0.00100	0.00100	0	96.8	70	130			
Cadmium	0.00105	0.00100	0.00100	0	105	70	130			
Calcium	0.0995	0.300	0.100	0	99.5	70	130			
Chromium	0.00534	0.00500	0.00500	0	107	70	130			
Cobalt	0.00537	0.00500	0.00500	0	107	70	130			
Lead	0.00104	0.00100	0.00100	0	104	70	130			
Lithium	0.00961	0.0100	0.0100	0	96.1	70	130			
Molybdenum	0.00520	0.00500	0.00500	0	104	70	130			
Selenium	0.00528	0.00500	0.00500	0	106	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV2-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 12:56:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.210	0.00250	0.200	0	105	90	110			
Arsenic	0.220	0.00500	0.200	0	110	90	110			
Barium	0.210	0.0100	0.200	0	105	90	110			
Beryllium	0.207	0.00100	0.200	0	103	90	110			
Cadmium	0.209	0.00100	0.200	0	105	90	110			
Calcium	4.92	0.300	5.00	0	98.4	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	0.208	0.00100	0.200	0	104	90	110			
Lithium	0.214	0.0100	0.200	0	107	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

Sample ID	CCV2-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 12:56:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.205	0.00500	0.200	0	103	90	110			
Selenium	0.216	0.00500	0.200	0	108	90	110			
Thallium	0.206	0.00150	0.200	0	103	90	110			

Sample ID	LCVL2-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 1:10:00 PM	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	0.00551	0.00500	0.00500	0	110	70	130			
Barium	0.00522	0.0100	0.00500	0	104	70	130			
Beryllium	0.00101	0.00100	0.00100	0	101	70	130			
Cadmium	0.00106	0.00100	0.00100	0	106	70	130			
Calcium	0.106	0.300	0.100	0	106	70	130			
Chromium	0.00524	0.00500	0.00500	0	105	70	130			
Cobalt	0.00534	0.00500	0.00500	0	107	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			
Lithium	0.00967	0.0100	0.0100	0	96.7	70	130			
Molybdenum	0.00483	0.00500	0.00500	0	96.5	70	130			
Selenium	0.00610	0.00500	0.00500	0	122	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV3-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 1:48:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.210	0.00250	0.200	0	105	90	110			
Arsenic	0.214	0.00500	0.200	0	107	90	110			
Barium	0.211	0.0100	0.200	0	105	90	110			
Beryllium	0.211	0.00100	0.200	0	106	90	110			
Cadmium	0.211	0.00100	0.200	0	106	90	110			
Calcium	4.87	0.300	5.00	0	97.4	90	110			
Chromium	0.211	0.00500	0.200	0	105	90	110			
Cobalt	0.209	0.00500	0.200	0	105	90	110			
Lead	0.208	0.00100	0.200	0	104	90	110			
Lithium	0.213	0.0100	0.200	0	107	90	110			
Molybdenum	0.212	0.00500	0.200	0	106	90	110			
Selenium	0.211	0.00500	0.200	0	105	90	110			
Thallium	0.206	0.00150	0.200	0	103	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

Sample ID	LCVL3-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 1:58:00 PM	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	0.00574	0.00500	0.00500	0	115	70	130			
Barium	0.00526	0.0100	0.00500	0	105	70	130			
Beryllium	0.00110	0.00100	0.00100	0	110	70	130			
Cadmium	0.00107	0.00100	0.00100	0	107	70	130			
Calcium	0.104	0.300	0.100	0	104	70	130			
Chromium	0.00545	0.00500	0.00500	0	109	70	130			
Cobalt	0.00536	0.00500	0.00500	0	107	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			
Lithium	0.0114	0.0100	0.0100	0	114	70	130			
Molybdenum	0.00520	0.00500	0.00500	0	104	70	130			
Selenium	0.00575	0.00500	0.00500	0	115	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID	CCV4-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 2:23:00 PM	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	0.215	0.00500	0.200	0	108	90	110			
Barium	0.209	0.0100	0.200	0	104	90	110			
Beryllium	0.202	0.00100	0.200	0	101	90	110			
Cadmium	0.207	0.00100	0.200	0	103	90	110			
Calcium	4.84	0.300	5.00	0	96.9	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			
Cobalt	0.206	0.00500	0.200	0	103	90	110			
Lead	0.205	0.00100	0.200	0	103	90	110			
Lithium	0.206	0.0100	0.200	0	103	90	110			
Molybdenum	0.204	0.00500	0.200	0	102	90	110			
Selenium	0.214	0.00500	0.200	0	107	90	110			
Thallium	0.203	0.00150	0.200	0	101	90	110			

Sample ID	LCVL4-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 2:42:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00221	0.00250	0.00200	0	111	70	130			
Arsenic	0.00570	0.00500	0.00500	0	114	70	130			
Barium	0.00543	0.0100	0.00500	0	109	70	130			
Beryllium	0.00108	0.00100	0.00100	0	108	70	130			
Cadmium	0.00105	0.00100	0.00100	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160823B

Sample ID	LCVL4-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 2:42:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.110	0.300	0.100	0	110	70	130			
Chromium	0.00543	0.00500	0.00500	0	109	70	130			
Cobalt	0.00541	0.00500	0.00500	0	108	70	130			
Lead	0.00109	0.00100	0.00100	0	109	70	130			
Lithium	0.0103	0.0100	0.0100	0	103	70	130			
Molybdenum	0.00510	0.00500	0.00500	0	102	70	130			
Selenium	0.00616	0.00500	0.00500	0	123	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID	CCV5-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 3:42:00 PM	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			
Barium	0.213	0.0100	0.200	0	106	90	110			
Beryllium	0.194	0.00100	0.200	0	97.1	90	110			
Cadmium	0.207	0.00100	0.200	0	103	90	110			
Calcium	4.86	0.300	5.00	0	97.1	90	110			
Chromium	0.202	0.00500	0.200	0	101	90	110			
Cobalt	0.200	0.00500	0.200	0	99.8	90	110			
Lead	0.206	0.00100	0.200	0	103	90	110			
Lithium	0.190	0.0100	0.200	0	94.8	90	110			
Molybdenum	0.201	0.00500	0.200	0	101	90	110			
Thallium	0.204	0.00150	0.200	0	102	90	110			

Sample ID	LCVL5-160823	Batch ID:	R87756	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160823B	Analysis Date:	8/23/2016 3:52:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00221	0.00250	0.00200	0	111	70	130			
Barium	0.00522	0.0100	0.00500	0	104	70	130			
Beryllium	0.00102	0.00100	0.00100	0	102	70	130			
Cadmium	0.00105	0.00100	0.00100	0	105	70	130			
Calcium	0.111	0.300	0.100	0	111	70	130			
Chromium	0.00518	0.00500	0.00500	0	104	70	130			
Cobalt	0.00517	0.00500	0.00500	0	103	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0111	0.0100	0.0100	0	111	70	130			
Molybdenum	0.00497	0.00500	0.00500	0	99.4	70	130			
Thallium	0.00100	0.00150	0.00100	0	100	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

The QC data in batch 76893 applies to the following samples: 1608133-16A, 1608133-17A, 1608133-18A, 1608133-19A, 1608133-20A, 1608133-21A, 1608133-22A

Sample ID	MB-76893	Batch ID:	76893	TestNo:	SW6020A	Units:	mg/L			
SampType:	MBLK	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 3:18:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron <0.0100 0.0300

Sample ID	LCS-76893			Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_160824B		Analysis Date:	8/24/2016 3:20:00 PM		Prep Date:	8/22/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron 0.206 0.0300 0.200 0 103 80 120

Sample ID	LCSD-76893			Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_160824B		Analysis Date:	8/24/2016 3:22:00 PM		Prep Date:	8/22/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron 0.195 0.0300 0.200 0 97.3 80 120 5.62 15

Sample ID	1608181-05A SD		Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD		Run ID:	ICP-MS4_160824B		Analysis Date:	8/24/2016 3:28:00 PM		Prep Date:	8/22/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium 548 150 0 544 0.634 10

Sample ID	1608181-05A PDS	Batch ID:	76893	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 3:49:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium 1010 30.0 500 544 92.7 80 120

Sample ID	1608181-05A MS			Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	MS			Run ID:	ICP-MS4_160824B		Analysis Date:	8/24/2016 3:51:00 PM		Prep Date:	8/22/2016	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 1.18 3.00 0.200 1.11 36.1 80 120 S

Sample ID	1608181-05A MSD	Batch ID:	76893	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 3:53:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 1.43 3.00 0.200 1.11 161 80 120 19.1 15 SR

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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

Sample ID	1608181-05A SD	Batch ID:	76893	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 4:14:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.669	0.300	0	0.596				11.6	10	R

Sample ID	1608181-05A PDS			Batch ID:	76893		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_160824B		Analysis Date:	8/24/2016 4:16:00 PM		Prep Date:	8/22/2016	
Analyte	Result		RL	SPK value		Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.979		0.0600	0.400		0.596	95.8	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

The QC data in batch 76895 applies to the following samples: 1608133-23A, 1608133-24A, 1608133-25A, 1608133-26A, 1608133-27A

Sample ID	MB-76895		Batch ID:	76895		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160824B		Analysis Date:	8/24/2016 6:11:00 PM		Prep Date:	8/22/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	<0.00200	0.00500								
Boron	<0.0100	0.0300								
Selenium	<0.00200	0.00500								

Sample ID	LCS-76895		Batch ID:	76895		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS4_160824B		Analysis Date:	8/24/2016 6:13:00 PM		Prep Date:	8/22/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.191	0.00500	0.200	0	95.6	80	120			
Boron	0.206	0.0300	0.200	0	103	80	120			
Selenium	0.196	0.00500	0.200	0	97.9	80	120			

Sample ID	LCSD-76895	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 6:15:00 PM	Prep Date:	8/22/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.190	0.00500	0.200	0	95.1	80	120	0.519	15	
Boron	0.205	0.0300	0.200	0	103	80	120	0.554	15	
Selenium	0.194	0.00500	0.200	0	97.1	80	120	0.779	15	

Sample ID	1608210-05A SD	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 7:51:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	1020	150	0	1020				0.169	10	
Lithium	3.35	5.00	0	3.44				2.39	10	

Sample ID: 1608210-05A PDS	Batch ID: 76895	TestNo: SW6020A	Units: mg/L							
SampType: PDS	Run ID: ICP-MS4_160824B	Analysis Date: 8/24/2016 8:11:00 PM	Prep Date: 8/22/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	1500	30.0	500	1020	96.1	80	120			
Lithium	24.0	1.00	20.0	3.44	103	80	120			

Sample ID	1608210-05A MS		Batch ID:	76895		TestNo:	SW6020A		Units:	mg/L	
SampType:	MS		Run ID:	ICP-MS4_160824B		Analysis Date:	8/24/2016 8:13:00 PM		Prep Date:	8/22/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.238	0.500	0.200	0	119	80	120			
Boron	5.34	3.00	0.200	4.69	326	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

Sample ID	1608210-05A MS	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 8:13:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.266	0.500	0.200	0	133	80	120			S

Sample ID	1608210-05A MSD	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 8:15:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.216	0.500	0.200	0	108	80	120	9.91	15	
Boron	5.41	3.00	0.200	4.69	357	80	120	1.18	15	S
Selenium	0.211	0.500	0.200	0	105	80	120	23.1	15	R

Sample ID	1608210-05A SD	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 8:41:00 PM	Prep Date:	8/22/2016			
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	0.170	0.500	0	0.164				3.63	10	
Beryllium	<0.0150	0.0500	0	0				0	10	
Boron	4.57	1.50	0	4.16				9.40	10	
Cadmium	<0.0150	0.0500	0	0				0	10	
Chromium	0.224	0.250	0	0.220				2.14	10	
Cobalt	<0.150	0.250	0	0.0308				0	10	
Lead	0.0218	0.0500	0	0.0219				0.137	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	1608210-05A PDS	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 8:51:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	1.97	0.0250	2.00	0	98.3	80	120			
Arsenic	2.00	0.0500	2.00	0	100	80	120			
Barium	2.07	0.100	2.00	0.164	95.2	80	120			
Beryllium	1.84	0.0100	2.00	0	92.0	80	120			
Boron	5.78	0.300	2.00	4.16	80.9	80	120			
Cadmium	1.73	0.0100	2.00	0	86.5	80	120			
Chromium	2.08	0.0500	2.00	0.220	93.0	80	120			
Cobalt	1.90	0.0500	2.00	0.0308	93.6	80	120			
Lead	1.84	0.0100	2.00	0.0219	90.7	80	120			
Molybdenum	1.79	0.0500	2.00	0	89.5	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

Sample ID	1608210-05A PDS	Batch ID:	76895	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 8:51:00 PM	Prep Date:	8/22/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	2.00	0.0500	2.00	0	99.9	80	120			
Thallium	1.82	0.0150	2.00	0	90.8	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

Sample ID	ICV2-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 1:09:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.105	0.00250	0.100	0	105	90	110			
Arsenic	0.102	0.00500	0.100	0	102	90	110			
Barium	0.101	0.0100	0.100	0	101	90	110			
Beryllium	0.102	0.00100	0.100	0	102	90	110			
Boron	0.0984	0.0300	0.100	0	98.4	90	110			
Cadmium	0.0993	0.00100	0.100	0	99.3	90	110			
Calcium	2.41	0.300	2.50	0	96.5	90	110			
Chromium	0.107	0.00500	0.100	0	107	90	110			
Cobalt	0.105	0.00500	0.100	0	105	90	110			
Lead	0.100	0.00100	0.100	0	100	90	110			
Lithium	0.0948	0.0100	0.100	0	94.8	90	110			
Molybdenum	0.0973	0.00500	0.100	0	97.3	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.0998	0.00150	0.100	0	99.8	90	110			

Sample ID	ILCVL2-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 1:23:00 PM	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	0.00491	0.0100	0.00500	0	98.2	70	130			
Beryllium	0.00105	0.00100	0.00100	0	105	70	130			
Boron	0.0223	0.0300	0.0200	0	111	70	130			
Cadmium	0.000996	0.00100	0.00100	0	99.6	70	130			
Calcium	0.0954	0.300	0.100	0	95.4	70	130			
Chromium	0.00509	0.00500	0.00500	0	102	70	130			
Cobalt	0.00515	0.00500	0.00500	0	103	70	130			
Lead	0.000995	0.00100	0.00100	0	99.5	70	130			
Lithium	0.00919	0.0100	0.0100	0	91.9	70	130			
Molybdenum	0.00496	0.00500	0.00500	0	99.2	70	130			
Selenium	0.00548	0.00500	0.00500	0	110	70	130			
Thallium	0.000998	0.00150	0.00100	0	99.8	70	130			

Sample ID	CCV3-140402	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 2:50:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.207	0.0300	0.200	0	103	90	110			
Calcium	4.75	0.300	5.00	0	95.0	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

Sample ID	LCVL3-140402	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 3:05:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0234	0.0300	0.0200	0	117	70	130			
Calcium	0.0955	0.300	0.100	0	95.5	70	130			

Sample ID	CCV4-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 3:55:00 PM	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	4.79	0.300	5.00	0	95.8	90	110			

Sample ID	LCVL4-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 4:03:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0229	0.0300	0.0200	0	115	70	130			
Calcium	0.0911	0.300	0.100	0	91.1	70	130			

Sample ID	CCV5-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 5:12:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.217	0.0300	0.200	0	109	90	110			
Calcium	4.74	0.300	5.00	0	94.7	90	110			

Sample ID	LCVL5-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 5:24:00 PM	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	0.0910	0.300	0.100	0	91.0	70	130			

Sample ID	CCV6-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 5:57:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.193	0.00500	0.200	0	96.6	90	110			
Boron	0.211	0.0300	0.200	0	105	90	110			
Calcium	4.75	0.300	5.00	0	95.0	90	110			
Selenium	0.196	0.00500	0.200	0	98.1	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

Sample ID	LCVL6-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 6:07:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00490	0.00500	0.00500	0	98.1	70	130			
Boron	0.0223	0.0300	0.0200	0	111	70	130			
Calcium	0.0897	0.300	0.100	0	89.7	70	130			
Selenium	0.00526	0.00500	0.00500	0	105	70	130			

Sample ID	CCV7-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 6:52:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.192	0.00500	0.200	0	96.2	90	110			
Boron	0.210	0.0300	0.200	0	105	90	110			
Calcium	4.77	0.300	5.00	0	95.4	90	110			
Selenium	0.199	0.00500	0.200	0	99.3	90	110			

Sample ID	LCVL7-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 7:02:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00485	0.00500	0.00500	0	97.0	70	130			
Boron	0.0239	0.0300	0.0200	0	120	70	130			
Calcium	0.0928	0.300	0.100	0	92.8	70	130			
Selenium	0.00478	0.00500	0.00500	0	95.6	70	130			

Sample ID	CCV8-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 7:35:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.190	0.00500	0.200	0	95.2	90	110			
Boron	0.206	0.0300	0.200	0	103	90	110			
Calcium	4.69	0.300	5.00	0	93.9	90	110			
Lithium	0.216	0.0100	0.200	0	108	90	110			
Selenium	0.194	0.00500	0.200	0	97.1	90	110			

Sample ID	LCVL8-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 7:45:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00499	0.00500	0.00500	0	99.7	70	130			
Boron	0.0223	0.0300	0.0200	0	111	70	130			
Calcium	0.0958	0.300	0.100	0	95.8	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

Sample ID	LCVL8-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 7:45:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00528	0.00500	0.00500	0	106	70	130			

Sample ID	CCV9-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 8:25:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.193	0.00250	0.200	0	96.7	90	110			
Arsenic	0.194	0.00500	0.200	0	96.8	90	110			
Barium	0.193	0.0100	0.200	0	96.5	90	110			
Beryllium	0.203	0.00100	0.200	0	101	90	110			
Boron	0.212	0.0300	0.200	0	106	90	110			
Cadmium	0.187	0.00100	0.200	0	93.4	90	110			
Calcium	4.81	0.300	5.00	0	96.2	90	110			
Chromium	0.193	0.00500	0.200	0	96.6	90	110			
Cobalt	0.194	0.00500	0.200	0	97.1	90	110			
Lead	0.185	0.00100	0.200	0	92.6	90	110			
Lithium	0.219	0.0100	0.200	0	110	90	110			
Molybdenum	0.188	0.00500	0.200	0	94.0	90	110			
Selenium	0.200	0.00500	0.200	0	99.9	90	110			
Thallium	0.185	0.00150	0.200	0	92.7	90	110			

Sample ID	LCVL9-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 8:35:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00200	0.00250	0.00200	0	100	70	130			
Arsenic	0.00502	0.00500	0.00500	0	100	70	130			
Barium	0.00491	0.0100	0.00500	0	98.2	70	130			
Beryllium	0.000978	0.00100	0.00100	0	97.8	70	130			
Boron	0.0235	0.0300	0.0200	0	117	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Chromium	0.00504	0.00500	0.00500	0	101	70	130			
Cobalt	0.00506	0.00500	0.00500	0	101	70	130			
Lead	0.000944	0.00100	0.00100	0	94.4	70	130			
Lithium	0.0103	0.0100	0.0100	0	103	70	130			
Molybdenum	0.00456	0.00500	0.00500	0	91.1	70	130			
Selenium	0.00508	0.00500	0.00500	0	102	70	130			
Thallium	0.000931	0.00150	0.00100	0	93.1	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160824B

Sample ID	CCV10-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 9:02:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.191	0.00250	0.200	0	95.4	90	110			
Arsenic	0.195	0.00500	0.200	0	97.3	90	110			
Barium	0.193	0.0100	0.200	0	96.5	90	110			
Beryllium	0.204	0.00100	0.200	0	102	90	110			
Boron	0.213	0.0300	0.200	0	106	90	110			
Cadmium	0.185	0.00100	0.200	0	92.4	90	110			
Chromium	0.193	0.00500	0.200	0	96.4	90	110			
Cobalt	0.193	0.00500	0.200	0	96.7	90	110			
Lead	0.184	0.00100	0.200	0	92.1	90	110			
Molybdenum	0.185	0.00500	0.200	0	92.6	90	110			
Selenium	0.201	0.00500	0.200	0	100	90	110			
Thallium	0.185	0.00150	0.200	0	92.7	90	110			

Sample ID	LCVL10-160824	Batch ID:	R87787	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160824B	Analysis Date:	8/24/2016 9:12:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00192	0.00250	0.00200	0	96.2	70	130			
Arsenic	0.00497	0.00500	0.00500	0	99.4	70	130			
Barium	0.00487	0.0100	0.00500	0	97.5	70	130			
Beryllium	0.00120	0.00100	0.00100	0	120	70	130			
Boron	0.0213	0.0300	0.0200	0	107	70	130			
Cadmium	0.000888	0.00100	0.00100	0	88.8	70	130			
Chromium	0.00499	0.00500	0.00500	0	99.7	70	130			
Cobalt	0.00504	0.00500	0.00500	0	101	70	130			
Lead	0.000929	0.00100	0.00100	0	92.9	70	130			
Molybdenum	0.00454	0.00500	0.00500	0	90.7	70	130			
Selenium	0.00556	0.00500	0.00500	0	111	70	130			
Thallium	0.000937	0.00150	0.00100	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160825A

Sample ID	ICV-160825	Batch ID:	R87816	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160825A	Analysis Date:	8/25/2016 2:28:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	2.34	0.300	2.50	0	93.6	90	110			
Lithium	0.100	0.0100	0.100	0	100	90	110			

Sample ID	LCVL-160825	Batch ID:	R87816	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160825A	Analysis Date:	8/25/2016 2:33:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.0943	0.300	0.100	0	94.3	70	130			
Lithium	0.0110	0.0100	0.0100	0	110	70	130			

Sample ID	CCV1-160825	Batch ID:	R87816	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160825A	Analysis Date:	8/25/2016 3:19:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.63	0.300	5.00	0	92.5	90	110			
Lithium	0.187	0.0100	0.200	0	93.3	90	110			

Sample ID	LCVL1-160825	Batch ID:	R87816	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160825A	Analysis Date:	8/25/2016 3:34:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.0931	0.300	0.100	0	93.1	70	130			
Lithium	0.00905	0.0100	0.0100	0	90.5	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160826B

Sample ID	ICV-160826	Batch ID:	R87821	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160826B	Analysis Date:	8/26/2016 11:10:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium 0.100 0.00100 0.100 0 100 90 110

Sample ID	LCVL-160826	Batch ID:	R87821	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160826B	Analysis Date:	8/26/2016 11:15:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium 0.000927 0.00100 0.00100 0 92.7 70 130

Sample ID	CCV1-160826	Batch ID:	R87821	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160826B	Analysis Date:	8/26/2016 11:41:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium 0.197 0.00100 0.200 0 98.7 90 110

Sample ID	LCVL1-160826	Batch ID:	R87821	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160826B	Analysis Date:	8/26/2016 11:52:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium 0.000948 0.00100 0.00100 0 94.8 70 130

Sample ID	CCV2-160826	Batch ID:	R87821	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160826B	Analysis Date:	8/26/2016 12:36:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium 0.207 0.00100 0.200 0 103 90 110

Sample ID	LCVL2-160826	Batch ID:	R87821	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160826B	Analysis Date:	8/26/2016 12:41:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium 0.00119 0.00100 0.00100 0 119 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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_160815A

The QC data in batch 76808 applies to the following samples: 1608133-01D, 1608133-02D, 1608133-03D, 1608133-04D, 1608133-05D, 1608133-06D, 1608133-07D, 1608133-08D, 1608133-09D

Sample ID	MB-76808		Batch ID:	76808		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC4_160815A		Analysis Date:	8/15/2016 10:51:35 AM		Prep Date:	8/15/2016	
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	LCS-76808		Batch ID:	76808		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC4_160815A		Analysis Date:	8/15/2016 11:06:35 AM		Prep Date:	8/15/2016	
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	3.99	0.400	4.000	0	99.7	90	110			
Sulfate	31.4	3.00	30.00	0	105	90	110			

Sample ID	LCSD-76808		Batch ID:	76808		TestNo:	E300		Units:	mg/L	
SampType:	LCSD		Run ID:	IC4_160815A		Analysis Date:	8/15/2016 11:21:35 AM		Prep Date:	8/15/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.2	1.00	10.00	0	102	90	110	0.064	20	
Fluoride	4.00	0.400	4.000	0	99.9	90	110	0.229	20	
Sulfate	31.5	3.00	30.00	0	105	90	110	0.566	20	

Sample ID	1608133-07DMS		Batch ID:	76808		TestNo:	E300		Units:	mg/L	
SampType:	MS		Run ID:	IC4_160815A		Analysis Date:	8/15/2016 6:13:34 PM		Prep Date:	8/15/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	278	10.0	200.0	64.88	107	90	110			
Fluoride	202	4.00	200.0	0	101	90	110			
Sulfate	334	30.0	200.0	119.9	107	90	110			

Sample ID	1608133-07DMSD		Batch ID:	76808		TestNo:	E300		Units:	mg/L	
SampType:	MSD		Run ID:	IC4_160815A		Analysis Date:	8/15/2016 6:28:34 PM		Prep Date:	8/15/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	280	10.0	200.0	64.88	107	90	110	0.468	20	
Fluoride	203	4.00	200.0	0	101	90	110	0.428	20	
Sulfate	335	30.0	200.0	119.9	107	90	110	0.194	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_160815A

Sample ID	ICV-160815	Batch ID:	R87629		TestNo:	E300		Units:	mg/L		
SampType:	ICV	Run ID:	IC4_160815A		Analysis Date:	8/15/2016 10:15:59 AM		Prep Date:			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		25.6	1.00	25.00	0	102	90	110			
Fluoride		9.79	0.400	10.00	0	97.9	90	110			
Sulfate		78.7	3.00	75.00	0	105	90	110			

Sample ID	CCV1-160815	Batch ID:	R87629	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160815A	Analysis Date:	8/15/2016 2:54:08 PM	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	4.05	0.400	4.000	0	101	90	110			
Sulfate	32.5	3.00	30.00	0	108	90	110			

Sample ID	CCV2-160815	Batch ID:	R87629	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160815A	Analysis Date:	8/15/2016 6:58:34 PM	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	4.07	0.400	4.000	0	102	90	110			
Sulfate	32.1	3.00	30.00	0	107	90	110			

Sample ID	CCV3-160815	Batch ID:	R87629	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160815A	Analysis Date:	8/15/2016 8:28:34 PM	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	4.09	0.400	4.000	0	102	90	110			
Sulfate	32.1	3.00	30.00	0	107	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_160816A

The QC data in batch 76820 applies to the following samples: 1608133-10D, 1608133-11D, 1608133-12D, 1608133-13D, 1608133-14D, 1608133-15D, 1608133-16D, 1608133-17D, 1608133-18D

Sample ID	MB-76820	Batch ID:	76820	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC4_160816A	Analysis Date:	8/16/2016 10:21:13 AM	Prep Date:	8/16/2016			
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	LCS-76820			Batch ID:	76820		TestNo:	E300		Units:	mg/L	
SampType:	LCS			Run ID:	IC4_160816A		Analysis Date:	8/16/2016 10:36:13 AM		Prep Date:	8/16/2016	
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	4.00	0.400	4.000	0	99.9	90	110			
Sulfate	32.1	3.00	30.00	0	107	90	110			

Sample ID	LCSD-76820			Batch ID:	76820		TestNo:	E300		Units:	mg/L	
SampType:	LCSD			Run ID:	IC4_160816A		Analysis Date:	8/16/2016 10:51:13 AM		Prep Date:	8/16/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	10.5	1.00	10.00	0	105	90	110	0.125	20	
Fluoride	4.02	0.400	4.000	0	100	90	110	0.579	20	
Sulfate	32.1	3.00	30.00	0	107	90	110	0.230	20	

Sample ID	1608133-10DMS			Batch ID:	76820			TestNo:	E300			Units:	mg/L		
SampType:	MS			Run ID:	IC4_160816A			Analysis Date:	8/16/2016 3:07:33 PM			Prep Date:	8/16/2016		
Analyte	Result			RL	SPK value		Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Chloride	345	10.0	200.0	135.6	105	90	110			
Fluoride	201	4.00	200.0	0	101	90	110			
Sulfate	321	30.0	200.0	104.7	108	90	110			

Sample ID	1608133-10DMSD			Batch ID:	76820			TestNo:	E300			Units:	mg/L		
SampType:	MSD			Run ID:	IC4_160816A			Analysis Date:	8/16/2016 3:22:33 PM			Prep Date:	8/16/2016		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Chloride	346	10.0	200.0	135.6	105	90	110	0.130	20	
Fluoride	202	4.00	200.0	0	101	90	110	0.556	20	
Sulfate	322	30.0	200.0	104.7	109	90	110	0.536	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_160816A

Sample ID	ICV-160816	Batch ID:	R87647	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC4_160816A	Analysis Date:	8/16/2016 9:44:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	26.1	1.00	25.00	0	104	90	110			
Fluoride	9.82	0.400	10.00	0	98.2	90	110			
Sulfate	80.4	3.00	75.00	0	107	90	110			

Sample ID	CCV1-160816	Batch ID:	R87647	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160816A	Analysis Date:	8/16/2016 1:57:44 PM	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	4.06	0.400	4.000	0	102	90	110			
Sulfate	32.3	3.00	30.00	0	108	90	110			

Sample ID	CCV2-160816	Batch ID:	R87647	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160816A	Analysis Date:	8/16/2016 4:22:33 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.6	1.00	10.00	0	106	90	110			
Fluoride	4.06	0.400	4.000	0	102	90	110			
Sulfate	32.4	3.00	30.00	0	108	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_160817A

The QC data in batch 76838 applies to the following samples: 1608133-19D, 1608133-20D, 1608133-21D, 1608133-22D, 1608133-23D, 1608133-24D, 1608133-25D, 1608133-26D, 1608133-27D

Sample ID	MB-76838		Batch ID:	76838		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC4_160817A		Analysis Date:	8/17/2016 10:32:13 AM		Prep Date:	8/17/2016	
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	LCS-76838		Batch ID:	76838		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC4_160817A		Analysis Date:	8/17/2016 10:47:13 AM		Prep Date:	8/17/2016	
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	3.90	0.400	4.000	0	97.4	90	110			
Sulfate	31.7	3.00	30.00	0	106	90	110			

Sample ID	LCSD-76838		Batch ID:	76838		TestNo:	E300		Units:	mg/L	
SampType:	LCSD		Run ID:	IC4_160817A		Analysis Date:	8/17/2016 11:02:13 AM		Prep Date:	8/17/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.5	1.00	10.00	0	105	90	110	0.354	20	
Fluoride	4.04	0.400	4.000	0	101	90	110	3.66	20	
Sulfate	31.8	3.00	30.00	0	106	90	110	0.411	20	

Sample ID	1608133-27DMS		Batch ID:	76838		TestNo:	E300		Units:	mg/L	
SampType:	MS		Run ID:	IC4_160817A		Analysis Date:	8/17/2016 4:26:31 PM		Prep Date:	8/17/2016	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	2540	100	2000	424.7	106	90	110			
Fluoride	1990	40.0	2000	0	99.5	90	110			
Sulfate	2600	300	2000	483.6	106	90	110			

Sample ID	1608133-27DMSD		Batch ID:	76838		TestNo:	E300		Units:	mg/L	
SampType:	MSD		Run ID:	IC4_160817A		Analysis Date:	8/17/2016 4:41:31 PM		Prep Date:	8/17/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2570	100	2000	424.7	107	90	110	1.18	20	
Fluoride	2020	40.0	2000	0	101	90	110	1.31	20	
Sulfate	2630	300	2000	483.6	107	90	110	1.16	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_160817A

Sample ID	ICV-160817	Batch ID:	R87682	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC4_160817A	Analysis Date:	8/17/2016 9:50:02 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	26.1	1.00	25.00	0	104	90	110			
Fluoride	9.78	0.400	10.00	0	97.8	90	110			
Sulfate	80.2	3.00	75.00	0	107	90	110			

Sample ID	CCV1-160817	Batch ID:	R87682	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160817A	Analysis Date:	8/17/2016 2:01:29 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.6	1.00	10.00	0	106	90	110			
Fluoride	3.95	0.400	4.000	0	98.6	90	110			
Sulfate	32.3	3.00	30.00	0	108	90	110			

Sample ID	CCV2-160817	Batch ID:	R87682	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_160817A	Analysis Date:	8/17/2016 5:11:31 PM	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	3.97	0.400	4.000	0	99.2	90	110			
Sulfate	32.1	3.00	30.00	0	107	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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160816A

The QC data in batch 76818 applies to the following samples: 1608133-01D, 1608133-02D, 1608133-03D, 1608133-04D, 1608133-05D, 1608133-06D, 1608133-07D, 1608133-08D, 1608133-09D, 1608133-10D

Sample ID	1608119-02D-DUP	Batch ID:	76818	TestNo:	M4500-H+ B	Units:	pH Units@18.9°C
SampType:	DUP	Run ID:	TITRATOR_160816A	Analysis Date:	8/16/2016 9:53:00 AM	Prep Date:	8/16/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		7.34	0	0	7.360		0.272 5

Sample ID	1608133-10D-DUP	Batch ID:	76818	TestNo:	M4500-H+ B	Units:	pH Units@17.7°C
SampType:	DUP	Run ID:	TITRATOR_160816A	Analysis Date:	8/16/2016 10:55:00 AM	Prep Date:	8/16/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		6.18	0	0	6.190		0.162 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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160816A

Sample ID	ICV-160816	Batch ID:	R87635	TestNo:	M4500-H+ B	Units:	pH	Units@22°C			
SampType:	ICV	Run ID:	TITRATOR_160816A	Analysis Date:	8/16/2016 8:52:00 AM	Prep Date:	8/16/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH 9.93 0 10.00 0 99.3 99 101

Sample ID	CCV1-160816			Batch ID:	R87635		TestNo:	M4500-H+ B		Units:	pH Units@20.6°C		
SampType:	CCV			Run ID:	TITRATOR_160816A		Analysis Date:	8/16/2016 10:11:00 AM		Prep Date:	8/16/2016		
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	CCV2-160816			Batch ID:	R87635		TestNo:	M4500-H+ B		Units:	pH Units@21°C	
SampType:	CCV			Run ID:	TITRATOR_160816A		Analysis Date:	8/16/2016 10:45:00 AM		Prep Date:	8/16/2016	
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	CCV3-160816			Batch ID:	R87635		TestNo:	M4500-H+ B		Units:	pH Units@21.4°C	
SampType:	CCV			Run ID:	TITRATOR_160816A		Analysis Date:	8/16/2016 10:56:00 AM		Prep Date:	8/16/2016	
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

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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160817B

The QC data in batch 76839 applies to the following samples: 1608133-11D, 1608133-12D, 1608133-13D, 1608133-14D, 1608133-15D, 1608133-16D, 1608133-17D, 1608133-18D, 1608133-19D, 1608133-20D, 1608133-21D, 1608133-22D, 1608133-23D, 1608133-24D, 1608133-25D, 1608133-26D, 1608133-27D

Sample ID	1608133-11D-DUP	Batch ID:	76839	TestNo:	M4500-H+ B	Units:	pH Units@20°C
SampType:	DUP	Run ID:	TITRATOR_160817B	Analysis Date:	8/17/2016 11:16:00 AM	Prep Date:	8/17/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	4.54	0	0	4.530				0.221		5

Sample ID	1608133-21D-DUP	Batch ID:	76839	TestNo:	M4500-H+ B	Units:	pH Units@20.7°C
SampType:	DUP	Run ID:	TITRATOR_160817B	Analysis Date:	8/17/2016 11:43:00 AM	Prep Date:	8/17/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.77	0	0	6.750				0.296		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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160817B

Sample ID	ICV-160817	Batch ID:	R87653	TestNo:	M4500-H+ B	Units:	pH Units@22.2°C			
SampType:	ICV	Run ID:	TITRATOR_160817B	Analysis Date:	8/17/2016 9:01:00 AM	Prep Date:	8/17/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	9.93	0	10.00	0	99.3	99	101			

Sample ID	CCV1-160817	Batch ID:	R87653		TestNo:	M4500-H+ B		Units:	pH Units@22.3°C		
SampType:	CCV	Run ID:	TITRATOR_160817B		Analysis Date:	8/17/2016 10:30:00 AM		Prep Date:	8/17/2016		
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			

Sample ID	CCV2-160817		Batch ID:	R87653		TestNo:	M4500-H+ B		Units:	pH Units@21.7°C		
SampType:	CCV		Run ID:	TITRATOR_160817B		Analysis Date:	8/17/2016 11:37:00 AM		Prep Date:	8/17/2016		
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	CCV3-160817		Batch ID:	R87653		TestNo:	M4500-H+ B		Units:	pH Units@22°C		
SampType:	CCV		Run ID:	TITRATOR_160817B		Analysis Date:	8/17/2016 11:58:00 AM		Prep Date:	8/17/2016		
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			

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: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: WC_160815A

The QC data in batch 76803 applies to the following samples: 1608133-01D, 1608133-02D, 1608133-03D, 1608133-04D, 1608133-05D

Sample ID	MB-76803	Batch ID:	76803	TestNo:	M2540C	Units:	mg/L
SampType:	MBLK	Run ID:	WC_160815A	Analysis Date:	8/16/2016 8:42:00 AM	Prep Date:	8/15/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-76803	Batch ID:	76803	TestNo:	M2540C	Units:	mg/L
SampType:	LCS	Run ID:	WC_160815A	Analysis Date:	8/16/2016 8:42:00 AM	Prep Date:	8/15/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 761 10.0 745.6 0 102 90 113

Sample ID	1608117-05C-DUP	Batch ID:	76803	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_160815A	Analysis Date:	8/16/2016 8:42:00 AM	Prep Date:	8/15/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 782 10.0 0 801.0 2.40 5

Sample ID	1608117-06C-DUP	Batch ID:	76803	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_160815A	Analysis Date:	8/16/2016 8:42:00 AM	Prep Date:	8/15/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 1590 50.0 0 1600 0.627 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

CLIENT: Pastor, Behling & Wheeler
Work Order: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: WC_160816D

The QC data in batch 76831 applies to the following samples: 1608133-06D, 1608133-07D, 1608133-08D, 1608133-09D, 1608133-10D, 1608133-11D, 1608133-12D, 1608133-13D, 1608133-14D, 1608133-15D, 1608133-16D, 1608133-17D, 1608133-18D, 1608133-19D, 1608133-20D, 1608133-21D, 1608133-22D, 1608133-23D, 1608133-24D

Sample ID	MB-76831	Batch ID:	76831	TestNo:	M2540C	Units:	mg/L			
SampType:	MBLK	Run ID:	WC_160816D	Analysis Date:	8/17/2016 8:42:00 AM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-76831	Batch ID:	76831	TestNo:	M2540C	Units:	mg/L			
SampType:	LCS	Run ID:	WC_160816D	Analysis Date:	8/17/2016 8:42:00 AM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 741 10.0 745.6 0 99.4 90 113

Sample ID	1608133-21D-DUP	Batch ID:	76831	TestNo:	M2540C	Units:	mg/L			
SampType:	DUP	Run ID:	WC_160816D	Analysis Date:	8/17/2016 8:42:00 AM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 3640 50.0 0 3780 3.77 5

Sample ID	1608133-24D-DUP	Batch ID:	76831	TestNo:	M2540C	Units:	mg/L			
SampType:	DUP	Run ID:	WC_160816D	Analysis Date:	8/17/2016 8:42:00 AM	Prep Date:	8/16/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 1120 50.0 0 1150 3.09 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

CLIENT: Pastor, Behling & Wheeler
Work Order: 1608133
Project: Luminant - Martin Lake

ANALYTICAL QC SUMMARY REPORT

RunID: WC_160818B

The QC data in batch 76858 applies to the following samples: 1608133-25D, 1608133-26D, 1608133-27D

Sample ID	MB-76858	Batch ID:	76858	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_160818B	Analysis Date:	8/22/2016 8:40:00 AM	Prep Date:	8/18/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-76858	Batch ID:	76858	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_160818B	Analysis Date:	8/22/2016 8:40:00 AM	Prep Date:	8/18/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 747 10.0 745.6 0 100 90 113

Sample ID	1608133-25D-DUP	Batch ID:	76858	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_160818B	Analysis Date:	8/22/2016 8:40:00 AM	Prep Date:	8/18/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 1380 50.0 0 1430 3.56 5

Sample ID	1608181-01B-DUP	Batch ID:	76858	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_160818B	Analysis Date:	8/22/2016 8:40:00 AM	Prep Date:	8/18/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 22900 200 0 22720 0.702 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: 20160784

This report contains the analytical results for the 27 sample(s) received under chain of custody by ESC Lab Sciences on 8/16/2016 10:12:00 AM. These samples are associated with your 1608133 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



Client : DHL Analytical, Inc.
 Client Project : 1608133
 Lab Number : 20160784
 Date Reported : 09/13/16
 Date Received : 08/16/16
 Page Number : 2 of 9

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160784-01

Client ID : H-28

Date Sampled : 8/9/2016 9:30:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		1.68 +/- 0.969	0.847	pCi/l			
Radium-226	SM 7500 Ra B M*	0.265 +/- 0.306	0.451	pCi/l	08/24/16	08/26/16	AK
Radium-228	EPA 904*/9320*	1.41 +/- 0.663	0.396	pCi/l	09/07/16	09/10/16	JR

Lab ID : 20160784-02

Client ID : H-29

Date Sampled : 8/9/2016 10:35:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		0.261 +/- 1.12	0.752	pCi/l			
Radium-226	SM 7500 Ra B M*	0.261 +/- 0.150	0.174	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	-0.009 +/- 0.967	0.578	pCi/l	09/07/16	09/10/16	JR

Lab ID : 20160784-03

Client ID : H-31

Date Sampled : 8/9/2016 11:50:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		2.21 +/- 0.942	0.523	pCi/l			
Radium-226	SM 7500 Ra B M*	1.31 +/- 0.276	0.135	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.900 +/- 0.666	0.388	pCi/l	09/07/16	09/10/16	JR

Lab ID : 20160784-04

Client ID : H-30

Date Sampled : 8/9/2016 12:45:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium		0.927 +/- 1.00	0.813	pCi/l			
Radium-226	SM 7500 Ra B M*	0.203 +/- 0.140	0.171	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.724 +/- 0.860	0.642	pCi/l	09/07/16	09/10/16	JR



Client : DHL Analytical, Inc.
 Client Project : 1608133
 Lab Number : 20160784
 Date Reported : 09/13/16
 Date Received : 08/16/16
 Page Number : 3 of 9

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160784-05

Client ID : H-32

Date Sampled : 8/9/2016 1:50:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium	2.56 +/- 1.35	0.870	pCi/l				
Radium-226 SM 7500 Ra B M*	2.56 +/- 0.576	0.424	pCi/l		08/24/16	08/31/16	AK
Radium-228 EPA 904*/9320*	-0.008 +/- 0.769	0.446	pCi/l		09/07/16	09/10/16	JR

Lab ID : 20160784-06

Client ID : H-27

Date Sampled : 8/9/2016 2:50:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium	0.952 +/- 1.23	0.797	pCi/l				
Radium-226 SM 7500 Ra B M*	0.408 +/- 0.217	0.165	pCi/l		08/24/16	08/31/16	AK
Radium-228 EPA 904*/9320*	0.544 +/- 1.01	0.632	pCi/l		09/07/16	09/10/16	JR

Lab ID : 20160784-07

Client ID : H-33

Date Sampled : 8/9/2016 3:55:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium	0.759 +/- 0.958	0.660	pCi/l				
Radium-226 SM 7500 Ra B M*	0.110 +/- 0.106	0.149	pCi/l		08/24/16	08/31/16	AK
Radium-228 EPA 904*/9320*	0.649 +/- 0.852	0.511	pCi/l		09/07/16	09/10/16	JR

Lab ID : 20160784-08

Client ID : H-26

Date Sampled : 8/9/2016 4:45:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium	0.172 +/- 1.68	1.13	pCi/l				
Radium-226 SM 7500 Ra B M*	0.172 +/- 0.145	0.200	pCi/l		08/24/16	08/31/16	AK
Radium-228 EPA 904*/9320*	-0.529 +/- 1.53	0.932	pCi/l		09/07/16	09/10/16	JR



Client : DHL Analytical, Inc.
 Client Project : 1608133
 Lab Number : 20160784
 Date Reported : 09/13/16
 Date Received : 08/16/16
 Page Number : 4 of 9

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160784-09

Client ID : DUP-01

Date Sampled : 8/9/2016 2:38:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium		2.61 +/- 0.977	0.641	pCi/l			
Radium-226	SM 7500 Ra B M*	0.685 +/- 0.229	0.208	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	1.92 +/- 0.748	0.433	pCi/l	09/07/16	09/10/16	JR

Lab ID : 20160784-10

Client ID : PDP-25

Date Sampled : 8/10/2016 1:30:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium		0.658 +/- 0.998	0.657	pCi/l			
Radium-226	SM 7500 Ra B M*	0.417 +/- 0.199	0.170	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.241 +/- 0.799	0.487	pCi/l	09/07/16	09/10/16	JR

Lab ID : 20160784-11

Client ID : PDP-24

Date Sampled : 8/10/2016 11:00:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		3.10 +/- 1.26	0.825	pCi/l			
Radium-226	SM 7500 Ra B M*	0.735 +/- 0.219	0.197	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	2.36 +/- 1.04	0.628	pCi/l	09/07/16	09/10/16	JR

Lab ID : 20160784-12

Client ID : MW-17A

Date Sampled : 8/10/2016 10:20:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		0.871 +/- 1.25	0.827	pCi/l			
Radium-226	SM 7500 Ra B M*	0.343 +/- 0.158	0.120	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.528 +/- 1.09	0.707	pCi/l	09/07/16	09/10/16	JR



Client : DHL Analytical, Inc.
Client Project : 1608133
Lab Number : 20160784
Date Reported : 09/13/16
Date Received : 08/16/16
Page Number : 5 of 9

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160784-13
Client ID : PDP-23
Date Sampled : 8/10/2016 9:10:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.670 +/- 1.90	1.42	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.105 +/- 0.115	0.267	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.670 +/- 1.78	1.15	pCi/l	09/07/16	09/10/16	JR

Lab ID : 20160784-14
Client ID : MW-19
Date Sampled : 8/10/2016 3:00:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.304 +/- 1.183	0.767	pCi/l			
Radium-226	SM 7500 Ra B M*	0.223 +/- 0.133	0.144	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.081 +/- 1.05	0.623	pCi/l	09/07/16	09/12/16	JR

Lab ID : 20160784-15
Client ID : MW-20A
Date Sampled : 8/10/2016 2:10:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.66 +/- 1.16	0.715	pCi/l			
Radium-226	SM 7500 Ra B M*	0.607 +/- 0.242	0.200	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	1.05 +/- 0.918	0.515	pCi/l	09/07/16	09/12/16	JR

Lab ID : 20160784-16
Client ID : PDP-22
Date Sampled : 8/10/2016 9:20:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.42 +/- 1.04	0.567	pCi/l			
Radium-226	SM 7500 Ra B M*	0.793 +/- 0.221	0.092	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.628 +/- 0.817	0.475	pCi/l	09/07/16	09/12/16	JR



Client : DHL Analytical, Inc.
 Client Project : 1608133
 Lab Number : 20160784
 Date Reported : 09/13/16
 Date Received : 08/16/16
 Page Number : 6 of 9

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160784-17
Client ID : PDP-26
Date Sampled : 8/10/2016 10:30:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.581 +/- 0.935	0.617	pCi/l			
Radium-226	SM 7500 Ra B M*	0.133 +/- 0.104	0.133	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.448 +/- 0.831	0.484	pCi/l	09/07/16	09/12/16	JR

Lab ID : 20160784-18
Client ID : MW-18A
Date Sampled : 8/10/2016 11:30:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.742 +/- 1.22	0.771	pCi/l			
Radium-226	SM 7500 Ra B M*	0.288 +/- 0.149	0.164	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	0.454 +/- 1.07	0.607	pCi/l	09/07/16	09/12/16	JR

Lab ID : 20160784-19
Client ID : EB-1
Date Sampled : 8/10/2016 11:45:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.45 +/- 0.992	0.729	pCi/l			
Radium-226	SM 7500 Ra B M*	0.000 +/- 0.115	0.239	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	1.45 +/- 0.877	0.490	pCi/l	09/07/16	09/12/16	JR

Lab ID : 20160784-20
Client ID : BMW-11AR
Date Sampled : 8/11/2016 8:25:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		3.23 +/- 1.45	0.838	pCi/l			
Radium-226	SM 7500 Ra B M*	0.810 +/- 0.204	0.116	pCi/l	08/24/16	08/31/16	AK
Radium-228	EPA 904*/9320*	2.42 +/- 1.25	0.722	pCi/l	09/07/16	09/12/16	JR



Client : DHL Analytical, Inc.
 Client Project : 1608133
 Lab Number : 20160784
 Date Reported : 09/13/16
 Date Received : 08/16/16
 Page Number : 7 of 9

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160784-21
Client ID : BMW-19
Date Sampled : 8/11/2016 9:20:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.19 +/- 1.17	0.933	pCi/l			
Radium-226	SM 7500 Ra B M*	0.927 +/- 0.200	0.118	pCi/l	08/25/16	08/29/16	AK
Radium-228	EPA 904*/9320*	0.262 +/- 0.695	0.815	pCi/l	09/02/16	09/08/16	JR

Lab ID : 20160784-22
Client ID : BMW-18
Date Sampled : 8/11/2016 10:15:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.117 +/- 0.983	1.29	pCi/l			
Radium-226	SM 7500 Ra B M*	0.117 +/- 0.146	0.220	pCi/l	08/25/16	08/29/16	AK
Radium-228	EPA 904*/9320*	-0.353 +/- 0.837	1.07	pCi/l	09/02/16	09/08/16	JR

Lab ID : 20160784-23
Client ID : BMW-20
Date Sampled : 8/11/2016 10:50:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.72 +/- 0.838	0.980	pCi/l			
Radium-226	SM 7500 Ra B M*	0.322 +/- 0.140	0.147	pCi/l	08/25/16	08/29/16	AK
Radium-228	EPA 904*/9320*	1.40 +/- 0.698	0.833	pCi/l	09/02/16	09/08/16	JR

Lab ID : 20160784-24
Client ID : BMW-24
Date Sampled : 8/11/2016 8:50:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.36 +/- 0.937	1.06	pCi/l			
Radium-226	SM 7500 Ra B M*	0.564 +/- 0.185	0.116	pCi/l	08/25/16	08/29/16	AK
Radium-228	EPA 904*/9320*	0.791 +/- 0.752	0.942	pCi/l	09/02/16	09/08/16	JR



Client : DHL Analytical, Inc.
 Client Project : 1608133
 Lab Number : 20160784
 Date Reported : 09/13/16
 Date Received : 08/16/16
 Page Number : 8 of 9

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20160784-25
Client ID : BMW-23
Date Sampled : 8/11/2016 9:20:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		2.90 +/- 0.992	1.07	pCi/l			
Radium-226	SM 7500 Ra B M*	0.963 +/- 0.218	0.164	pCi/l	08/25/16	08/29/16	AK
Radium-228	EPA 904*/9320*	1.94 +/- 0.774	0.904	pCi/l	09/02/16	09/08/16	JR

Lab ID : 20160784-26
Client ID : BMW-22
Date Sampled : 8/11/2016 10:00:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		2.54 +/- 0.798	0.823	pCi/l			
Radium-226	SM 7500 Ra B M*	0.607 +/- 0.190	0.104	pCi/l	08/25/16	08/29/16	AK
Radium-228	EPA 904*/9320*	1.93 +/- 0.608	0.719	pCi/l	09/02/16	09/08/16	JR

Lab ID : 20160784-27
Client ID : BMW-21
Date Sampled : 8/11/2016 10:30:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.25 +/- 0.875	1.04	pCi/l			
Radium-226	SM 7500 Ra B M*	0.655 +/- 0.290	0.312	pCi/l	08/25/16	08/29/16	AK
Radium-228	EPA 904*/9320*	0.632 +/- 0.585	0.728	pCi/l	09/02/16	09/08/16	JR

Client : DHL Analytical, Inc.
 Client Project : 1608133
 Lab Number : 20160784
 Date Reported : 09/13/16
 Date Received : 08/16/16
 Page Number : 9 of 9

QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	-0.024	94.7			NC	0.923	108.0	101.0	6.5	R1125
Radium-226	-0.021	108.0			0.6	0.022	95.6	101.0	5.2	R1126
Radium-228	0.406	95.4			NC	0.159	95.1	98.8	3.8	R3850
Radium-228	0.402	84.4			NC	0.580	84.3	87.6	3.8	R3851

Lab Approval:



Ron Eidson
Director of Radiochemistry

LUMINANT

DHL Analytical, Inc.

2300 Double Creek Drive

Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1608133

CHAIN-OF-CUSTODY RECORD

Page 1 of 3

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

Acct #: DHLRRTX

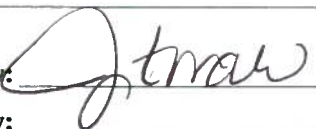
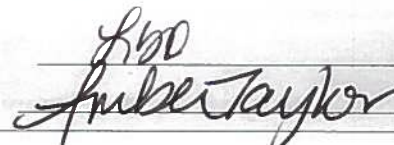
12-Aug-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
H-28	Aqueous	-01B	08/09/16 09:30 AM	500HDPEHNO3	1					
H-28	Aqueous	-01C	08/09/16 09:30 AM	500HDPEHNO3		1				
H-29	Aqueous	-02B	08/09/16 10:35 AM	500HDPEHNO3	1					
H-29	Aqueous	-02C	08/09/16 10:35 AM	500HDPEHNO3		1				
H-31	Aqueous	-03B	08/09/16 11:50 AM	500HDPEHNO3	1					
H-31	Aqueous	-03C	08/09/16 11:50 AM	500HDPEHNO3		1				
H-30	Aqueous	-04B	08/09/16 12:45 PM	500HDPEHNO3	1					
H-30	Aqueous	-04C	08/09/16 12:45 PM	500HDPEHNO3		1				
H-32	Aqueous	-05B	08/09/16 01:50 PM	500HDPEHNO3	1					
H-32	Aqueous	-05C	08/09/16 01:50 PM	500HDPEHNO3		1				
H-27	Aqueous	-06B	08/09/16 02:50 PM	500HDPEHNO3	1					
H-27	Aqueous	-06C	08/09/16 02:50 PM	500HDPEHNO3		1				
H-33	Aqueous	-07B	08/09/16 03:55 PM	500HDPEHNO3	1					
H-33	Aqueous	-07C	08/09/16 03:55 PM	500HDPEHNO3		1				
H-26	Aqueous	-08B	08/09/16 04:45 PM	500HDPEHNO3	1					
H-26	Aqueous	-08C	08/09/16 04:45 PM	500HDPEHNO3		1				
DUP-01	Aqueous	-09B	08/09/16 02:38 PM	500HDPEHNO3	1					
DUP-01	Aqueous	-09C	08/09/16 02:38 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

20160784
L854111

Relinquished by: 	Date/Time: 8/12/16 17:30	Received by: 	Date/Time: 8/12/16 17:30
Relinquished by: _____	_____	Received by: _____	Date/Time: 8/12/16 10:12

DHL Analytical, Inc.

2300 Double Creek Drive

Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1608133

CHAIN-OF-CUSTODY RECORD

Page 2 of 3

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

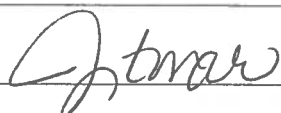
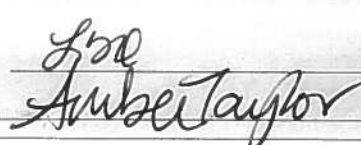
Acct #: DHLRRTX

12-Aug-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
PDP-25	Aqueous	-10B	08/10/16 01:30 PM	500HDPEHNO3	1					
PDP-25	Aqueous	-10C	08/10/16 01:30 PM	500HDPEHNO3		1				
PDP-24	Aqueous	-11B	08/10/16 11:00 AM	500HDPEHNO3	1					
PDP-24	Aqueous	-11C	08/10/16 11:00 AM	500HDPEHNO3		1				
MW-17A	Aqueous	-12B	08/10/16 10:20 AM	500HDPEHNO3	1					
MW-17A	Aqueous	-12C	08/10/16 10:20 AM	500HDPEHNO3		1				
PDP-23	Aqueous	-13B	08/10/16 09:10 AM	500HDPEHNO3	1					
PDP-23	Aqueous	-13C	08/10/16 09:10 AM	500HDPEHNO3		1				
MW-19	Aqueous	-14B	08/10/16 03:00 PM	500HDPEHNO3	1					
MW-19	Aqueous	-14C	08/10/16 03:00 PM	500HDPEHNO3		1				
MW-20A	Aqueous	-15B	08/10/16 02:10 PM	500HDPEHNO3	1					
MW-20A	Aqueous	-15C	08/10/16 02:10 PM	500HDPEHNO3		1				
PDP-22	Aqueous	-16B	08/10/16 09:20 AM	500HDPEHNO3	1					
PDP-22	Aqueous	-16C	08/10/16 09:20 AM	500HDPEHNO3		1				
PDP-26	Aqueous	-17B	08/10/16 10:30 AM	500HDPEHNO3	1					
PDP-26	Aqueous	-17C	08/10/16 10:30 AM	500HDPEHNO3		1				
MW-18A	Aqueous	-18B	08/10/16 11:30 AM	500HDPEHNO3	1					
MW-18A	Aqueous	-18C	08/10/16 11:30 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

Relinquished by: 	Date/Time: 8/12/16 17:30	Received by: 	Date/Time: 8/12/16 17:30
Relinquished by: _____	_____	Received by: _____	Date/Time: 8/12/16 10:12

DHL Analytical, Inc.

2300 Double Creek Drive
Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1608133

CHAIN-OF-CUSTODY RECORD

Page 3 of 3

Subcontractor:

ESC Laboratory
311 North Aspen
Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515
FAX:
Acct #: DHLRRTX

12-Aug-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
EB-1	Aqueous	-19B	08/10/16 11:45 AM	500HDPEHNO3	1					
EB-1	Aqueous	-19C	08/10/16 11:45 AM	500HDPEHNO3		1				
BMW-11AR	Aqueous	-20B	08/11/16 08:25 AM	500HDPEHNO3	1					
BMW-11AR	Aqueous	-20C	08/11/16 08:25 AM	500HDPEHNO3		1				
BMW-19	Aqueous	-21B	08/11/16 09:20 AM	500HDPEHNO3	1					
BMW-19	Aqueous	-21C	08/11/16 09:20 AM	500HDPEHNO3		1				
BMW-18	Aqueous	-22B	08/11/16 10:15 AM	500HDPEHNO3	1					
BMW-18	Aqueous	-22C	08/11/16 10:15 AM	500HDPEHNO3		1				
BMW-20	Aqueous	-23B	08/11/16 10:50 AM	500HDPEHNO3	1					
BMW-20	Aqueous	-23C	08/11/16 10:50 AM	500HDPEHNO3		1				
BMW-24	Aqueous	-24B	08/11/16 08:50 AM	500HDPEHNO3	1					
BMW-24	Aqueous	-24C	08/11/16 08:50 AM	500HDPEHNO3		1				
BMW-23	Aqueous	-25B	08/11/16 09:20 AM	500HDPEHNO3	1					
BMW-23	Aqueous	-25C	08/11/16 09:20 AM	500HDPEHNO3		1				
BMW-22	Aqueous	-26B	08/11/16 10:00 AM	500HDPEHNO3	1					
BMW-22	Aqueous	-26C	08/11/16 10:00 AM	500HDPEHNO3		1				
BMW-21	Aqueous	-27B	08/11/16 10:30 AM	500HDPEHNO3	1					
BMW-21	Aqueous	-27C	08/11/16 10:30 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

Date/Time

Date/Time

Relinquished by:

J. Toran

8/12/16 17:30

Received by:

Liso

8/12/16 17:30

Relinquished by:

Received by:

Amber Taylor

8/12/16 10:12

SAMPLE LOGIN

Date Received: 8/16/2016 10:12:0

Lab Number: 20160784

Due: 9/13/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160784-01 B	H-28	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-01 A	H-28	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-02 A	H-29	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-02 B	H-29	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-03 A	H-31	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-03 B	H-31	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-04 A	H-30	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-04 B	H-30	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-05 A	H-32	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-05 B	H-32	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-06 A	H-27	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-06 B	H-27	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-07 A	H-33	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-07 B	H-33	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						

20160784-08 B	H-26	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-08 A	H-26	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-09 A	DUP-01	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-09 B	DUP-01	NPW	08/09/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-10 A	PDP-25	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-10 B	PDP-25	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-11 A	PDP-24	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-11 B	PDP-24	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-12 A	MW-17A	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-12 B	MW-17A	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-13 A	PDP-23	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-13 B	PDP-23	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-14 B	MW-19	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-14 A	MW-19	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-15 A	MW-20A	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-15 B	MW-20A	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-16 A	PDP-22	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-16 B	PDP-22	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes

Radium-226						SM 7500 Ra B M*				
Radium-228						EPA 904*/9320*				
20160784-17 A	PDP-26	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
20160784-17 B	PDP-26	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
Radium-226						SM 7500 Ra B M*				
Radium-228						EPA 904*/9320*				
20160784-18 A	MW-18A	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
20160784-18 B	MW-18A	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
Radium-226						SM 7500 Ra B M*				
Radium-228						EPA 904*/9320*				
20160784-19 A	EB-1	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
20160784-19 B	EB-1	NPW	08/10/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
Radium-226						SM 7500 Ra B M*				
Radium-228						EPA 904*/9320*				
20160784-20 B	BMW-11AR	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
20160784-20 A	BMW-11AR	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
Radium-226						SM 7500 Ra B M*				
Radium-228						EPA 904*/9320*				
20160784-21 A	BMW-19	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
20160784-21 B	BMW-19	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
Radium-226						SM 7500 Ra B M*				
Radium-228						EPA 904*/9320*				
20160784-22 A	BMW-18	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
20160784-22 B	BMW-18	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
Radium-226						SM 7500 Ra B M*				
Radium-228						EPA 904*/9320*				
20160784-23 A	BMW-20	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
20160784-23 B	BMW-20	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
Radium-226						SM 7500 Ra B M*				
Radium-228						EPA 904*/9320*				
20160784-24 A	BMW-24	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	
20160784-24 B	BMW-24	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes	

Radium-226									
Radium-228									
20160784-25 A	BMW-23	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-25 B	BMW-23	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-26 A	BMW-22	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-26 B	BMW-22	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20160784-27 B	BMW-21	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
20160784-27 A	BMW-21	NPW	08/11/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						

CONTAINER INSPECTION

Coolers 2 Custody Seals Broken ☒ Temperature: Amc Ice ☐ Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken ☒ Chain of Custody Record ☒ Labels in Tact ☒ Radiation Survey Complete N/A

Anomalies

Inspected By: Amber Taylor DATE 8/16/16

QA or Designee Review: Raymond Thomas DATE 8/16/16

Sample Custodian Review: Stu DATE 8/16/16

Project Notes:



October 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: A-1 Landfill (Luminant)

Order No.: 1609136

Dear Will Vienne:

DHL Analytical, Inc. received 2 sample(s) on 9/15/2016 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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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 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:TXKA (503) 794-0625
GARRETT HARRIS
PASTOR, BEHLING & WHEELER, LLC
5416 PLAZA DRIVE

TEXARKANA, TX 75503
UNITED STATES US

SHIP DATE: 13SEP16
ACTWGT: 25.00 LB
CAD: 2026420/INET3790
DIMS: 14x12x12 IN

BILL SENDER

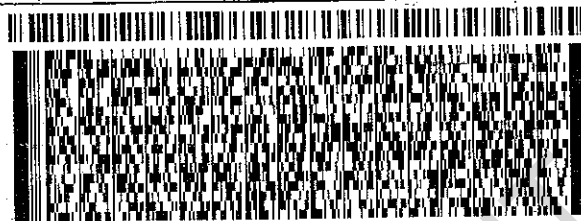
TO RECEIVING DEPARTMENT
DHL ANALYTICAL
2300 DOUBLE CREEK DRIVE

ROUND ROCK TX 78664

(512) 388-8222

REF 2240

INV
PO



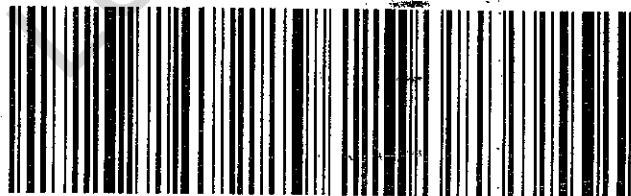
FedEx

TI TRK#
0 0201 7772 0961 4120

THU - 15 SEP 3:00P
STANDARD OVERNIGHT

A8 BSMA

78664
TX-US AUS



#76416 09/14 544J1/A053/14E8

CUSTODY SEAL

DATE

SIGNATURE

9/14/16

QEC

Quality Environmental Containers
800-255-3950 • 304-255-3900

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 9/15/2016

Work Order Number 1609136

Received by JB

Checklist completed by: Baua 9/15/2016
Signature Date

Reviewed by: JB 9/15/2016
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 ☐ 0.8 °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 Baua
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: A-1 Landfill (Luminant)
Lab Order: 1609136

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 9/15/16. A total of 2 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 9/21/16 the matrix spike and matrix spike duplicate recoveries were out of control limits for Calcium or Boron. 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 9/21/16 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 9/21/16 the PDS recovery was out of control limits for Calcium. This is flagged accordingly. The serial dilution was within control limits for this analyte. No further corrective actions were taken.

MERCURY ANALYSIS

For Mercury analysis performed on 9/20/16 the matrix spike and matrix spike duplicate recoveries were below 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.

ANIONS ANALYSIS

CLIENT: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)
Lab Order: 1609136

CASE NARRATIVE

For Anions analysis performed on 9/15/16 the LCSD recovery was slightly above control limits for Chloride. This is flagged accordingly in the QC summary report. No further corrective actions were taken.

LUMINANT

CLIENT: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)
Lab Order: 1609136**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1609136-01	BMW-26		09/13/16 12:30 PM	9/15/2016
1609136-02	BMW-27		09/13/16 01:30 PM	9/15/2016

LUMINANT

Lab Order: 1609136
Client: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1609136-01A	BMW-26	09/13/16 12:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/19/16 08:42 AM	77250
	BMW-26	09/13/16 12:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/19/16 08:42 AM	77250
	BMW-26	09/13/16 12:30 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/19/16 12:58 PM	77266
1609136-01D	BMW-26	09/13/16 12:30 PM	Aqueous	E300	Anion Preparation	09/15/16 11:06 AM	77226
	BMW-26	09/13/16 12:30 PM	Aqueous	E300	Anion Preparation	09/15/16 11:06 AM	77226
	BMW-26	09/13/16 12:30 PM	Aqueous	M4500-H+ B	pH Preparation	09/19/16 08:15 AM	77247
	BMW-26	09/13/16 12:30 PM	Aqueous	M2540C	TDS Preparation	09/19/16 08:46 AM	77252
1609136-02A	BMW-27	09/13/16 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/19/16 08:42 AM	77250
	BMW-27	09/13/16 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/19/16 08:42 AM	77250
	BMW-27	09/13/16 01:30 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	09/19/16 12:58 PM	77266
1609136-02D	BMW-27	09/13/16 01:30 PM	Aqueous	E300	Anion Preparation	09/15/16 11:06 AM	77226
	BMW-27	09/13/16 01:30 PM	Aqueous	E300	Anion Preparation	09/15/16 11:06 AM	77226
	BMW-27	09/13/16 01:30 PM	Aqueous	M4500-H+ B	pH Preparation	09/19/16 08:15 AM	77247
	BMW-27	09/13/16 01:30 PM	Aqueous	M2540C	TDS Preparation	09/19/16 08:46 AM	77252

Lab Order: 1609136
Client: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1609136-01A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	77266	1	09/20/16 03:00 PM	CETAC2_HG_160920 A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77250	1	09/22/16 01:26 PM	ICP-MS4_160922A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77250	1	09/21/16 01:46 PM	ICP-MS4_160921B
1609136-01D	BMW-26	Aqueous	E300	Anions by IC method - Water	77226	10	09/15/16 02:20 PM	IC3_160915A
	BMW-26	Aqueous	E300	Anions by IC method - Water	77226	1	09/15/16 12:28 PM	IC3_160915A
	BMW-26	Aqueous	M4500-H+ B	pH	77247	1	09/19/16 10:04 AM	TITRATOR_160919A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	77252	1	09/20/16 08:41 AM	WC_160919A
1609136-02A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	77266	1	09/20/16 03:02 PM	CETAC2_HG_160920 A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77250	1	09/22/16 01:28 PM	ICP-MS4_160922A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77250	1	09/21/16 01:49 PM	ICP-MS4_160921B
1609136-02D	BMW-27	Aqueous	E300	Anions by IC method - Water	77226	10	09/15/16 02:41 PM	IC3_160915A
	BMW-27	Aqueous	E300	Anions by IC method - Water	77226	1	09/15/16 12:48 PM	IC3_160915A
	BMW-27	Aqueous	M4500-H+ B	pH	77247	1	09/19/16 10:07 AM	TITRATOR_160919A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	77252	1	09/20/16 08:41 AM	WC_160919A

DHL Analytical, Inc.

Date: 21-Oct-16

CLIENT: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)
Project No: 5164-B
Lab Order: 1609136

Client Sample ID: BMW-26
Lab ID: 1609136-01
Collection Date: 09/13/16 12:30 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/20/16 03:00 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/21/16 01:46 PM
Arsenic	0.0170	0.00200	0.00500		mg/L	1	09/21/16 01:46 PM
Barium	0.0425	0.00300	0.0100		mg/L	1	09/21/16 01:46 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/21/16 01:46 PM
Boron	0.457	0.0100	0.0300		mg/L	1	09/22/16 01:26 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	09/21/16 01:46 PM
Calcium	234	0.100	0.300		mg/L	1	09/21/16 01:46 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/21/16 01:46 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	09/21/16 01:46 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	09/21/16 01:46 PM
Lithium	0.0944	0.00500	0.0100		mg/L	1	09/21/16 01:46 PM
Molybdenum	0.00215	0.00200	0.00500	J	mg/L	1	09/21/16 01:46 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/21/16 01:46 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/21/16 01:46 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	97.8	3.00	10.0		mg/L	10	09/15/16 02:20 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/15/16 12:28 PM
Sulfate	671	10.0	30.0		mg/L	10	09/15/16 02:20 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.16	0	0		pH Units@19.5°C	1	09/19/16 10:04 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2120	50.0	50.0		mg/L	1	09/20/16 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: 21-Oct-16

CLIENT: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)
Project No: 5164-B
Lab Order: 1609136

Client Sample ID: BMW-27
Lab ID: 1609136-02
Collection Date: 09/13/16 01:30 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	09/20/16 03:02 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	09/21/16 01:49 PM
Arsenic	0.00536	0.00200	0.00500		mg/L	1	09/21/16 01:49 PM
Barium	0.0434	0.00300	0.0100		mg/L	1	09/21/16 01:49 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	09/21/16 01:49 PM
Boron	0.486	0.0100	0.0300		mg/L	1	09/22/16 01:28 PM
Cadmium	0.000615	0.000300	0.00100	J	mg/L	1	09/21/16 01:49 PM
Calcium	160	0.100	0.300		mg/L	1	09/21/16 01:49 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	09/21/16 01:49 PM
Cobalt	0.150	0.00300	0.00500		mg/L	1	09/21/16 01:49 PM
Lead	0.000432	0.000300	0.00100	J	mg/L	1	09/21/16 01:49 PM
Lithium	0.0541	0.00500	0.0100		mg/L	1	09/21/16 01:49 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	09/21/16 01:49 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	09/21/16 01:49 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	09/21/16 01:49 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	133	3.00	10.0		mg/L	10	09/15/16 02:41 PM
Fluoride	0.668	0.100	0.400		mg/L	1	09/15/16 12:48 PM
Sulfate	1150	10.0	30.0		mg/L	10	09/15/16 02:41 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.49	0	0		pH Units@19.8°C	1	09/19/16 10:07 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2750	50.0	50.0		mg/L	1	09/20/16 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

Work Order: 1609136

Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160920A

The QC data in batch 77266 applies to the following samples: 1609136-01A, 1609136-02A

Sample ID	MB-77266	Batch ID:	77266	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 2:39:45 PM	Prep Date:	9/19/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-77266	Batch ID:	77266	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 2:42:01 PM	Prep Date:	9/19/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00208 0.000200 0.00200 0 104 85 115

Sample ID	LCSD-77266	Batch ID:	77266	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 2:44:17 PM	Prep Date:	9/19/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00201 0.000200 0.00200 0 101 85 115 3.42 15

Sample ID	1609137-01A MS	Batch ID:	77266	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 2:53:21 PM	Prep Date:	9/19/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.000405 0.000200 0.00200 0 20.2 80 120 S

Sample ID	1609137-01A MSD	Batch ID:	77266	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 2:55:36 PM	Prep Date:	9/19/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.000386 0.000200 0.00200 0 19.3 80 120 4.80 15 S

Sample ID	1609150-01A SD	Batch ID:	77266	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 3:28:38 PM	Prep Date:	9/19/2016			
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	1609150-01A PDS	Batch ID:	77266	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 3:30:55 PM	Prep Date:	9/19/2016			
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

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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_160920A

Sample ID	ICV-160920	Batch ID:	R88218	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 2:35:11 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.00391	0.000200	0.00400	0	97.8	90	110			

Sample ID	CCV1-160920	Batch ID:	R88218	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 3:24:03 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	90	110			

Sample ID	CCV2-160920	Batch ID:	R88218	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_160920A	Analysis Date:	9/20/2016 3:40:01 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.00200	0.000200	0.00200	0	100	90	110			

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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160921B

The QC data in batch 77250 applies to the following samples: 1609136-01A, 1609136-02A

Sample ID	MB-77250		Batch ID:	77250		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_160921B		Analysis Date:	9/21/2016 1:22:00 PM		Prep Date:	9/19/2016	
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	LCS-77250	Batch ID:	77250	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCS	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 1:25:00 PM	Prep Date:	9/19/2016				
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	0.199	0.00500	0.200	0	99.4	80	120			
Barium	0.198	0.0100	0.200	0	99.1	80	120			
Beryllium	0.204	0.00100	0.200	0	102	80	120			
Boron	0.193	0.0300	0.200	0	96.4	80	120			
Cadmium	0.200	0.00100	0.200	0	100	80	120			
Calcium	4.92	0.300	5.00	0	98.3	80	120			
Chromium	0.205	0.00500	0.200	0	102	80	120			
Cobalt	0.201	0.00500	0.200	0	100	80	120			
Lead	0.195	0.00100	0.200	0	97.7	80	120			
Lithium	0.198	0.0100	0.200	0	99.0	80	120			
Molybdenum	0.196	0.00500	0.200	0	98.2	80	120			
Selenium	0.199	0.00500	0.200	0	99.3	80	120			
Thallium	0.194	0.00150	0.200	0	97.2	80	120			

Sample ID	LCSD-77250	Batch ID:	77250	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 1:28:00 PM	Prep Date:	9/19/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.203	0.00250	0.200	0	101	80	120	0.425	15	
Arsenic	0.199	0.00500	0.200	0	99.5	80	120	0.167	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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160921B

Sample ID	LCSD-77250	Batch ID:	77250	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 1:28:00 PM	Prep Date:	9/19/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.200	0.0100	0.200	0	99.9	80	120	0.820	15	
Beryllium	0.204	0.00100	0.200	0	102	80	120	0.145	15	
Boron	0.190	0.0300	0.200	0	95.0	80	120	1.48	15	
Cadmium	0.199	0.00100	0.200	0	99.6	80	120	0.551	15	
Calcium	4.88	0.300	5.00	0	97.7	80	120	0.672	15	
Chromium	0.204	0.00500	0.200	0	102	80	120	0.533	15	
Cobalt	0.202	0.00500	0.200	0	101	80	120	0.851	15	
Lead	0.196	0.00100	0.200	0	98.1	80	120	0.374	15	
Lithium	0.198	0.0100	0.200	0	99.0	80	120	0.053	15	
Molybdenum	0.197	0.00500	0.200	0	98.6	80	120	0.406	15	
Selenium	0.198	0.00500	0.200	0	99.2	80	120	0.083	15	
Thallium	0.194	0.00150	0.200	0	97.0	80	120	0.207	15	

Sample ID	1609148-25B PDS			Batch ID:	77250		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_160921B		Analysis Date:	9/21/2016 2:11:00 PM		Prep Date:	9/19/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.208	0.00250	0.200	0	104	80	120			
Arsenic	0.200	0.00500	0.200	0.00278	98.6	80	120			
Barium	0.338	0.0100	0.200	0.148	95.0	80	120			
Beryllium	0.199	0.00100	0.200	0	99.4	80	120			
Boron	0.572	0.0300	0.200	0.361	105	80	120			
Cadmium	0.190	0.00100	0.200	0	95.1	80	120			
Calcium	97.9	0.300	5.00	98.7	-16.6	80	120			S
Chromium	0.205	0.00500	0.200	0	103	80	120			
Cobalt	0.196	0.00500	0.200	0	98.2	80	120			
Lead	0.200	0.00100	0.200	0	99.8	80	120			
Lithium	0.259	0.0100	0.200	0.0733	93.0	80	120			
Molybdenum	0.200	0.00500	0.200	0.0112	94.4	80	120			
Selenium	0.198	0.00500	0.200	0	99.1	80	120			
Thallium	0.198	0.00150	0.200	0	99.1	80	120			

Sample ID	1609148-25B MS			Batch ID:	77250		TestNo:	SW6020A		Units:	mg/L	
SampType:	MS			Run ID:	ICP-MS4_160921B		Analysis Date:	9/21/2016 2:14:00 PM		Prep Date:	9/19/2016	
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	0.202	0.00500	0.200	0.00278	99.7	80	120			
Barium	0.349	0.0100	0.200	0.148	100	80	120			
Beryllium	0.196	0.00100	0.200	0	98.0	80	120			
Boron	0.597	0.0300	0.200	0.361	118	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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160921B

Sample ID: 1609148-25B MS	Batch ID: 77250	TestNo: SW6020A	Units: mg/L							
SampType: MS	Run ID: ICP-MS4_160921B	Analysis Date: 9/21/2016 2:14:00 PM	Prep Date: 9/19/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Cadmium	0.196	0.00100	0.200	0	97.9	80	120			
Calcium	101	0.300	5.00	98.7	52.8	80	120			S
Chromium	0.200	0.00500	0.200	0	100	80	120			
Cobalt	0.195	0.00500	0.200	0	97.5	80	120			
Lead	0.197	0.00100	0.200	0	98.4	80	120			
Lithium	0.271	0.0100	0.200	0.0733	98.9	80	120			
Molybdenum	0.209	0.00500	0.200	0.0112	98.7	80	120			
Selenium	0.198	0.00500	0.200	0	98.9	80	120			
Thallium	0.196	0.00150	0.200	0	97.8	80	120			

Sample ID: 1609148-25B MSD	Batch ID: 77250	TestNo: SW6020A	Units: mg/L							
SampType: MSD	Run ID: ICP-MS4_160921B	Analysis Date: 9/21/2016 2:17:00 PM	Prep Date: 9/19/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.212	0.00250	0.200	0	106	80	120	3.52	15	
Arsenic	0.207	0.00500	0.200	0.00278	102	80	120	2.48	15	
Barium	0.359	0.0100	0.200	0.148	105	80	120	2.90	15	
Beryllium	0.204	0.00100	0.200	0	102	80	120	4.05	15	
Boron	0.606	0.0300	0.200	0.361	122	80	120	1.37	15	S
Cadmium	0.202	0.00100	0.200	0	101	80	120	3.14	15	
Calcium	103	0.300	5.00	98.7	82.9	80	120	1.47	15	
Chromium	0.205	0.00500	0.200	0	102	80	120	2.26	15	
Cobalt	0.199	0.00500	0.200	0	99.6	80	120	2.17	15	
Lead	0.204	0.00100	0.200	0	102	80	120	3.36	15	
Lithium	0.273	0.0100	0.200	0.0733	99.9	80	120	0.792	15	
Molybdenum	0.216	0.00500	0.200	0.0112	102	80	120	3.52	15	
Selenium	0.202	0.00500	0.200	0	101	80	120	2.14	15	
Thallium	0.202	0.00150	0.200	0	101	80	120	3.26	15	

Sample ID	1609148-25B SD	Batch ID:	77250	TestNo:	SW6020A	Units:	mg/L				
SampType:	SD	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 2:56:00 PM	Prep Date:	9/19/2016				
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	0.00278				0	10	
Barium	0.151	0.0500	0	0.148				1.82	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Boron	0.525	0.150	0	0.361				36.9	10	R
Cadmium	<0.00150	0.00500	0	0				0	10	
Calcium	99.7	1.50	0	98.7				0.996	10	
Chromium	<0.0100	0.0250	0	0				0	10	

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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160921B

Sample ID	1609148-25B SD	Batch ID:	77250	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 2:56:00 PM	Prep Date:	9/19/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	0.0799	0.0500	0	0.0733				8.52	10	
Molybdenum	0.0122	0.0250	0	0.0112				8.27	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160921B

Sample ID	ICV-160921	Batch ID:	R88235	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 1:03:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.105	0.00250	0.100	0	105	90	110			
Arsenic	0.0993	0.00500	0.100	0	99.3	90	110			
Barium	0.101	0.0100	0.100	0	101	90	110			
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Boron	0.101	0.0300	0.100	0	101	90	110			
Cadmium	0.0997	0.00100	0.100	0	99.7	90	110			
Calcium	2.47	0.300	2.50	0	98.9	90	110			
Chromium	0.106	0.00500	0.100	0	106	90	110			
Cobalt	0.102	0.00500	0.100	0	102	90	110			
Lead	0.0985	0.00100	0.100	0	98.5	90	110			
Lithium	0.0966	0.0100	0.100	0	96.6	90	110			
Molybdenum	0.0967	0.00500	0.100	0	96.7	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.0956	0.00150	0.100	0	95.6	90	110			

Sample ID	LCVL-160921	Batch ID:	R88235	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 1:18:00 PM	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	0.00518	0.00500	0.00500	0	104	70	130			
Barium	0.00517	0.0100	0.00500	0	103	70	130			
Beryllium	0.000966	0.00100	0.00100	0	96.6	70	130			
Boron	0.0245	0.0300	0.0200	0	122	70	130			
Cadmium	0.000994	0.00100	0.00100	0	99.4	70	130			
Calcium	0.0993	0.300	0.100	0	99.3	70	130			
Chromium	0.00533	0.00500	0.00500	0	107	70	130			
Cobalt	0.00525	0.00500	0.00500	0	105	70	130			
Lead	0.00101	0.00100	0.00100	0	101	70	130			
Lithium	0.0104	0.0100	0.0100	0	104	70	130			
Molybdenum	0.00495	0.00500	0.00500	0	99.1	70	130			
Selenium	0.00520	0.00500	0.00500	0	104	70	130			
Thallium	0.000979	0.00150	0.00100	0	97.9	70	130			

Sample ID	LCVL1-160921	Batch ID:	R88235	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 4:48:00 PM	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	0.00506	0.00500	0.00500	0	101	70	130			
Barium	0.00525	0.0100	0.00500	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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160921B

Sample ID	LCVL1-160921	Batch ID:	R88235	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 4:48:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00101	0.00100	0.00100	0	101	70	130			
Boron	0.0248	0.0300	0.0200	0	124	70	130			
Cadmium	0.00105	0.00100	0.00100	0	105	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Chromium	0.00522	0.00500	0.00500	0	104	70	130			
Cobalt	0.00513	0.00500	0.00500	0	103	70	130			
Lead	0.000939	0.00100	0.00100	0	93.9	70	130			
Lithium	0.0104	0.0100	0.0100	0	104	70	130			
Molybdenum	0.00487	0.00500	0.00500	0	97.4	70	130			
Selenium	0.00540	0.00500	0.00500	0	108	70	130			
Thallium	0.000966	0.00150	0.00100	0	96.6	70	130			

Sample ID	CCV1-160921	Batch ID:	R88235	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_160921B	Analysis Date:	9/21/2016 3:16:00 PM	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	0.203	0.00500	0.200	0	101	90	110			
Barium	0.205	0.0100	0.200	0	103	90	110			
Beryllium	0.205	0.00100	0.200	0	103	90	110			
Boron	0.213	0.0300	0.200	0	107	90	110			
Cadmium	0.201	0.00100	0.200	0	101	90	110			
Calcium	5.01	0.300	5.00	0	100	90	110			
Chromium	0.209	0.00500	0.200	0	104	90	110			
Cobalt	0.206	0.00500	0.200	0	103	90	110			
Lead	0.201	0.00100	0.200	0	100	90	110			
Lithium	0.207	0.0100	0.200	0	104	90	110			
Molybdenum	0.199	0.00500	0.200	0	99.7	90	110			
Selenium	0.205	0.00500	0.200	0	102	90	110			
Thallium	0.199	0.00150	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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_160922A

Sample ID	ICV-160922	Batch ID:	R88233	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_160922A	Analysis Date:	9/22/2016 1:04:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0941	0.0300	0.100	0	94.1	90	110			

Sample ID	LCVL-160922	Batch ID:	R88233	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_160922A	Analysis Date:	9/22/2016 1:10:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0236	0.0300	0.0200	0	118	70	130			

Sample ID	CCV1-160922	Batch ID:	R88233	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_160922A	Analysis Date:	9/22/2016 1:31:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.215	0.0300	0.200	0	108	90	110			

Sample ID	LCVL1-160922	Batch ID:	R88233	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_160922A	Analysis Date:	9/22/2016 1:50:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0210	0.0300	0.0200	0	105	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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_160915A

The QC data in batch 77226 applies to the following samples: 1609136-01D, 1609136-02D

Sample ID	MB-77226	Batch ID:	77226	TestNo:	E300	Units:	mg/L				
SampType:	MBLK	Run ID:	IC3_160915A	Analysis Date:	9/15/2016 10:35:02 AM	Prep Date:	9/15/2016				
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	LCS-77226	Batch ID:	77226	TestNo:	E300	Units:	mg/L				
SampType:	LCS	Run ID:	IC3_160915A	Analysis Date:	9/15/2016 10:55:41 AM	Prep Date:	9/15/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.59	1.00	10.00	0	95.9	90	110				
Fluoride	4.19	0.400	4.000	0	105	90	110				
Sulfate	29.8	3.00	30.00	0	99.3	90	110				

Sample ID	LCSD-77226	Batch ID:	77226	TestNo:	E300	Units:	mg/L				
SampType:	LCSD	Run ID:	IC3_160915A	Analysis Date:	9/15/2016 11:16:20 AM	Prep Date:	9/15/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	11.1	1.00	10.00	0	111	90	110	14.7	20	S
Fluoride	4.09	0.400	4.000	0	102	90	110	2.34	20	
Sulfate	29.7	3.00	30.00	0	99.1	90	110	0.158	20	

Sample ID	1609141-01CMS	Batch ID:	77226	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC3_160915A	Analysis Date:	9/15/2016 1:36:09 PM	Prep Date:	9/15/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	248	10.0	200.0	48.73	99.6	90	110			
Fluoride	195	4.00	200.0	0	97.5	90	110			
Sulfate	226	30.0	200.0	31.51	97.1	90	110			

Sample ID	1609141-01CMSD	Batch ID:	77226	TestNo:	E300	Units:	mg/L				
SampType:	MSD	Run ID:	IC3_160915A	Analysis Date:	9/15/2016 1:59:43 PM	Prep Date:	9/15/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	248	10.0	200.0	48.73	99.5	90	110	0.052	20
Fluoride	196	4.00	200.0	0	98.1	90	110	0.593	20
Sulfate	228	30.0	200.0	31.51	98.2	90	110	0.983	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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_160915A

Sample ID	ICV-160915	Batch ID:	R88157	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC3_160915A	Analysis Date:	9/15/2016 9:49:31 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.6	1.00	25.00	0	98.4	90	110			
Fluoride	9.91	0.400	10.00	0	99.1	90	110			
Sulfate	74.1	3.00	75.00	0	98.8	90	110			

Sample ID	CCV1-160915	Batch ID:	R88157	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC3_160915A	Analysis Date:	9/15/2016 3:44:33 PM	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	4.03	0.400	4.000	0	101	90	110			
Sulfate	29.9	3.00	30.00	0	99.5	90	110			

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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160919A

The QC data in batch 77247 applies to the following samples: 1609136-01D, 1609136-02D

Sample ID	1609136-01D-DUP	Batch ID:	77247	TestNo:	M4500-H+ B	Units:	pH Units@19.7°C
SampType:	DUP	Run ID:	TITRATOR_160919A	Analysis Date:	9/19/2016 10:05:00 AM	Prep Date:	9/19/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		7.19	0	0	7.160		0.418 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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_160919A

Sample ID	ICV-160919	Batch ID:	R88188	TestNo:	M4500-H+ B	Units:	pH Units@21.9°C				
SampType:	ICV	Run ID:	TITRATOR_160919A	Analysis Date:	9/19/2016 9:10:00 AM	Prep Date:	9/19/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH		10.0	0	10.00	0	100	99	101			

Sample ID	CCV1-160919	Batch ID:	R88188	TestNo:	M4500-H+ B	Units:	pH Units@21.5°C			
SampType:	CCV	Run ID:	TITRATOR_160919A	Analysis Date:	9/19/2016 10:13:00 AM	Prep Date:	9/19/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.06	0	7.000	0	101	97.1	102.9			

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: 1609136
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: WC_160919A

The QC data in batch 77252 applies to the following samples: 1609136-01D, 1609136-02D

Sample ID	MB-77252	Batch ID:	77252	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_160919A	Analysis Date:	9/20/2016 8:41:00 AM	Prep Date:	9/19/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-77252	Batch ID:	77252	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_160919A	Analysis Date:	9/20/2016 8:41:00 AM	Prep Date:	9/19/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 739 10.0 745.6 0 99.1 90 113

Sample ID	1609137-01B-DUP	Batch ID:	77252	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_160919A	Analysis Date:	9/20/2016 8:41:00 AM	Prep Date:	9/19/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 5060 50.0 0 4905 3.01 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: 20160901

This report contains the analytical results for the 2 sample(s) received under chain of custody by ESC Lab Sciences on 9/19/2016 3:40:01 PM. These samples are associated with your 1609136 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 LCS and MS/D were not spiked for the Radium-228 analysis batch R3860 containing samples 20160901-01 and -02. Barium for the batch was discarded before recovery so all samples were set to be re-prepped. Samples 20160901-01 and -02 were consumed during the first analysis therefore no sample remained to re-prep.

Average Barium recovery for the last three months for Ra-228 waters prepped under normal conditions is approximately 108%, with no recovery lower than 84.2%.

Conservatively, the Barium recovery for 20160901-01 and -02 has been set to 75.0%. Even with this conservative high bias, sample results were still 5X lower than the reporting limit.

The results of samples in the batch with sufficient volume to be re-prepped were confirmed with the initial run using 75.0% Barium yield.



Client : DHL Analytical, Inc.
Client Project : 1609136
Lab Number : 20160901
Date Reported : 10/21/16
Date Received : 09/19/16
Page Number : 2 of 2

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
Lab ID : 20160901-01							
Client ID : BMW-26							
Date Sampled : 9/13/2016 12:30:00 PM							
Matrix : NPW							

Radiochemical Analyses

Combined Radium		1.06 +/- 0.731	1.16	pCi/l			
Radium-226	SM 7500 Ra B M*	0.154 +/- 0.113	0.137	pCi/l	09/28/16	10/02/16	AK
Radium-228	EPA 904*/9320*	0.908 +/- 0.618	1.02	pCi/l	09/22/16	09/26/16	JR

Lab ID : 20160901-02
Client ID : BMW-27
Date Sampled : 9/13/2016 1:30:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.981 +/- 0.821	1.29	pCi/l			
Radium-226	SM 7500 Ra B M*	0.308 +/- 0.150	0.151	pCi/l	09/28/16	10/02/16	AK
Radium-228	EPA 904*/9320*	0.673 +/- 0.671	1.14	pCi/l	09/22/16	09/26/16	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	0.004	93.0			NC	0.365	119.0			R1138
Radium-228	-0.242	-1.9			NC	0.069	-7.2	-9.8		R3860

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: 1609136

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

Acct #: DHLRRTX

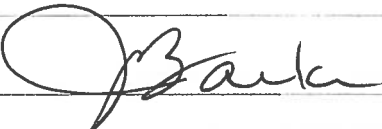
15-Sep-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests				
					E904.0	SM7500Ra-B M			
BMW-26	Aqueous	-01B	09/13/16 12:30 PM	500HDPEHNO3	1				
BMW-26	Aqueous	-01C	09/13/16 12:30 PM	500HDPEHNO3		1			
BMW-27	Aqueous	-02B	09/13/16 01:30 PM	500HDPEHNO3	1				
BMW-27	Aqueous	-02C	09/13/16 01:30 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

20160901
L860955

Relinquished by: 	Date/Time: 9/15/16 1730	Received by: 	Date/Time: 9/15/16 1730
Relinquished by:		Received by:	9/19/16 1540

SAMPLE LOGIN

Date Received: 9/19/2016 3:40:01

Lab Number: 20160901

Due: 10/17/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20160901-01 B	BMW-26	NPW	09/13/16	Plastic	500 ml	HNO ₃ , pH < 2	☐	Yes	Yes
20160901-01 A	BMW-26	NPW	09/13/16	Plastic	500 ml	HNO ₃ , pH < 2	☐	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20160901-02 B	BMW-27	NPW	09/13/16	Plastic	500 ml	HNO ₃ , pH < 2	☐	Yes	Yes
20160901-02 A	BMW-27	NPW	09/13/16	Plastic	500 ml	HNO ₃ , pH < 2	☐	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						

CONTAINER INSPECTION

Coolers

BOX

Custody Seals Broken

Q

Temperature:

Ambo

Ice

Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken

Q

Chain of Custody Record

☒

Labels in Tact

☒

Radiation Survey Complete

N/A

Anomalies

Inspected By:

Amber Taylor

DATE

9/19/16

QA or Designee Review:

Raymond Thomas

DATE

09/19/16

Sample Custodian Review:

James Hand

DATE

9/19/16

Project Notes:



November 18, 2016

Will Vienne
Pastor, Behling & Wheeler
2201 Double Creek Dr #4004
Round Rock, Texas 78664
TEL: (512) 671-3434
FAX (512) 671-3446
RE: MLSES A1 Area Landfill

Order No.: 1610230

Dear Will Vienne:

DHL Analytical, Inc. received 7 sample(s) on 10/27/2016 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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Subcontract Report 1610230	48

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: 10-26-16 PAGE 1 OF 1
PO #: 5164-B DHL WORK ORDER #: 1610230
PROJECT LOCATION OR NAME: MLSES - A1 AREA LANDFILL
CLIENT PROJECT #: 5164-B COLLECTOR: J. BRAYTON

[illegible]

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
<i>[Signature]</i>	10-26-16 1730	Fedex
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
Fedex	10-27-16 9:25	G. Horan
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

TURN AROUND TIME
 RUSH ☐ CALL FIRST
 1 DAY ☐ CALL FIRST
 2 DAY ☐
 NORMAL ☒
 OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.6 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@pbwio.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:G66A (512) 671-3434
JOHN BRAYTON
2201 DOUBLE CREEK DR
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 26OCT16
ACTWGT: 61.70 LB
CAD: 006994167/SSFE1722
DIMS: 23x13x14 IN

BILL THIRD PARTY

TO DHL

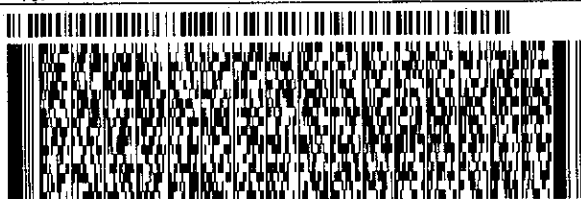
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222

REF:

DEPT:



FedEx
Express



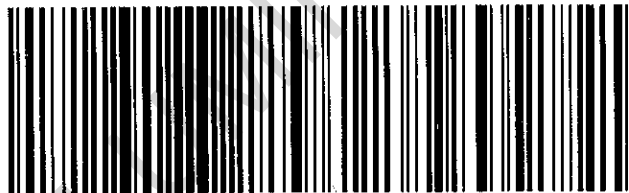
J182016101201W

TRK# 7844 6998 1611
0201

THU - 27 OCT 10:30A
PRIORITY OVERNIGHT

A8 BSMA

78664
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 10/27/2016

Work Order Number 1610230

Received by JT

Checklist completed by: DBaula 10/27/2016

Signature

Date

Reviewed by M 10/27/2016

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 ☐ 1.6 °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? NA Checked by on

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: MLSES A1 Area Landfill
Lab Order: 1610230

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 10/27/16. A total of 7 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 11/4/16 the matrix spike and matrix spike duplicate recoveries were above control limits for a total of three analytes. In addition, the matrix spike and matrix spike duplicate had the RPD above control limits for Antimony and Boron. 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 11/8/16 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.

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Lab Order: 1610230**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1610230-01	BMW-24		10/25/16 02:20 PM	10/27/2016
1610230-02	BMW-23		10/25/16 03:10 PM	10/27/2016
1610230-03	BMW-22		10/25/16 04:05 PM	10/27/2016
1610230-04	BMW-20		10/26/16 08:15 AM	10/27/2016
1610230-05	BMW-21		10/26/16 09:10 AM	10/27/2016
1610230-06	BMW-11AR		10/26/16 10:15 AM	10/27/2016
1610230-07	BMW-19		10/26/16 11:20 AM	10/27/2016

Lab Order: 1610230
Client: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1610230-01A	BMW-24	10/25/16 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-24	10/25/16 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-24	10/25/16 02:20 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/01/16 11:40 AM	77749
1610230-01D	BMW-24	10/25/16 02:20 PM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-24	10/25/16 02:20 PM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-24	10/25/16 02:20 PM	Aqueous	M4500-H+ B	pH Preparation	10/27/16 10:27 AM	77694
	BMW-24	10/25/16 02:20 PM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739
1610230-02A	BMW-23	10/25/16 03:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-23	10/25/16 03:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-23	10/25/16 03:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/01/16 11:40 AM	77749
1610230-02D	BMW-23	10/25/16 03:10 PM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-23	10/25/16 03:10 PM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-23	10/25/16 03:10 PM	Aqueous	M4500-H+ B	pH Preparation	10/27/16 10:27 AM	77694
	BMW-23	10/25/16 03:10 PM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739
1610230-03A	BMW-22	10/25/16 04:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-22	10/25/16 04:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-22	10/25/16 04:05 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/01/16 11:40 AM	77749
1610230-03D	BMW-22	10/25/16 04:05 PM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-22	10/25/16 04:05 PM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-22	10/25/16 04:05 PM	Aqueous	M4500-H+ B	pH Preparation	10/27/16 10:27 AM	77694
	BMW-22	10/25/16 04:05 PM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739
1610230-04A	BMW-20	10/26/16 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-20	10/26/16 08:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-20	10/26/16 08:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/01/16 11:40 AM	77749
1610230-04D	BMW-20	10/26/16 08:15 AM	Aqueous	E300	Anion Preparation	11/10/16 08:40 AM	77847
	BMW-20	10/26/16 08:15 AM	Aqueous	E300	Anion Preparation	11/10/16 08:40 AM	77847
	BMW-20	10/26/16 08:15 AM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-20	10/26/16 08:15 AM	Aqueous	M4500-H+ B	pH Preparation	10/27/16 10:27 AM	77694

Lab Order: 1610230
Client: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1610230-04D	BMW-20	10/26/16 08:15 AM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739
1610230-05A	BMW-21	10/26/16 09:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-21	10/26/16 09:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-21	10/26/16 09:10 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/02/16 10:55 AM	77769
1610230-05D	BMW-21	10/26/16 09:10 AM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-21	10/26/16 09:10 AM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-21	10/26/16 09:10 AM	Aqueous	M4500-H+ B	pH Preparation	10/27/16 10:27 AM	77694
	BMW-21	10/26/16 09:10 AM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739
1610230-06A	BMW-11AR	10/26/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-11AR	10/26/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-11AR	10/26/16 10:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/02/16 10:55 AM	77769
1610230-06D	BMW-11AR	10/26/16 10:15 AM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-11AR	10/26/16 10:15 AM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-11AR	10/26/16 10:15 AM	Aqueous	M4500-H+ B	pH Preparation	10/27/16 10:27 AM	77694
	BMW-11AR	10/26/16 10:15 AM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739
1610230-07A	BMW-19	10/26/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-19	10/26/16 11:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/03/16 08:39 AM	77776
	BMW-19	10/26/16 11:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/02/16 10:55 AM	77769
1610230-07D	BMW-19	10/26/16 11:20 AM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-19	10/26/16 11:20 AM	Aqueous	E300	Anion Preparation	10/31/16 08:51 AM	77728
	BMW-19	10/26/16 11:20 AM	Aqueous	M4500-H+ B	pH Preparation	10/27/16 10:27 AM	77694
	BMW-19	10/26/16 11:20 AM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739

Lab Order: 1610230
Client: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1610230-01A	BMW-24	Aqueous	SW7470A	Mercury Total: Aqueous	77749	1	11/02/16 10:31 AM	CETAC2_HG_161102A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	1	11/04/16 11:52 AM	ICP-MS4_161104A
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	5	11/04/16 02:08 PM	ICP-MS4_161104B
1610230-01D	BMW-24	Aqueous	E300	Anions by IC method - Water	77728	1	10/31/16 10:18 AM	IC2_161031A
	BMW-24	Aqueous	E300	Anions by IC method - Water	77728	100	10/31/16 01:05 PM	IC2_161031A
	BMW-24	Aqueous	M4500-H+ B	pH	77694	1	10/27/16 10:56 AM	TITRATOR_161027A
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A
1610230-02A	BMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	77749	1	11/02/16 10:33 AM	CETAC2_HG_161102A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	10	11/04/16 11:54 AM	ICP-MS4_161104A
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	1	11/04/16 03:01 PM	ICP-MS4_161104B
1610230-02D	BMW-23	Aqueous	E300	Anions by IC method - Water	77728	100	10/31/16 01:19 PM	IC2_161031A
	BMW-23	Aqueous	E300	Anions by IC method - Water	77728	1	10/31/16 10:33 AM	IC2_161031A
	BMW-23	Aqueous	M4500-H+ B	pH	77694	1	10/27/16 10:59 AM	TITRATOR_161027A
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A
1610230-03A	BMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	77749	1	11/02/16 10:40 AM	CETAC2_HG_161102A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	10	11/04/16 11:56 AM	ICP-MS4_161104A
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	1	11/04/16 03:03 PM	ICP-MS4_161104B
1610230-03D	BMW-22	Aqueous	E300	Anions by IC method - Water	77728	1	10/31/16 10:47 AM	IC2_161031A
	BMW-22	Aqueous	E300	Anions by IC method - Water	77728	100	10/31/16 01:34 PM	IC2_161031A
	BMW-22	Aqueous	M4500-H+ B	pH	77694	1	10/27/16 11:01 AM	TITRATOR_161027A
	BMW-22	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A
1610230-04A	BMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	77749	1	11/02/16 10:42 AM	CETAC2_HG_161102A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	1	11/04/16 11:58 AM	ICP-MS4_161104A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	5	11/04/16 02:10 PM	ICP-MS4_161104B
1610230-04D	BMW-20	Aqueous	E300	Anions by IC method - Water	77847	1	11/10/16 10:06 AM	IC2_161110A
	BMW-20	Aqueous	E300	Anions by IC method - Water	77847	10	11/10/16 10:21 AM	IC2_161110A

Lab Order: 1610230
Client: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1610230-04D	BMW-20	Aqueous	E300	Anions by IC method - Water	77728	1	10/31/16 11:02 AM	IC2_161031A
	BMW-20	Aqueous	M4500-H+ B	pH	77694	1	10/27/16 11:03 AM	TITRATOR_161027A
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A
1610230-05A	BMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	77769	1	11/03/16 12:41 PM	CETAC2_HG_161103A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	10	11/04/16 12:00 PM	ICP-MS4_161104A
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	1	11/04/16 03:05 PM	ICP-MS4_161104B
1610230-05D	BMW-21	Aqueous	E300	Anions by IC method - Water	77728	1	10/31/16 11:16 AM	IC2_161031A
	BMW-21	Aqueous	E300	Anions by IC method - Water	77728	100	10/31/16 01:49 PM	IC2_161031A
	BMW-21	Aqueous	M4500-H+ B	pH	77694	1	10/27/16 11:06 AM	TITRATOR_161027A
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A
1610230-06A	BMW-11AR	Aqueous	SW7470A	Mercury Total: Aqueous	77769	1	11/03/16 12:18 PM	CETAC2_HG_161103A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	1	11/04/16 12:02 PM	ICP-MS4_161104A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	5	11/04/16 02:12 PM	ICP-MS4_161104B
1610230-06D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	77728	1	10/31/16 11:31 AM	IC2_161031A
	BMW-11AR	Aqueous	E300	Anions by IC method - Water	77728	10	10/31/16 02:03 PM	IC2_161031A
	BMW-11AR	Aqueous	M4500-H+ B	pH	77694	1	10/27/16 11:07 AM	TITRATOR_161027A
	BMW-11AR	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A
1610230-07A	BMW-19	Aqueous	SW7470A	Mercury Total: Aqueous	77769	1	11/03/16 12:44 PM	CETAC2_HG_161103A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	1	11/04/16 12:04 PM	ICP-MS4_161104A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77776	5	11/04/16 03:57 PM	ICP-MS4_161104B
1610230-07D	BMW-19	Aqueous	E300	Anions by IC method - Water	77728	1	10/31/16 11:46 AM	IC2_161031A
	BMW-19	Aqueous	E300	Anions by IC method - Water	77728	100	10/31/16 02:23 PM	IC2_161031A
	BMW-19	Aqueous	M4500-H+ B	pH	77694	1	10/27/16 11:09 AM	TITRATOR_161027A
	BMW-19	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A

DHL Analytical, Inc.

Date: 18-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610230

Client Sample ID: BMW-24
Lab ID: 1610230-01
Collection Date: 10/25/16 02:20 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/02/16 10:31 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/04/16 11:52 AM
Arsenic	0.00364	0.00200	0.00500	J	mg/L	1	11/04/16 11:52 AM
Barium	1.88	0.00300	0.0100		mg/L	1	11/04/16 11:52 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 11:52 AM
Boron	0.225	0.0100	0.0300		mg/L	1	11/04/16 11:52 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 11:52 AM
Calcium	59.2	0.500	1.50		mg/L	5	11/04/16 02:08 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 11:52 AM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/04/16 11:52 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 11:52 AM
Lithium	0.00767	0.00500	0.0100	J	mg/L	1	11/04/16 11:52 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 11:52 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 11:52 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/04/16 11:52 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	518	30.0	100		mg/L	100	10/31/16 01:05 PM
Fluoride	0.305	0.100	0.400	J	mg/L	1	10/31/16 10:18 AM
Sulfate	34.2	1.00	3.00		mg/L	1	10/31/16 10:18 AM
PH		M4500-H+ B		Analyst: BJT			
pH	6.45	0	0		pH Units@18.8°C	1	10/27/16 10:56 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1490	50.0	50.0		mg/L	1	11/01/16 08:43 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: 18-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610230

Client Sample ID: BMW-23
Lab ID: 1610230-02
Collection Date: 10/25/16 03:10 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/02/16 10:33 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/04/16 03:01 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:01 PM
Barium	0.0437	0.00300	0.0100		mg/L	1	11/04/16 03:01 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:01 PM
Boron	1.22	0.100	0.300		mg/L	10	11/04/16 11:54 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:01 PM
Calcium	86.8	1.00	3.00		mg/L	10	11/04/16 11:54 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:01 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/04/16 03:01 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:01 PM
Lithium	0.0856	0.00500	0.0100		mg/L	1	11/04/16 03:01 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:01 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:01 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/04/16 03:01 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	219	30.0	100		mg/L	100	10/31/16 01:19 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/31/16 10:33 AM
Sulfate	467	100	300		mg/L	100	10/31/16 01:19 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.68	0	0		pH Units@19.3°C	1	10/27/16 10:59 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1700	50.0	50.0		mg/L	1	11/01/16 08:43 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: 18-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610230

Client Sample ID: BMW-22
Lab ID: 1610230-03
Collection Date: 10/25/16 04:05 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/02/16 10:40 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/04/16 03:03 PM
Arsenic	0.00216	0.00200	0.00500	J	mg/L	1	11/04/16 03:03 PM
Barium	0.0645	0.00300	0.0100		mg/L	1	11/04/16 03:03 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:03 PM
Boron	3.38	0.100	0.300		mg/L	10	11/04/16 11:56 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:03 PM
Calcium	183	1.00	3.00		mg/L	10	11/04/16 11:56 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:03 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/04/16 03:03 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:03 PM
Lithium	0.0753	0.00500	0.0100		mg/L	1	11/04/16 03:03 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:03 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:03 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/04/16 03:03 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	241	30.0	100		mg/L	100	10/31/16 01:34 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/31/16 10:47 AM
Sulfate	803	100	300		mg/L	100	10/31/16 01:34 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.75	0	0		pH Units@19.3°C	1	10/27/16 11:01 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2600	50.0	50.0		mg/L	1	11/01/16 08:43 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: 18-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610230

Client Sample ID: BMW-20
Lab ID: 1610230-04
Collection Date: 10/26/16 08:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/02/16 10:42 AM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/04/16 11:58 AM
Arsenic	0.00444	0.00200	0.00500	J	mg/L	1	11/04/16 11:58 AM
Barium	0.0421	0.00300	0.0100		mg/L	1	11/04/16 11:58 AM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 11:58 AM
Boron	0.113	0.0100	0.0300		mg/L	1	11/04/16 11:58 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 11:58 AM
Calcium	93.5	0.500	1.50		mg/L	5	11/04/16 02:10 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 11:58 AM
Cobalt	0.0786	0.00300	0.00500		mg/L	1	11/04/16 11:58 AM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 11:58 AM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	11/04/16 11:58 AM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 11:58 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 11:58 AM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/04/16 11:58 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	48.2	0.300	1.00		mg/L	1	11/10/16 10:06 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/10/16 10:06 AM
Sulfate	801	10.0	30.0		mg/L	10	11/10/16 10:21 AM
PH		M4500-H+ B		Analyst: BJT			
pH	5.69	0	0		pH Units@18.6°C	1	10/27/16 11:03 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1610	50.0	50.0		mg/L	1	11/01/16 08:43 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: 18-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610230

Client Sample ID: BMW-21
Lab ID: 1610230-05
Collection Date: 10/26/16 09:10 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/03/16 12:41 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/04/16 03:05 PM
Arsenic	0.00370	0.00200	0.00500	J	mg/L	1	11/04/16 03:05 PM
Barium	0.0443	0.00300	0.0100		mg/L	1	11/04/16 03:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:05 PM
Boron	1.14	0.100	0.300		mg/L	10	11/04/16 12:00 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:05 PM
Calcium	145	1.00	3.00		mg/L	10	11/04/16 12:00 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:05 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/04/16 03:05 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 03:05 PM
Lithium	0.0611	0.00500	0.0100		mg/L	1	11/04/16 03:05 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:05 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 03:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/04/16 03:05 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	399	30.0	100		mg/L	100	10/31/16 01:49 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/31/16 11:16 AM
Sulfate	434	100	300		mg/L	100	10/31/16 01:49 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.16	0	0		pH Units@18.6°C	1	10/27/16 11:06 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2170	50.0	50.0		mg/L	1	11/01/16 08:43 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: 18-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610230

Client Sample ID: BMW-11AR
Lab ID: 1610230-06
Collection Date: 10/26/16 10:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/03/16 12:18 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/04/16 12:02 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 12:02 PM
Barium	0.0429	0.00300	0.0100		mg/L	1	11/04/16 12:02 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 12:02 PM
Boron	0.316	0.0100	0.0300		mg/L	1	11/04/16 12:02 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 12:02 PM
Calcium	99.7	0.500	1.50		mg/L	5	11/04/16 02:12 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 12:02 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/04/16 12:02 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 12:02 PM
Lithium	0.0508	0.00500	0.0100		mg/L	1	11/04/16 12:02 PM
Molybdenum	0.00363	0.00200	0.00500	J	mg/L	1	11/04/16 12:02 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 12:02 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/04/16 12:02 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	15.8	0.300	1.00		mg/L	1	10/31/16 11:31 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/31/16 11:31 AM
Sulfate	495	10.0	30.0		mg/L	10	10/31/16 02:03 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.98	0	0		pH Units@18.5°C	1	10/27/16 11:07 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1590	50.0	50.0		mg/L	1	11/01/16 08:43 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: 18-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610230

Client Sample ID: BMW-19
Lab ID: 1610230-07
Collection Date: 10/26/16 11:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/03/16 12:44 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/04/16 12:04 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 12:04 PM
Barium	0.0144	0.00300	0.0100		mg/L	1	11/04/16 12:04 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 12:04 PM
Boron	0.417	0.0100	0.0300		mg/L	1	11/04/16 12:04 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 12:04 PM
Calcium	443	0.500	1.50		mg/L	5	11/04/16 03:57 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 12:04 PM
Cobalt	0.0104	0.00300	0.00500		mg/L	1	11/04/16 12:04 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/04/16 12:04 PM
Lithium	0.0495	0.00500	0.0100		mg/L	1	11/04/16 12:04 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 12:04 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/04/16 12:04 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/04/16 12:04 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	8.26	0.300	1.00		mg/L	1	10/31/16 11:46 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	10/31/16 11:46 AM
Sulfate	2210	100	300		mg/L	100	10/31/16 02:23 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.81	0	0		pH Units@18.8°C	1	10/27/16 11:09 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	4410	50.0	50.0		mg/L	1	11/01/16 08:43 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: 1610230

Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161102A

The QC data in batch 77749 applies to the following samples: 1610230-01A, 1610230-02A, 1610230-03A, 1610230-04A

Sample ID	MB-77749	Batch ID:	77749	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 9:57:24 AM	Prep Date:	11/1/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-77749	Batch ID:	77749	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 9:59:40 AM	Prep Date:	11/1/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00220 0.000200 0.00200 0 110 85 115

Sample ID	LCSD-77749	Batch ID:	77749	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 10:01:56 AM	Prep Date:	11/1/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00218 0.000200 0.00200 0 109 85 115 0.913 15

Sample ID	1610202-14C SD	Batch ID:	77749	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 10:06:29 AM	Prep Date:	11/1/2016			
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	1610202-14C PDS	Batch ID:	77749	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 10:08:44 AM	Prep Date:	11/1/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00251 0.000200 0.00250 0 100 85 115

Sample ID	1610202-14C MS	Batch ID:	77749	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 10:11:00 AM	Prep Date:	11/1/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00221 0.000200 0.00200 0 110 80 120

Sample ID	1610202-14C MSD	Batch ID:	77749	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 10:13:16 AM	Prep Date:	11/1/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00218 0.000200 0.00200 0 109 80 120 1.37 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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161102A

Sample ID	ICV-161102	Batch ID:	R88813	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 9:52:50 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.00410	0.000200	0.00400	0	103	90	110			

Sample ID	CCV1-161102	Batch ID:	R88813	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 10:35:57 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	90	110			

Sample ID	CCV2-161102	Batch ID:	R88813	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_161102A	Analysis Date:	11/2/2016 11:03:16 AM	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			

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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161103A

The QC data in batch 77769 applies to the following samples: 1610230-05A, 1610230-06A, 1610230-07A

Sample ID	MB-77769	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L				
SampType:	MBLK	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:11:16 PM	Prep Date:	11/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-77769	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCS	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:13:32 PM	Prep Date:	11/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00208 0.000200 0.00200 0 104 85 115

Sample ID	LCSD-77769	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCSD	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:15:48 PM	Prep Date:	11/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00209 0.000200 0.00200 0 104 85 115 0.480 15

Sample ID	1610230-06A SD	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L				
SampType:	SD	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:20:21 PM	Prep Date:	11/2/2016				
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	1610230-06A PDS	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L				
SampType:	PDS	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:22:36 PM	Prep Date:	11/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00241 0.000200 0.00250 0 96.4 85 115

Sample ID	1610230-06A MS	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L				
SampType:	MS	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:24:51 PM	Prep Date:	11/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00210 0.000200 0.00200 0 105 80 120

Sample ID	1610230-06A MSD	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L				
SampType:	MSD	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:27:07 PM	Prep Date:	11/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00211 0.000200 0.00200 0 106 80 120 0.475 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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161103A

Sample ID	ICV-161103	Batch ID:	R88836	TestNo:	SW7470A	Units:	mg/L			
SampType:	ICV	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:06:42 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00383	0.000200	0.00400	0	95.8	90	110			

Sample ID	CCV1-161103	Batch ID:	R88836	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:59:56 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	90	110			

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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104A

The QC data in batch 77776 applies to the following samples: 1610230-01A, 1610230-02A, 1610230-03A, 1610230-04A, 1610230-05A, 1610230-06A, 1610230-07A

Sample ID	MB-77776		Batch ID:	77776		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_161104A		Analysis Date:	11/4/2016 11:40:00 AM		Prep Date:	11/3/2016	
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	LCS-77776		Batch ID:	77776		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS4_161104A		Analysis Date:	11/4/2016 11:42:00 AM		Prep Date:	11/3/2016	
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	0.200	0.00500	0.200	0	100	80	120
Barium	0.199	0.0100	0.200	0	99.4	80	120
Beryllium	0.197	0.00100	0.200	0	98.6	80	120
Boron	0.188	0.0300	0.200	0	94.1	80	120
Cadmium	0.202	0.00100	0.200	0	101	80	120
Calcium	4.75	0.300	5.00	0	95.0	80	120
Chromium	0.201	0.00500	0.200	0	101	80	120
Cobalt	0.204	0.00500	0.200	0	102	80	120
Lead	0.195	0.00100	0.200	0	97.5	80	120
Lithium	0.188	0.0100	0.200	0	93.8	80	120
Molybdenum	0.198	0.00500	0.200	0	98.8	80	120
Selenium	0.202	0.00500	0.200	0	101	80	120
Thallium	0.196	0.00150	0.200	0	98.0	80	120

Sample ID	LCSD-77776			Batch ID:	77776		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_161104A		Analysis Date:	11/4/2016 11:44:00 AM		Prep Date:	11/3/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.198	0.00250	0.200	0	99.1	80	120	0.331	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104A

Sample ID	LCSD-77776	Batch ID:	77776	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 11:44:00 AM	Prep Date:	11/3/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Arsenic	0.200	0.00500	0.200	0	99.8	80	120	0.343	15	
Barium	0.198	0.0100	0.200	0	99.2	80	120	0.184	15	
Beryllium	0.201	0.00100	0.200	0	100	80	120	1.77	15	
Boron	0.200	0.0300	0.200	0	99.8	80	120	5.93	15	
Cadmium	0.202	0.00100	0.200	0	101	80	120	0.139	15	
Calcium	4.76	0.300	5.00	0	95.3	80	120	0.305	15	
Chromium	0.203	0.00500	0.200	0	101	80	120	0.677	15	
Cobalt	0.204	0.00500	0.200	0	102	80	120	0.291	15	
Lead	0.196	0.00100	0.200	0	98.0	80	120	0.459	15	
Lithium	0.193	0.0100	0.200	0	96.3	80	120	2.62	15	
Molybdenum	0.198	0.00500	0.200	0	99.0	80	120	0.229	15	
Selenium	0.202	0.00500	0.200	0	101	80	120	0.200	15	
Thallium	0.197	0.00150	0.200	0	98.7	80	120	0.799	15	

Sample ID	1611004-07B SD	Batch ID:	77776	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 11:50:00 AM	Prep Date:	11/3/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	114	75.0	0	110				3.19	10	

Sample ID	1611004-07B PDS	Batch ID:	77776	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 12:10:00 PM	Prep Date:	11/3/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	328	15.0	250	110	87.2	80	120			

Sample ID	1611004-07B MS	Batch ID:	77776	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 12:12:00 PM	Prep Date:	11/3/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.352	0.125	0.200	0	176	80	120			S
Arsenic	0.214	0.250	0.200	0	107	80	120			
Barium	0.395	0.500	0.200	0.191	102	80	120			
Beryllium	0.203	0.0500	0.200	0	101	80	120			
Boron	1.40	1.50	0.200	0.743	330	80	120			S
Cadmium	0.203	0.0500	0.200	0	102	80	120			
Calcium	115	15.0	5.00	110	106	80	120			
Chromium	0.210	0.250	0.200	0	105	80	120			
Cobalt	0.207	0.250	0.200	0	104	80	120			
Lead	0.198	0.0500	0.200	0	99.0	80	120			
Molybdenum	0.239	0.250	0.200	0	119	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104A

Sample ID	1611004-07B MS	Batch ID:	77776	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 12:12:00 PM	Prep Date:	11/3/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.250	0.250	0.200	0	125	80	120			S
Thallium	0.200	0.0750	0.200	0	100	80	120			

Sample ID	1611004-07B MSD	Batch ID:	77776	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 12:14:00 PM	Prep Date:	11/3/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.243	0.125	0.200	0	121	80	120	36.6	15	SR
Arsenic	0.208	0.250	0.200	0	104	80	120	3.20	15	
Barium	0.386	0.500	0.200	0.191	97.3	80	120	2.42	15	
Beryllium	0.203	0.0500	0.200	0	101	80	120	0.074	15	
Boron	0.937	1.50	0.200	0.743	97.1	80	120	39.7	15	R
Cadmium	0.203	0.0500	0.200	0	102	80	120	0.049	15	
Calcium	115	15.0	5.00	110	100	80	120	0.259	15	
Chromium	0.205	0.250	0.200	0	102	80	120	2.65	15	
Cobalt	0.200	0.250	0.200	0	100	80	120	3.36	15	
Lead	0.199	0.0500	0.200	0	99.6	80	120	0.579	15	
Molybdenum	0.212	0.250	0.200	0	106	80	120	12.0	15	
Selenium	0.227	0.250	0.200	0	114	80	120	9.31	15	
Thallium	0.197	0.0750	0.200	0	98.5	80	120	1.66	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104A

Sample ID	ICV-161104			Batch ID:	R88852		TestNo:	SW6020A		Units:	mg/L	
SampType:	ICV			Run ID:	ICP-MS4_161104A		Analysis Date:	11/4/2016 11:30:00 AM		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	0.0997	0.00500	0.100	0	99.7	90	110			
Barium	0.100	0.0100	0.100	0	100	90	110			
Beryllium	0.0997	0.00100	0.100	0	99.7	90	110			
Boron	0.100	0.0300	0.100	0	100	90	110			
Cadmium	0.100	0.00100	0.100	0	100	90	110			
Calcium	2.31	0.300	2.50	0	92.3	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.103	0.00500	0.100	0	103	90	110			
Lead	0.0994	0.00100	0.100	0	99.4	90	110			
Lithium	0.0969	0.0100	0.100	0	96.9	90	110			
Molybdenum	0.0976	0.00500	0.100	0	97.6	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.0997	0.00150	0.100	0	99.7	90	110			

Sample ID	LCVL-161104	Batch ID:	R88852	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 11:34:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00199	0.00250	0.00200	0	99.7	70	130			
Arsenic	0.00516	0.00500	0.00500	0	103	70	130			
Barium	0.00508	0.0100	0.00500	0	102	70	130			
Beryllium	0.000964	0.00100	0.00100	0	96.4	70	130			
Boron	0.0260	0.0300	0.0200	0	130	70	130			
Cadmium	0.00102	0.00100	0.00100	0	102	70	130			
Calcium	0.0973	0.300	0.100	0	97.3	70	130			
Chromium	0.00530	0.00500	0.00500	0	106	70	130			
Cobalt	0.00523	0.00500	0.00500	0	105	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			
Lithium	0.00982	0.0100	0.0100	0	98.2	70	130			
Molybdenum	0.00528	0.00500	0.00500	0	106	70	130			
Selenium	0.00552	0.00500	0.00500	0	110	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV1-161104	Batch ID:	R88852	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 12:18:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.201	0.00250	0.200	0	101	90	110			
Arsenic	0.205	0.00500	0.200	0	103	90	110			
Barium	0.206	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104A

Sample ID	CCV1-161104	Batch ID:	R88852	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 12:18:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.206	0.00100	0.200	0	103	90	110			
Boron	0.213	0.0300	0.200	0	106	90	110			
Cadmium	0.206	0.00100	0.200	0	103	90	110			
Calcium	4.76	0.300	5.00	0	95.3	90	110			
Chromium	0.206	0.00500	0.200	0	103	90	110			
Cobalt	0.206	0.00500	0.200	0	103	90	110			
Lead	0.200	0.00100	0.200	0	100	90	110			
Lithium	0.199	0.0100	0.200	0	99.7	90	110			
Molybdenum	0.203	0.00500	0.200	0	101	90	110			
Selenium	0.205	0.00500	0.200	0	103	90	110			
Thallium	0.203	0.00150	0.200	0	102	90	110			

Sample ID	LCVL1-161104	Batch ID:	R88852	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161104A	Analysis Date:	11/4/2016 12:34:00 PM	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	0.00502	0.00500	0.00500	0	100	70	130			
Barium	0.00508	0.0100	0.00500	0	102	70	130			
Beryllium	0.00101	0.00100	0.00100	0	101	70	130			
Boron	0.0246	0.0300	0.0200	0	123	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Calcium	0.0954	0.300	0.100	0	95.4	70	130			
Chromium	0.00524	0.00500	0.00500	0	105	70	130			
Cobalt	0.00515	0.00500	0.00500	0	103	70	130			
Lead	0.000962	0.00100	0.00100	0	96.2	70	130			
Lithium	0.00949	0.0100	0.0100	0	94.9	70	130			
Molybdenum	0.00489	0.00500	0.00500	0	97.7	70	130			
Selenium	0.00555	0.00500	0.00500	0	111	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104B

Sample ID	ICV-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 11:30:00 AM	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	0.0997	0.00500	0.100	0	99.7	90	110			
Barium	0.100	0.0100	0.100	0	100	90	110			
Beryllium	0.0997	0.00100	0.100	0	99.7	90	110			
Cadmium	0.100	0.00100	0.100	0	100	90	110			
Calcium	2.31	0.300	2.50	0	92.3	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.103	0.00500	0.100	0	103	90	110			
Lead	0.0994	0.00100	0.100	0	99.4	90	110			
Lithium	0.0969	0.0100	0.100	0	96.9	90	110			
Molybdenum	0.0976	0.00500	0.100	0	97.6	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.0997	0.00150	0.100	0	99.7	90	110			

Sample ID	LCVL-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 11:34:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00199	0.00250	0.00200	0	99.7	70	130			
Arsenic	0.00516	0.00500	0.00500	0	103	70	130			
Barium	0.00508	0.0100	0.00500	0	102	70	130			
Beryllium	0.000964	0.00100	0.00100	0	96.4	70	130			
Cadmium	0.00102	0.00100	0.00100	0	102	70	130			
Calcium	0.0973	0.300	0.100	0	97.3	70	130			
Chromium	0.00530	0.00500	0.00500	0	106	70	130			
Cobalt	0.00523	0.00500	0.00500	0	105	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			
Lithium	0.00982	0.0100	0.0100	0	98.2	70	130			
Molybdenum	0.00528	0.00500	0.00500	0	106	70	130			
Selenium	0.00552	0.00500	0.00500	0	110	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV3-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 1:49:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.99	0.300	5.00	0	99.8	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104B

Sample ID	LCVL3-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 1:53:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		0.118	0.300	0.100	0	118	70	130			

Sample ID	CCV4-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 2:16:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium		4.73	0.300	5.00	0	94.6	90	110			

Sample ID	LCVL4-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 2:20:00 PM	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			

Sample ID	CCV5-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 2:49:00 PM	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	0.214	0.00500	0.200	0	107	90	110			
Barium	0.207	0.0100	0.200	0	103	90	110			
Beryllium	0.205	0.00100	0.200	0	103	90	110			
Cadmium	0.209	0.00100	0.200	0	104	90	110			
Calcium	4.75	0.300	5.00	0	94.9	90	110			
Chromium	0.201	0.00500	0.200	0	101	90	110			
Cobalt	0.210	0.00500	0.200	0	105	90	110			
Lead	0.197	0.00100	0.200	0	98.7	90	110			
Lithium	0.206	0.0100	0.200	0	103	90	110			
Molybdenum	0.203	0.00500	0.200	0	102	90	110			
Selenium	0.214	0.00500	0.200	0	107	90	110			
Thallium	0.200	0.00150	0.200	0	100	90	110			

Sample ID	LCVL5-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 2:53:00 PM	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		0.00542	0.00500	0.00500	0	108	70	130			
Barium		0.00521	0.0100	0.00500	0	104	70	130			
Beryllium		0.00107	0.00100	0.00100	0	107	70	130			
Cadmium		0.000999	0.00100	0.00100	0	99.9	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104B

Sample ID	LCVL5-161104			Batch ID:	R88864		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCVL			Run ID:	ICP-MS4_161104B		Analysis Date:	11/4/2016 2:53:00 PM		Prep Date:		
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.102	0.300	0.100	0	102	70	130			
Chromium	0.00517	0.00500	0.00500	0	103	70	130			
Cobalt	0.00524	0.00500	0.00500	0	105	70	130			
Lead	0.000918	0.00100	0.00100	0	91.8	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	70	130			
Molybdenum	0.00508	0.00500	0.00500	0	102	70	130			
Selenium	0.00549	0.00500	0.00500	0	110	70	130			
Thallium	0.000995	0.00150	0.00100	0	99.5	70	130			

Sample ID	CCV6-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 3:09:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.199	0.00250	0.200	0	99.4	90	110			
Arsenic	0.216	0.00500	0.200	0	108	90	110			
Barium	0.203	0.0100	0.200	0	102	90	110			
Beryllium	0.210	0.00100	0.200	0	105	90	110			
Cadmium	0.205	0.00100	0.200	0	102	90	110			
Calcium	4.78	0.300	5.00	0	95.6	90	110			
Chromium	0.205	0.00500	0.200	0	103	90	110			
Cobalt	0.212	0.00500	0.200	0	106	90	110			
Lead	0.199	0.00100	0.200	0	99.5	90	110			
Lithium	0.203	0.0100	0.200	0	101	90	110			
Molybdenum	0.201	0.00500	0.200	0	101	90	110			
Selenium	0.214	0.00500	0.200	0	107	90	110			
Thallium	0.201	0.00150	0.200	0	100	90	110			

Sample ID	LCVL6-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 3:30:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00189	0.00250	0.00200	0	94.7	70	130			
Arsenic	0.00539	0.00500	0.00500	0	108	70	130			
Barium	0.00526	0.0100	0.00500	0	105	70	130			
Beryllium	0.000943	0.00100	0.00100	0	94.3	70	130			
Cadmium	0.000990	0.00100	0.00100	0	99.0	70	130			
Calcium	0.0940	0.300	0.100	0	94.0	70	130			
Chromium	0.00518	0.00500	0.00500	0	104	70	130			
Cobalt	0.00527	0.00500	0.00500	0	105	70	130			
Lead	0.000879	0.00100	0.00100	0	87.9	70	130			
Lithium	0.0111	0.0100	0.0100	0	111	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161104B

Sample ID	LCVL6-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 3:30:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum		0.00491	0.00500	0.00500	0	98.1	70	130			
Selenium		0.00580	0.00500	0.00500	0	116	70	130			
Thallium		0.000996	0.00150	0.00100	0	99.6	70	130			

Sample ID	CCV7-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 4:09:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.79	0.300	5.00	0	95.8	90	110			

Sample ID	LCVL7-161104	Batch ID:	R88864	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161104B	Analysis Date:	11/4/2016 4:13:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0948	0.300	0.100	0	94.8	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161107D

The QC data in batch 77776 applies to the following samples: 1610230-01A, 1610230-02A, 1610230-03A, 1610230-04A, 1610230-05A, 1610230-06A, 1610230-07A

Sample ID 1611004-07B SD	Batch ID: 77776	TestNo: SW6020A	Units: mg/L
SampType: SD	Run ID: ICP-MS4_161107D	Analysis Date: 11/7/2016 12:12:00 PM	Prep Date: 11/3/2016

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	0.186	0.0500	0	0.185				0.248	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				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Lithium	<0.0250	0.0500	0	0.0177				0	10	
Molybdenum	<0.0100	0.0250	0	0				0	10	
Selenium	<0.0100	0.0250	0	0.00739				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID 1611004-07B PDS	Batch ID: 77776	TestNo: SW6020A	Units: mg/L
SampType: PDS	Run ID: ICP-MS4_161107D	Analysis Date: 11/7/2016 12:16:00 PM	Prep Date: 11/3/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.183	0.00250	0.200	0	91.7	80	120			
Arsenic	0.201	0.00500	0.200	0	100	80	120			
Barium	0.377	0.0100	0.200	0.185	95.7	80	120			
Beryllium	0.205	0.00100	0.200	0	102	80	120			
Cadmium	0.193	0.00100	0.200	0	96.6	80	120			
Chromium	0.205	0.00500	0.200	0	102	80	120			
Cobalt	0.199	0.00500	0.200	0	99.4	80	120			
Lead	0.195	0.00100	0.200	0	97.5	80	120			
Lithium	0.210	0.0100	0.200	0.0177	96.0	80	120			
Molybdenum	0.192	0.00500	0.200	0	96.2	80	120			
Selenium	0.201	0.00500	0.200	0.00739	96.9	80	120			
Thallium	0.193	0.00150	0.200	0	96.7	80	120			

Sample ID 1611004-07B MS	Batch ID: 77776	TestNo: SW6020A	Units: mg/L
SampType: MS	Run ID: ICP-MS4_161107D	Analysis Date: 11/7/2016 12:18:00 PM	Prep Date: 11/3/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.216	0.0100	0.200	0.0177	99.0	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161107D

Sample ID	1611004-07B MSD	Batch ID:	77776	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_161107D	Analysis Date:	11/7/2016 12:20:00 PM	Prep Date:	11/3/2016			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual
Lithium		0.214	0.0100	0.200	0.0177	98.1	80	120	0.819	15

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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161107D

Sample ID	ICV-161107	Batch ID:	R88883	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_161107D	Analysis Date:	11/7/2016 10:52:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.104	0.00250	0.100	0	104	90	110			
Arsenic	0.100	0.00500	0.100	0	100	90	110			
Barium	0.104	0.0100	0.100	0	104	90	110			
Beryllium	0.103	0.00100	0.100	0	103	90	110			
Cadmium	0.104	0.00100	0.100	0	104	90	110			
Chromium	0.108	0.00500	0.100	0	108	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	0.0983	0.0100	0.100	0	98.3	90	110			
Molybdenum	0.101	0.00500	0.100	0	101	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.101	0.00150	0.100	0	101	90	110			

Sample ID	LCVL-161107	Batch ID:	R88883	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161107D	Analysis Date:	11/7/2016 11:00:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00200	0.00250	0.00200	0	100	70	130			
Arsenic	0.00513	0.00500	0.00500	0	103	70	130			
Barium	0.00514	0.0100	0.00500	0	103	70	130			
Beryllium	0.000956	0.00100	0.00100	0	95.6	70	130			
Cadmium	0.00102	0.00100	0.00100	0	102	70	130			
Chromium	0.00536	0.00500	0.00500	0	107	70	130			
Cobalt	0.00529	0.00500	0.00500	0	106	70	130			
Lead	0.00110	0.00100	0.00100	0	110	70	130			
Lithium	0.0108	0.0100	0.0100	0	108	70	130			
Molybdenum	0.00516	0.00500	0.00500	0	103	70	130			
Selenium	0.00553	0.00500	0.00500	0	111	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID	CCV1-161107	Batch ID:	R88883	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161107D	Analysis Date:	11/7/2016 11:34:00 AM	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	0.205	0.00500	0.200	0	103	90	110			
Barium	0.201	0.0100	0.200	0	100	90	110			
Beryllium	0.199	0.00100	0.200	0	99.3	90	110			
Cadmium	0.205	0.00100	0.200	0	102	90	110			
Chromium	0.203	0.00500	0.200	0	102	90	110			
Cobalt	0.206	0.00500	0.200	0	103	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161107D

Sample ID	CCV1-161107			Batch ID:	R88883		TestNo:	SW6020A		Units:	mg/L		
SampType:	CCV			Run ID:	ICP-MS4_161107D		Analysis Date:	11/7/2016 11:34:00 AM		Prep Date:			
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lead	0.205	0.00100	0.200	0	103	90	110			
Lithium	0.189	0.0100	0.200	0	94.3	90	110			
Molybdenum	0.203	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	LCVL1-161107		Batch ID:	R88883		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCVL		Run ID:	ICP-MS4_161107D		Analysis Date:	11/7/2016 11:38:00 AM		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	0.00530	0.00500	0.00500	0	106	70	130			
Barium	0.00521	0.0100	0.00500	0	104	70	130			
Beryllium	0.00109	0.00100	0.00100	0	109	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Chromium	0.00521	0.00500	0.00500	0	104	70	130			
Cobalt	0.00536	0.00500	0.00500	0	107	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0121	0.0100	0.0100	0	121	70	130			
Molybdenum	0.00530	0.00500	0.00500	0	106	70	130			
Selenium	0.00577	0.00500	0.00500	0	115	70	130			
Thallium	0.00107	0.00150	0.00100	0	107	70	130			

Sample ID	CCV2-161107	Batch ID:	R88883	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161107D	Analysis Date:	11/7/2016 12:22:00 PM	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	0.207	0.00500	0.200	0	103	90	110			
Barium	0.200	0.0100	0.200	0	100	90	110			
Beryllium	0.207	0.00100	0.200	0	103	90	110			
Cadmium	0.200	0.00100	0.200	0	100	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	0.203	0.00100	0.200	0	101	90	110			
Lithium	0.205	0.0100	0.200	0	103	90	110			
Molybdenum	0.199	0.00500	0.200	0	99.4	90	110			
Selenium	0.205	0.00500	0.200	0	102	90	110			
Thallium	0.203	0.00150	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161107D

Sample ID	LCVL2-161107	Batch ID:	R88883	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161107D	Analysis Date:	11/7/2016 12:45:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00191	0.00250	0.00200	0	95.6	70	130			
Arsenic	0.00518	0.00500	0.00500	0	104	70	130			
Barium	0.00488	0.0100	0.00500	0	97.6	70	130			
Beryllium	0.000869	0.00100	0.00100	0	86.9	70	130			
Cadmium	0.000961	0.00100	0.00100	0	96.1	70	130			
Chromium	0.00523	0.00500	0.00500	0	105	70	130			
Cobalt	0.00530	0.00500	0.00500	0	106	70	130			
Lead	0.000944	0.00100	0.00100	0	94.4	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	70	130			
Molybdenum	0.00477	0.00500	0.00500	0	95.4	70	130			
Selenium	0.00550	0.00500	0.00500	0	110	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161108A

The QC data in batch 77776 applies to the following samples: 1610230-01A, 1610230-02A, 1610230-03A, 1610230-04A, 1610230-05A, 1610230-06A, 1610230-07A

Sample ID	1611004-07B SD	Batch ID:	77776	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_161108A	Analysis Date:	11/8/2016 1:52:00 PM	Prep Date:	11/3/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.388	0.150	0	0.256				41.1	10	R

Sample ID: 1611004-07B PDS	Batch ID: 77776	TestNo: SW6020A	Units: mg/L							
SampType: PDS	Run ID: ICP-MS4_161108A	Analysis Date: 11/8/2016 1:54:00 PM	Prep Date: 11/3/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.426	0.0300	0.200	0.256	84.9	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161108A

Sample ID	ICV-161108	Batch ID:	R88885	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_161108A	Analysis Date:	11/8/2016 12:31:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.100	0.0300	0.100	0	100	90	110			

Sample ID	LCVL-161108	Batch ID:	R88885	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161108A	Analysis Date:	11/8/2016 12:33:00 PM	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			

Sample ID	CCV1-161108	Batch ID:	R88885	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161108A	Analysis Date:	11/8/2016 12:59:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.206	0.0300	0.200	0	103	90	110			

Sample ID	LCVL1-161108	Batch ID:	R88885	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161108A	Analysis Date:	11/8/2016 1:26:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0249	0.0300	0.0200	0	124	70	130			

Sample ID	CCV2-161108		Batch ID:	R88885		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS4_161108A		Analysis Date:	11/8/2016 2:06:00 PM		Prep Date:		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Boron	0.220	0.0300	0.200	0	110	90	110				

Sample ID	LCVL2-161108	Batch ID:	R88885	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161108A	Analysis Date:	11/8/2016 2:28:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0250	0.0300	0.0200	0	125	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161031A

The QC data in batch 77728 applies to the following samples: 1610230-01D, 1610230-02D, 1610230-03D, 1610230-04D, 1610230-05D, 1610230-06D, 1610230-07D

Sample ID	MB-77728		Batch ID:	77728		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC2_161031A		Analysis Date:	10/31/2016 9:28:33 AM		Prep Date:	10/31/2016	
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	LCS-77728		Batch ID:	77728		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC2_161031A		Analysis Date:	10/31/2016 9:43:09 AM		Prep Date:	10/31/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.90	1.00	10.00	0	99.0	90	110			
Fluoride	3.64	0.400	4.000	0	90.9	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

Sample ID	LCSD-77728		Batch ID:	77728		TestNo:	E300		Units:	mg/L	
SampType:	LCSD		Run ID:	IC2_161031A		Analysis Date:	10/31/2016 9:57:49 AM		Prep Date:	10/31/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.99	1.00	10.00	0	99.9	90	110	0.883	20	
Fluoride	3.78	0.400	4.000	0	94.5	90	110	3.86	20	
Sulfate	30.1	3.00	30.00	0	100	90	110	0.040	20	

Sample ID	1610239-01BMS		Batch ID:	77728		TestNo:	E300		Units:	mg/L	
SampType:	MS		Run ID:	IC2_161031A		Analysis Date:	10/31/2016 3:22:23 PM		Prep Date:	10/31/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2650	100	2000	529.4	106	90	110			
Fluoride	2010	40.0	2000	0	100	90	110			
Sulfate	2190	300	2000	175.8	101	90	110			

Sample ID	1610239-01BMSD			Batch ID:	77728			TestNo:	E300			Units:	mg/L		
SampType:	MSD			Run ID:	IC2_161031A			Analysis Date:	10/31/2016 3:36:59 PM			Prep Date:	10/31/2016		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Chloride	2670	100	2000	529.4	107	90	110	0.483	20	
Fluoride	2040	40.0	2000	0	102	90	110	1.27	20	
Sulfate	2210	300	2000	175.8	102	90	110	0.789	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161031A

Sample ID	ICV-161031	Batch ID:	R88800	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_161031A	Analysis Date:	10/31/2016 8:49:58 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.6	1.00	25.00	0	98.3	90	110			
Fluoride	9.34	0.400	10.00	0	93.4	90	110			
Sulfate	75.9	3.00	75.00	0	101	90	110			

Sample ID	CCV1-161031	Batch ID:	R88800	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_161031A	Analysis Date:	10/31/2016 12:32:51 P	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	3.94	0.400	4.000	0	98.4	90	110			
Sulfate	30.6	3.00	30.00	0	102	90	110			

Sample ID	CCV2-161031	Batch ID:	R88800	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_161031A	Analysis Date:	10/31/2016 3:51:36 PM	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	30.8	3.00	30.00	0	103	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161110A

The QC data in batch 77847 applies to the following samples: 1610230-04D

Sample ID	MB-77847	Batch ID:	77847	TestNo:	E300	Units:	mg/L				
SampType:	MBLK	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 9:15:33 AM	Prep Date:	11/10/2016				
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	LCS-77847	Batch ID:	77847	TestNo:	E300	Units:	mg/L				
SampType:	LCS	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 9:30:09 AM	Prep Date:	11/10/2016				
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	3.80	0.400	4.000	0	94.9	90	110				
Sulfate	31.1	3.00	30.00	0	104	90	110				

Sample ID	LCSD-77847	Batch ID:	77847	TestNo:	E300	Units:	mg/L				
SampType:	LCSD	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 9:44:46 AM	Prep Date:	11/10/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.1	1.00	10.00	0	101	90	110	1.16	20		
Fluoride	3.84	0.400	4.000	0	96.0	90	110	1.15	20		
Sulfate	30.9	3.00	30.00	0	103	90	110	0.685	20		

Sample ID	1610230-04DMS	Batch ID:	77847	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 3:11:11 PM	Prep Date:	11/10/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	251	10.0	200.0	46.57	102	90	110				
Fluoride	197	4.00	200.0	0	98.4	90	110				
Sulfate	996	30.0	200.0	801.3	97.3	90	110				

Sample ID	1610230-04DMSD	Batch ID:	77847	TestNo:	E300	Units:	mg/L				
SampType:	MSD	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 3:25:48 PM	Prep Date:	11/10/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	252	10.0	200.0	46.57	103	90	110	0.125	20		
Fluoride	198	4.00	200.0	0	99.0	90	110	0.632	20		
Sulfate	997	30.0	200.0	801.3	97.9	90	110	0.129	20		

Sample ID	1611091-01CMS	Batch ID:	77847	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 3:40:24 PM	Prep Date:	11/10/2016				
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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161110A

Sample ID	1611091-01CMS	Batch ID:	77847	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 3:40:24 PM	Prep Date:	11/10/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	37.4	1.00	20.00	17.36	100	90	110			
Fluoride	20.2	0.400	20.00	0	101	90	110			
Sulfate	37.9	3.00	20.00	17.21	103	90	110			

Sample ID	1611091-01CMSD	Batch ID:	77847	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 3:55:01 PM	Prep Date:	11/10/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	37.6	1.00	20.00	17.36	101	90	110	0.468	20	
Fluoride	20.3	0.400	20.00	0	102	90	110	0.292	20	
Sulfate	38.2	3.00	20.00	17.21	105	90	110	0.710	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161110A

Sample ID	ICV-161110	Batch ID:	R88929	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 8:38:18 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	25.3	1.00	25.00	0	101	90	110			
Fluoride	9.65	0.400	10.00	0	96.5	90	110			
Sulfate	77.8	3.00	75.00	0	104	90	110			

Sample ID	CCV1-161110	Batch ID:	R88929	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 12:54:03 P	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	3.96	0.400	4.000	0	98.9	90	110			
Sulfate	30.6	3.00	30.00	0	102	90	110			

Sample ID	CCV2-161110	Batch ID:	R88929	TestNo:	E300	Units:	mg/L				
SampType:	CCV	Run ID:	IC2_161110A	Analysis Date:	11/10/2016 4:09:37 PM	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	4.06	0.400	4.000	0	102	90	110			
Sulfate	30.5	3.00	30.00	0	102	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_161027A

The QC data in batch 77694 applies to the following samples: 1610230-01D, 1610230-02D, 1610230-03D, 1610230-04D, 1610230-05D, 1610230-06D, 1610230-07D

Sample ID	1610202-11D-DUP	Batch ID:	77694	TestNo:	M4500-H+ B	Units:	pH	Units@20.8°C			
SampType:	DUP	Run ID:	TITRATOR_161027A	Analysis Date:	10/27/2016 10:48:00 A	Prep Date:	10/27/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH		8.02	0	0	8.000				0.250	5	

Sample ID	1610230-01D-DUP	Batch ID:	77694	TestNo:	M4500-H+ B	Units:	pH Units@18.8°C			
SampType:	DUP	Run ID:	TITRATOR_161027A	Analysis Date:	10/27/2016 10:58:00 A	Prep Date:	10/27/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	6.57	0	0	6.450				1.84	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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_161027A

Sample ID	ICV-161027	Batch ID:	R88729	TestNo:	M4500-H+ B	Units:	pH Units@21.9°C			
SampType:	ICV	Run ID:	TITRATOR_161027A	Analysis Date:	10/27/2016 9:58:00 AM	Prep Date:	10/27/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.91	0	10.00	0	99.1	99	101			

Sample ID	CCV1-161027	Batch ID:	R88729	TestNo:	M4500-H+ B	Units:	pH Units@22.1°C			
SampType:	CCV	Run ID:	TITRATOR_161027A	Analysis Date:	10/27/2016 10:55:00 A	Prep Date:	10/27/2016			
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	CCV2-161027	Batch ID:	R88729	TestNo:	M4500-H+ B	Units:	pH Units@21.9°C				
SampType:	CCV	Run ID:	TITRATOR_161027A	Analysis Date:	10/27/2016 11:10:00 A	Prep Date:	10/27/2016				
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			

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: 1610230
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_161031A

The QC data in batch 77739 applies to the following samples: 1610230-01D, 1610230-02D, 1610230-03D, 1610230-04D, 1610230-05D, 1610230-06D, 1610230-07D

Sample ID	MB-77739		Batch ID:	77739		TestNo:	M2540C		Units:	mg/L	
SampType:	MBLK		Run ID:	WC_161031A		Analysis Date:	11/1/2016 8:43:00 AM		Prep Date:	10/31/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-77739		Batch ID:	77739		TestNo:	M2540C		Units:	mg/L	
SampType:	LCS		Run ID:	WC_161031A		Analysis Date:	11/1/2016 8:43:00 AM		Prep Date:	10/31/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 747 10.0 745.6 0 100 90 113

Sample ID	1610230-01D-DUP		Batch ID:	77739		TestNo:	M2540C		Units:	mg/L	
SampType:	DUP		Run ID:	WC_161031A		Analysis Date:	11/1/2016 8:43:00 AM		Prep Date:	10/31/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 1490 50.0 0 1495 0.335 5

Sample ID	1610230-07D-DUP		Batch ID:	77739		TestNo:	M2540C		Units:	mg/L	
SampType:	DUP		Run ID:	WC_161031A		Analysis Date:	11/1/2016 8:43:00 AM		Prep Date:	10/31/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 4310 50.0 0 4410 2.29 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: 20161055

This report contains the analytical results for the 7 sample(s) received under chain of custody by ESC Lab Sciences on 10/31/2016 8:56:40 AM. These samples are associated with your 1610230 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



Client : DHL Analytical, Inc.
 Client Project : 1610230
 Lab Number : 20161055
 Date Reported : 11/18/16
 Date Received : 10/31/16
 Page Number : 2 of 4

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20161055-01
Client ID : BMW-24
Date Sampled : 10/25/2016 2:20:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		2.68 +/- 1.21	0.692	pCi/l			
Radium-226	SM 7500 Ra B M*	1.37 +/- 0.306	0.102	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	1.31 +/- 0.906	0.590	pCi/l	11/07/16	11/10/16	JR

Lab ID : 20161055-02
Client ID : BMW-23
Date Sampled : 10/25/2016 3:10:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		2.23 +/- 1.03	0.668	pCi/l			
Radium-226	SM 7500 Ra B M*	0.472 +/- 0.177	0.132	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	1.76 +/- 0.856	0.536	pCi/l	11/07/16	11/10/16	JR

Lab ID : 20161055-03
Client ID : BMW-22
Date Sampled : 10/25/2016 4:05:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.65 +/- 0.907	0.539	pCi/l			
Radium-226	SM 7500 Ra B M*	0.633 +/- 0.182	0.110	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	1.02 +/- 0.725	0.429	pCi/l	11/07/16	11/10/16	JR

Lab ID : 20161055-04
Client ID : BMW-20
Date Sampled : 10/26/2016 8:15:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.20 +/- 1.17	0.718	pCi/l			
Radium-226	SM 7500 Ra B M*	0.347 +/- 0.137	0.080	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	0.848 +/- 1.03	0.638	pCi/l	11/07/16	11/10/16	JR



Client : DHL Analytical, Inc.
Client Project : 1610230
Lab Number : 20161055
Date Reported : 11/18/16
Date Received : 10/31/16
Page Number : 3 of 4

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20161055-05

Client ID : BMW-21

Date Sampled : 10/26/2016 9:10:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		1.99 +/- 0.877	0.536	pCi/l			
Radium-226	SM 7500 Ra B M*	0.383 +/- 0.151	0.088	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	1.61 +/- 0.726	0.448	pCi/l	11/07/16	11/10/16	JR

Lab ID : 20161055-06

Client ID : BMW-11AR

Date Sampled : 10/26/2016 10:15:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		1.55 +/- 0.973	0.650	pCi/l			
Radium-226	SM 7500 Ra B M*	0.631 +/- 0.183	0.154	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	0.922 +/- 0.790	0.496	pCi/l	11/07/16	11/10/16	JR

Lab ID : 20161055-07

Client ID : BMW-19

Date Sampled : 10/26/2016 11:20:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		0.403 +/- 0.827	0.632	pCi/l			
Radium-226	SM 7500 Ra B M*	0.141 +/- 0.113	0.152	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	0.262 +/- 0.714	0.480	pCi/l	11/07/16	11/10/16	JR



Client : DHL Analytical, Inc.
Client Project : 1610230
Lab Number : 20161055
Date Reported : 11/18/16
Date Received : 10/31/16
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	-0.021	114.0		NC	0.292	115.0	107.0 7.3	R1159
Radium-228	-0.240	84.4		NC	0.272	99.6	111.0 10.1	R3878

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: 1610230

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

Acct #: DHLRRTX

27-Oct-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
1	BMW-24	Aqueous	-01B	10/25/16 02:20 PM	500HDPEHNO3	1				
	BMW-24	Aqueous	-01C	10/25/16 02:20 PM	500HDPEHNO3		1			
2	BMW-23	Aqueous	-02B	10/25/16 03:10 PM	500HDPEHNO3	1				
	BMW-23	Aqueous	-02C	10/25/16 03:10 PM	500HDPEHNO3		1			
3	BMW-22	Aqueous	-03B	10/25/16 04:05 PM	500HDPEHNO3	1				
	BMW-22	Aqueous	-03C	10/25/16 04 05 PM	500HDPEHNO3		1			
4	BMW-20	Aqueous	-04B	10/26/16 08 15 AM	500HDPEHNO3	1				
	BMW-20	Aqueous	-04C	10/26/16 08 15 AM	500HDPEHNO3		1			
5	BMW-21	Aqueous	-05B	10/26/16 09:10 AM	500HDPEHNO3	1				
	BMW-21	Aqueous	-05C	10/26/16 09:10 AM	500HDPEHNO3		1			
6	BMW-11AR	Aqueous	-06B	10/26/16 10:15 AM	500HDPEHNO3	1				
	BMW-11AR	Aqueous	-06C	10/26/16 10:15 AM	500HDPEHNO3		1			
7	BMW-19	Aqueous	-07B	10/26/16 11:20 AM	500HDPEHNO3	1				
	BMW-19	Aqueous	-07C	10/26/16 11:20 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

20/6/1055 L P 9493

Relinquished by: <u>Bauer</u>	Date/Time: <u>10/27/16 1730</u>	Received by: <u>Lonestar</u>	Date/Time: <u>10/27/16 1730</u>
Relinquished by: _____	Received by: <u>2-2</u>	Date/Time: <u>10/31/16 0856</u>	

SAMPLE LOGIN

Date Received: 10/31/2016 8:56:4

Lab Number: 20161055

Due: 11/28/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20161055-01 B	BMW-24	NPW	10/25/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20161055-01 A	BMW-24	NPW	10/25/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161055-02 B	BMW-23	NPW	10/25/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20161055-02 A	BMW-23	NPW	10/25/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161055-03 B	BMW-22	NPW	10/25/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20161055-03 A	BMW-22	NPW	10/25/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161055-04 B	BMW-20	NPW	10/26/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20161055-04 A	BMW-20	NPW	10/26/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161055-05 B	BMW-21	NPW	10/26/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20161055-05 A	BMW-21	NPW	10/26/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161055-06 B	BMW-11AR	NPW	10/26/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20161055-06 A	BMW-11AR	NPW	10/26/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161055-07 B	BMW-19	NPW	10/26/16	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
20161055-07 A	BMW-19	NPW	10/26/16	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 ☒

Temperature: amb C

Ice

Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken ☒

Chain of Custody Record ☒

Labels in Tact ☒

Radiation Survey Complete

N/A

Anomalies

~~sample of sample time discrepancy: coc has "10:15" and container label has "10/31/16"~~

Inspected By: [Signature]

DATE

10/31/16

QA or Designee Review: Ramona Thomas

DATE

10/31/16

Sample Custodian Review: Dustin Mena

DATE

10/31/16

Project Notes:

LUMINANT



November 28, 2016

Will Vienne
Pastor, Behling & Wheeler
2201 Double Creek Dr #4004
Round Rock, Texas 78664
TEL: (512) 671-3434
FAX (512) 671-3446
RE: MLSES A1 Area Landfill

Order No.: 1610240

Dear Will Vienne:

DHL Analytical, Inc. received 3 sample(s) on 10/28/2016 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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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 YIENIVE
ADDITIONAL REPORT COPIES TO:

DATE: 10/26/16 PAGE 1 OF 1
PO #: 5164-B DHL WORK ORDER #: 1610242
PROJECT LOCATION OR NAME: MLSES - AI AREA LANDFILL
CLIENT PROJECT #: 5164-B COLLECTOR: J. BRAYTON

[illegible]

John Dupont

From: Sara Taube [Sara.Taube@pbwinc.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:TIKA (512) 671-3434
JOHN BRAYTON

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 27OCT16
ACTWGT: 30.00 LB
CAD: 6992678/SSF01722
DIMS: 17x15x12 IN

BILL THIRD PARTY

Ref # 156297V-436 R112A1V-EXP 08/17 *

TO

DHL
2300 DOUBLE CREEK DRIVE

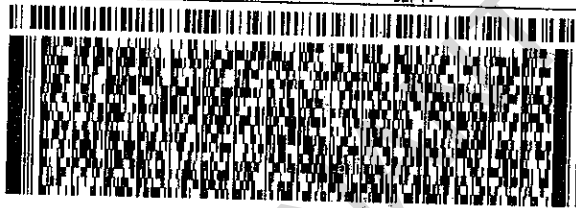
ROUND ROCK TX 78664

(512) 388-8222

REF:

JNU:
PD:

DEPT:



FedEx
Express



TRK# 7844 8170 2682
0201

FRI - 28 OCT 10:30A
PRIORITY OVERNIGHT

A8 BSMA

78664
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received:

10/28/2016

Work Order Number 1610240

Received by JT

Checklist completed by:  10/28/2016
Signature Date

Reviewed by  10/28/2016
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 ☐

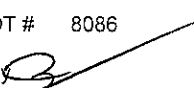
Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Container/Temp Blank temperature in compliance? Yes ☒ No ☐ 6.0 °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 

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: MLSES A1 Area Landfill
Lab Order: 1610240

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 10/28/16. A total of 3 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 11/9/16 (batch 77818) Calcium was detected above the reporting limit in the method blank (MB-77818). All samples were detected greater than 10 times the amount in the blank for this analyte. No further corrective actions were taken.

For Metals analysis performed on 11/9/16 (batch 77828) 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.

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Lab Order: 1610240**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1610240-01	BMW-18		10/26/16 12:35 PM	10/28/2016
1610240-02	BMW-26		10/26/16 02:40 PM	10/28/2016
1610240-03	BMW-27		10/26/16 03:40 PM	10/28/2016

LUMINANT

Lab Order: 1610240
Client: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1610240-01A	BMW-18	10/26/16 12:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/08/16 08:28 AM	77818
	BMW-18	10/26/16 12:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/09/16 08:02 AM	77828
	BMW-18	10/26/16 12:35 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/02/16 10:55 AM	77769
1610240-01D	BMW-18	10/26/16 12:35 PM	Aqueous	E300	Anion Preparation	11/01/16 09:04 AM	77744
	BMW-18	10/26/16 12:35 PM	Aqueous	M4500-H+ B	pH Preparation	10/28/16 01:10 PM	77718
	BMW-18	10/26/16 12:35 PM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739
1610240-02A	BMW-26	10/26/16 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/09/16 08:02 AM	77828
	BMW-26	10/26/16 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/08/16 08:28 AM	77818
	BMW-26	10/26/16 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/08/16 08:28 AM	77818
	BMW-26	10/26/16 02:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/02/16 10:55 AM	77769
1610240-02D	BMW-26	10/26/16 02:40 PM	Aqueous	E300	Anion Preparation	11/01/16 09:04 AM	77744
	BMW-26	10/26/16 02:40 PM	Aqueous	M4500-H+ B	pH Preparation	10/28/16 01:10 PM	77718
	BMW-26	10/26/16 02:40 PM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739
1610240-03A	BMW-27	10/26/16 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/08/16 08:28 AM	77818
	BMW-27	10/26/16 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/08/16 08:28 AM	77818
	BMW-27	10/26/16 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/09/16 08:02 AM	77828
	BMW-27	10/26/16 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	11/09/16 08:02 AM	77828
	BMW-27	10/26/16 03:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	11/02/16 10:55 AM	77769
1610240-03D	BMW-27	10/26/16 03:40 PM	Aqueous	E300	Anion Preparation	11/01/16 09:04 AM	77744
	BMW-27	10/26/16 03:40 PM	Aqueous	E300	Anion Preparation	11/01/16 09:04 AM	77744
	BMW-27	10/26/16 03:40 PM	Aqueous	M4500-H+ B	pH Preparation	10/28/16 01:10 PM	77718
	BMW-27	10/26/16 03:40 PM	Aqueous	M2540C	TDS Preparation	10/31/16 02:26 PM	77739

Lab Order: 1610240
Client: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1610240-01A	BMW-18	Aqueous	SW7470A	Mercury Total: Aqueous	77769	1	11/03/16 12:46 PM	CETAC2_HG_161103A
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77818	1	11/08/16 03:05 PM	ICP-MS4_161108B
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77828	1	11/09/16 03:09 PM	ICP-MS4_161109A
1610240-01D	BMW-18	Aqueous	E300	Anions by IC method - Water	77744	1	11/01/16 10:30 AM	IC2_161101A
	BMW-18	Aqueous	M4500-H+ B	pH	77718	1	10/28/16 02:12 PM	TITRATOR_161028A
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A
1610240-02A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	77769	1	11/03/16 12:48 PM	CETAC2_HG_161103A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77828	1	11/09/16 03:11 PM	ICP-MS4_161109A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77818	1	11/08/16 03:19 PM	ICP-MS4_161108B
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77818	5	11/08/16 03:54 PM	ICP-MS4_161108B
1610240-02D	BMW-26	Aqueous	E300	Anions by IC method - Water	77744	1	11/01/16 10:45 AM	IC2_161101A
	BMW-26	Aqueous	M4500-H+ B	pH	77718	1	10/28/16 02:15 PM	TITRATOR_161028A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A
1610240-03A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	77769	1	11/03/16 12:50 PM	CETAC2_HG_161103A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77818	1	11/08/16 03:21 PM	ICP-MS4_161108B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77818	10	11/08/16 03:56 PM	ICP-MS4_161108B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77828	1	11/09/16 03:13 PM	ICP-MS4_161109A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	77828	2	11/09/16 03:31 PM	ICP-MS4_161109A
1610240-03D	BMW-27	Aqueous	E300	Anions by IC method - Water	77744	1	11/01/16 10:59 AM	IC2_161101A
	BMW-27	Aqueous	E300	Anions by IC method - Water	77744	10	11/01/16 12:05 PM	IC2_161101A
	BMW-27	Aqueous	M4500-H+ B	pH	77718	1	10/28/16 02:18 PM	TITRATOR_161028A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	77739	1	11/01/16 08:43 AM	WC_161031A

DHL Analytical, Inc.

Date: 28-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610240

Client Sample ID: BMW-18
Lab ID: 1610240-01
Collection Date: 10/26/16 12:35 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/03/16 12:46 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/08/16 03:05 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:05 PM
Barium	0.0290	0.00300	0.0100		mg/L	1	11/08/16 03:05 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:05 PM
Boron	0.450	0.0100	0.0300		mg/L	1	11/09/16 03:09 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:05 PM
Calcium	6.55	0.100	0.300		mg/L	1	11/08/16 03:05 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:05 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/08/16 03:05 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:05 PM
Lithium	0.0156	0.00500	0.0100		mg/L	1	11/08/16 03:05 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:05 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:05 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/08/16 03:05 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	18.1	0.300	1.00		mg/L	1	11/01/16 10:30 AM
Fluoride	0.158	0.100	0.400	J	mg/L	1	11/01/16 10:30 AM
Sulfate	94.3	1.00	3.00		mg/L	1	11/01/16 10:30 AM
PH							
M4500-H+ B				Analyst: BJT			
pH	8.49	0	0		pH Units@20.9°C	1	10/28/16 02:12 PM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	534	10.0	10.0		mg/L	1	11/01/16 08:43 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: 28-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610240

Client Sample ID: BMW-26
Lab ID: 1610240-02
Collection Date: 10/26/16 02:40 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/03/16 12:48 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/08/16 03:19 PM
Arsenic	0.00318	0.00200	0.00500	J	mg/L	1	11/08/16 03:19 PM
Barium	0.0731	0.00300	0.0100		mg/L	1	11/08/16 03:19 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:19 PM
Boron	0.127	0.0100	0.0300		mg/L	1	11/09/16 03:11 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:19 PM
Calcium	44.3	0.500	1.50		mg/L	5	11/08/16 03:54 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:19 PM
Cobalt	0.00402	0.00300	0.00500	J	mg/L	1	11/08/16 03:19 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:19 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	11/08/16 03:19 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:19 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:19 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/08/16 03:19 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	16.2	0.300	1.00		mg/L	1	11/01/16 10:45 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/01/16 10:45 AM
Sulfate	140	1.00	3.00		mg/L	1	11/01/16 10:45 AM
PH		M4500-H+ B		Analyst: BJT			
pH	6.14	0	0		pH Units@20.7°C	1	10/28/16 02:15 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	414	10.0	10.0		mg/L	1	11/01/16 08:43 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: 28-Nov-16

CLIENT: Pastor, Behling & Wheeler
Project: MLSES A1 Area Landfill
Project No: 5164-B
Lab Order: 1610240

Client Sample ID: BMW-27
Lab ID: 1610240-03
Collection Date: 10/26/16 03:40 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: RO			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	11/03/16 12:50 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	11/08/16 03:21 PM
Arsenic	0.00625	0.00200	0.00500		mg/L	1	11/08/16 03:21 PM
Barium	0.0339	0.00300	0.0100		mg/L	1	11/08/16 03:21 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:21 PM
Boron	0.548	0.0200	0.0600		mg/L	2	11/09/16 03:31 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:21 PM
Calcium	196	1.00	3.00		mg/L	10	11/08/16 03:56 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:21 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	11/08/16 03:21 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	11/08/16 03:21 PM
Lithium	0.0933	0.00500	0.0100		mg/L	1	11/08/16 03:21 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:21 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	11/08/16 03:21 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	11/08/16 03:21 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	102	3.00	10.0		mg/L	10	11/01/16 12:05 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	11/01/16 10:59 AM
Sulfate	700	10.0	30.0		mg/L	10	11/01/16 12:05 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.39	0	0		pH Units@20.5°C	1	10/28/16 02:18 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2020	50.0	50.0		mg/L	1	11/01/16 08:43 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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT**RunID: CETAC2_HG_161103A**

The QC data in batch 77769 applies to the following samples: 1610240-01A, 1610240-02A, 1610240-03A

Sample ID	MB-77769		Batch ID:	77769		TestNo:	SW7470A		Units:	mg/L	
SampType:	MBLK		Run ID:	CETAC2_HG_161103A		Analysis Date:	11/3/2016 12:11:16 PM		Prep Date:	11/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-77769			Batch ID:	77769		TestNo:	SW7470A		Units:	mg/L	
SampType:	LCS			Run ID:	CETAC2_HG_161103A		Analysis Date:	11/3/2016 12:13:32 PM		Prep Date:	11/2/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Mercury 0.00208 0.000200 0.00200 0 104 85 115

Sample ID	LCSD-77769	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:15:48 PM	Prep Date:	11/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00209 0.000200 0.00200 0 104 85 115 0.480 15

Sample ID	1610230-06A SD	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:20:21 PM	Prep Date:	11/2/2016			
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	1610230-06A PDS	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:22:36 PM	Prep Date:	11/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00241 0.000200 0.00250 0 96.4 85 115

Sample ID	1610230-06A MS	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L				
SampType:	MS	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:24:51 PM	Prep Date:	11/2/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00210 0.000200 0.00200 0 105 80 120

Sample ID	1610230-06A MSD	Batch ID:	77769	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:27:07 PM	Prep Date:	11/2/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00211 0.000200 0.00200 0 106 80 120 0.475 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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161103A

Sample ID	ICV-161103	Batch ID:	R88836	TestNo:	SW7470A	Units:	mg/L			
SampType:	ICV	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:06:42 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00383	0.000200	0.00400	0	95.8	90	110			

Sample ID	CCV1-161103	Batch ID:	R88836	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_161103A	Analysis Date:	11/3/2016 12:59:56 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.00201	0.000200	0.00200	0	101	90	110			

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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161108B

The QC data in batch 77818 applies to the following samples: 1610240-01A, 1610240-02A, 1610240-03A

Sample ID MB-77818	Batch ID: 77818	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_161108B	Analysis Date: 11/8/2016 2:59:00 PM	Prep Date: 11/8/2016

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	0.358	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 LCS-77818	Batch ID: 77818	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_161108B	Analysis Date: 11/8/2016 3:01:00 PM	Prep Date: 11/8/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.193	0.00250	0.200	0	96.7	80	120			
Arsenic	0.200	0.00500	0.200	0	99.8	80	120			
Barium	0.198	0.0100	0.200	0	99.0	80	120			
Beryllium	0.200	0.00100	0.200	0	99.8	80	120			
Cadmium	0.194	0.00100	0.200	0	97.1	80	120			
Calcium	5.29	0.300	5.00	0	106	80	120			
Chromium	0.200	0.00500	0.200	0	100	80	120			
Cobalt	0.198	0.00500	0.200	0	98.8	80	120			
Lead	0.190	0.00100	0.200	0	94.9	80	120			
Lithium	0.192	0.0100	0.200	0	96.2	80	120			
Molybdenum	0.191	0.00500	0.200	0	95.7	80	120			
Selenium	0.198	0.00500	0.200	0	98.9	80	120			
Thallium	0.192	0.00150	0.200	0	95.8	80	120			

Sample ID LCSD-77818	Batch ID: 77818	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS4_161108B	Analysis Date: 11/8/2016 3:03:00 PM	Prep Date: 11/8/2016

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.194	0.00250	0.200	0	96.9	80	120	0.169	15	
Arsenic	0.199	0.00500	0.200	0	99.5	80	120	0.339	15	
Barium	0.198	0.0100	0.200	0	99.0	80	120	0.071	15	
Beryllium	0.197	0.00100	0.200	0	98.6	80	120	1.21	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161108B

Sample ID	LCSD-77818	Batch ID:	77818	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 3:03:00 PM	Prep Date:	11/8/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Cadmium	0.196	0.00100	0.200	0	97.8	80	120	0.738	15
Calcium	5.49	0.300	5.00	0	110	80	120	3.68	15
Chromium	0.200	0.00500	0.200	0	99.8	80	120	0.146	15
Cobalt	0.198	0.00500	0.200	0	98.8	80	120	0.028	15
Lead	0.190	0.00100	0.200	0	95.1	80	120	0.218	15
Lithium	0.196	0.0100	0.200	0	97.9	80	120	1.78	15
Molybdenum	0.193	0.00500	0.200	0	96.5	80	120	0.861	15
Selenium	0.199	0.00500	0.200	0	99.7	80	120	0.831	15
Thallium	0.190	0.00150	0.200	0	95.2	80	120	0.699	15

Sample ID	1610240-01A SD	Batch ID:	77818	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 3:07:00 PM	Prep Date:	11/8/2016			
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	0.0286	0.0500	0	0.0290				1.18	10
Beryllium	<0.00150	0.00500	0	0				0	10
Cadmium	<0.00150	0.00500	0	0				0	10
Calcium	6.76	1.50	0	6.55				3.04	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	<0.0250	0.0500	0	0.0156				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	1610240-01A PDS			Batch ID:	77818		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_161108B		Analysis Date:	11/8/2016 3:27:00 PM		Prep Date:	11/8/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.182	0.00250	0.200	0	90.9	80	120		
Arsenic	0.199	0.00500	0.200	0	99.3	80	120		
Barium	0.227	0.0100	0.200	0.0290	99.0	80	120		
Beryllium	0.196	0.00100	0.200	0	98.0	80	120		
Cadmium	0.190	0.00100	0.200	0	95.1	80	120		
Calcium	10.8	0.300	5.00	6.55	84.3	80	120		
Chromium	0.202	0.00500	0.200	0	101	80	120		
Cobalt	0.196	0.00500	0.200	0	97.8	80	120		
Lead	0.193	0.00100	0.200	0	96.4	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161108B

Sample ID	1610240-01A PDS	Batch ID:	77818	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 3:27:00 PM	Prep Date:	11/8/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lithium	0.198	0.0100	0.200	0.0156	91.3	80	120			
Molybdenum	0.188	0.00500	0.200	0	93.9	80	120			
Selenium	0.194	0.00500	0.200	0	96.9	80	120			
Thallium	0.190	0.00150	0.200	0	95.0	80	120			

Sample ID	1610240-01A MS	Batch ID:	77818	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 3:29:00 PM	Prep Date:	11/8/2016			
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			
Arsenic	0.197	0.00500	0.200	0	98.3	80	120			
Barium	0.225	0.0100	0.200	0.0290	97.9	80	120			
Beryllium	0.194	0.00100	0.200	0	96.8	80	120			
Cadmium	0.192	0.00100	0.200	0	96.1	80	120			
Calcium	11.7	0.300	5.00	6.55	104	80	120			
Chromium	0.193	0.00500	0.200	0	96.5	80	120			
Cobalt	0.192	0.00500	0.200	0	95.9	80	120			
Lead	0.189	0.00100	0.200	0	94.6	80	120			
Lithium	0.202	0.0100	0.200	0.0156	93.0	80	120			
Molybdenum	0.194	0.00500	0.200	0	97.1	80	120			
Selenium	0.192	0.00500	0.200	0	96.1	80	120			
Thallium	0.189	0.00150	0.200	0	94.3	80	120			

Sample ID	1610240-01A MSD	Batch ID:	77818	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 3:31:00 PM	Prep Date:	11/8/2016			
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	0.745	15	
Arsenic	0.199	0.00500	0.200	0	99.5	80	120	1.21	15	
Barium	0.227	0.0100	0.200	0.0290	99.1	80	120	1.10	15	
Beryllium	0.199	0.00100	0.200	0	99.3	80	120	2.50	15	
Cadmium	0.193	0.00100	0.200	0	96.3	80	120	0.196	15	
Calcium	11.4	0.300	5.00	6.55	96.0	80	120	3.40	15	
Chromium	0.198	0.00500	0.200	0	98.9	80	120	2.51	15	
Cobalt	0.193	0.00500	0.200	0	96.4	80	120	0.545	15	
Lead	0.190	0.00100	0.200	0	95.2	80	120	0.578	15	
Lithium	0.201	0.0100	0.200	0.0156	92.8	80	120	0.230	15	
Molybdenum	0.195	0.00500	0.200	0	97.6	80	120	0.504	15	
Selenium	0.194	0.00500	0.200	0	97.2	80	120	1.09	15	
Thallium	0.190	0.00150	0.200	0	95.2	80	120	0.977	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161108B

Sample ID	ICV-161108	Batch ID:	R88896	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 12:31:00 PM	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	0.105	0.0100	0.100	0	105	90	110			
Beryllium	0.105	0.00100	0.100	0	105	90	110			
Cadmium	0.104	0.00100	0.100	0	104	90	110			
Calcium	2.40	0.300	2.50	0	96.0	90	110			
Chromium	0.108	0.00500	0.100	0	108	90	110			
Cobalt	0.106	0.00500	0.100	0	106	90	110			
Lead	0.101	0.00100	0.100	0	101	90	110			
Lithium	0.0999	0.0100	0.100	0	99.9	90	110			
Molybdenum	0.101	0.00500	0.100	0	101	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	LCVL-161108	Batch ID:	R88896	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 12:33:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00224	0.00250	0.00200	0	112	70	130			
Arsenic	0.00528	0.00500	0.00500	0	106	70	130			
Barium	0.00524	0.0100	0.00500	0	105	70	130			
Beryllium	0.00111	0.00100	0.00100	0	111	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.0970	0.300	0.100	0	97.0	70	130			
Chromium	0.00532	0.00500	0.00500	0	106	70	130			
Cobalt	0.00534	0.00500	0.00500	0	107	70	130			
Lead	0.00112	0.00100	0.00100	0	112	70	130			
Lithium	0.0103	0.0100	0.0100	0	103	70	130			
Molybdenum	0.00529	0.00500	0.00500	0	106	70	130			
Selenium	0.00589	0.00500	0.00500	0	118	70	130			
Thallium	0.00108	0.00150	0.00100	0	108	70	130			

Sample ID	CCV2-161108	Batch ID:	R88896	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 2:06:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.198	0.00250	0.200	0	99.2	90	110			
Arsenic	0.208	0.00500	0.200	0	104	90	110			
Barium	0.205	0.0100	0.200	0	102	90	110			
Beryllium	0.207	0.00100	0.200	0	104	90	110			
Cadmium	0.199	0.00100	0.200	0	99.3	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161108B

Sample ID	CCV2-161108			Batch ID:	R88896		TestNo:	SW6020A		Units:	mg/L		
SampType:	CCV			Run ID:	ICP-MS4_161108B		Analysis Date:	11/8/2016 2:06:00 PM		Prep Date:			
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.84	0.300	5.00	0	96.7	90	110			
Chromium	0.208	0.00500	0.200	0	104	90	110			
Cobalt	0.207	0.00500	0.200	0	104	90	110			
Lead	0.198	0.00100	0.200	0	99.1	90	110			
Lithium	0.205	0.0100	0.200	0	103	90	110			
Molybdenum	0.196	0.00500	0.200	0	98.1	90	110			
Selenium	0.210	0.00500	0.200	0	105	90	110			
Thallium	0.197	0.00150	0.200	0	98.6	90	110			

Sample ID	LCVL2-161108	Batch ID:	R88896	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 2:28:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00209	0.00250	0.00200	0	105	70	130			
Arsenic	0.00527	0.00500	0.00500	0	105	70	130			
Barium	0.00535	0.0100	0.00500	0	107	70	130			
Beryllium	0.00106	0.00100	0.00100	0	106	70	130			
Cadmium	0.00105	0.00100	0.00100	0	105	70	130			
Calcium	0.104	0.300	0.100	0	104	70	130			
Chromium	0.00535	0.00500	0.00500	0	107	70	130			
Cobalt	0.00527	0.00500	0.00500	0	105	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			
Molybdenum	0.00510	0.00500	0.00500	0	102	70	130			
Selenium	0.00578	0.00500	0.00500	0	116	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

Sample ID	CCV3-161108			Batch ID:	R88896		TestNo:	SW6020A		Units:	mg/L		
SampType:	CCV			Run ID:	ICP-MS4_161108B		Analysis Date:	11/8/2016 4:00:00 PM		Prep Date:			
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.198	0.00250	0.200	0	99.1	90	110			
Arsenic	0.210	0.00500	0.200	0	105	90	110			
Barium	0.204	0.0100	0.200	0	102	90	110			
Beryllium	0.209	0.00100	0.200	0	104	90	110			
Cadmium	0.202	0.00100	0.200	0	101	90	110			
Calcium	4.87	0.300	5.00	0	97.5	90	110			
Chromium	0.206	0.00500	0.200	0	103	90	110			
Cobalt	0.207	0.00500	0.200	0	103	90	110			
Lead	0.198	0.00100	0.200	0	98.9	90	110			
Lithium	0.198	0.0100	0.200	0	99.2	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161108B

Sample ID	CCV3-161108	Batch ID:	R88896	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 4:00:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum		0.197	0.00500	0.200	0	98.6	90	110			
Selenium		0.210	0.00500	0.200	0	105	90	110			
Thallium		0.200	0.00150	0.200	0	100	90	110			

Sample ID	LCVL3-161108	Batch ID:	R88896	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161108B	Analysis Date:	11/8/2016 4:32:00 PM	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	0.00545	0.00500	0.00500	0	109	70	130			
Barium	0.00520	0.0100	0.00500	0	104	70	130			
Beryllium	0.00109	0.00100	0.00100	0	109	70	130			
Cadmium	0.00103	0.00100	0.00100	0	103	70	130			
Calcium	0.104	0.300	0.100	0	104	70	130			
Chromium	0.00540	0.00500	0.00500	0	108	70	130			
Cobalt	0.00530	0.00500	0.00500	0	106	70	130			
Lead	0.000965	0.00100	0.00100	0	96.5	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	70	130			
Molybdenum	0.00503	0.00500	0.00500	0	101	70	130			
Selenium	0.00572	0.00500	0.00500	0	114	70	130			
Thallium	0.00100	0.00150	0.00100	0	100	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161109A

The QC data in batch 77828 applies to the following samples: 1610240-01A, 1610240-02A, 1610240-03A

Sample ID	MB-77828		Batch ID:	77828		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_161109A		Analysis Date:	11/9/2016 2:53:00 PM		Prep Date:	11/9/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron <0.0100 0.0300

Sample ID	LCS-77828			Batch ID:	77828		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_161109A		Analysis Date:	11/9/2016 2:55:00 PM		Prep Date:	11/9/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron 0.196 0.0300 0.200 0 97.8 80 120

Sample ID	LCSD-77828	Batch ID:	77828	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS4_161109A	Analysis Date:	11/9/2016 2:57:00 PM	Prep Date:	11/9/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.208 0.0300 0.200 0 104 80 120 6.25 15

Sample ID	1610262-04A MS		Batch ID:	77828		TestNo:	SW6020A		Units:	mg/L	
SampType:	MS		Run ID:	ICP-MS4_161109A		Analysis Date:	11/9/2016 3:17:00 PM		Prep Date:	11/9/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.597 0.0300 0.200 0.403 96.6 80 120

Sample ID	1610262-04A MSD	Batch ID:	77828	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_161109A	Analysis Date:	11/9/2016 3:19:00 PM	Prep Date:	11/9/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.613 0.0300 0.200 0.403 105 80 120 2.77 15

Sample ID	1610262-04A SD			Batch ID:	77828		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD			Run ID:	ICP-MS4_161109A		Analysis Date:	11/9/2016 3:27:00 PM		Prep Date:	11/9/2016	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.727 0.750 0 0.477 41.6 10 R

Sample ID	1610262-04A PDS			Batch ID:	77828		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS4_161109A		Analysis Date:	11/9/2016 3:29:00 PM		Prep Date:	11/9/2016	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 1.52 0.150 1.00 0.477 104 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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161109A

Sample ID	ICV-161109	Batch ID:	R88915	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_161109A	Analysis Date:	11/9/2016 12:41:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.109	0.0300	0.100	0	109	90	110			

Sample ID	LCVL-161109	Batch ID:	R88915	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161109A	Analysis Date:	11/9/2016 12:45:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0237	0.0300	0.0200	0	119	70	130			

Sample ID	CCV1-161109	Batch ID:	R88915	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161109A	Analysis Date:	11/9/2016 1:26:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.215	0.0300	0.200	0	107	90	110			

Sample ID	LCVL1-161109	Batch ID:	R88915	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161109A	Analysis Date:	11/9/2016 2:16:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0256	0.0300	0.0200	0	128	70	130			

Sample ID	CCV2-161109		Batch ID:	R88915		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS4_161109A		Analysis Date:	11/9/2016 3:55:00 PM		Prep Date:		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Boron	0.217	0.0300	0.200	0	108	90	110				

Sample ID	LCVL2-161109	Batch ID:	R88915	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161109A	Analysis Date:	11/9/2016 4:26:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0260	0.0300	0.0200	0	130	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161101A

The QC data in batch 77744 applies to the following samples: 1610240-01D, 1610240-02D, 1610240-03D

Sample ID	MB-77744	Batch ID:	77744	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC2_161101A	Analysis Date:	11/1/2016 9:41:33 AM	Prep Date:	11/1/2016			
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	LCS-77744		Batch ID:	77744		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC2_161101A		Analysis Date:	11/1/2016 9:56:09 AM		Prep Date:	11/1/2016	
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	3.84	0.400	4.000	0	95.9	90	110			
Sulfate	30.4	3.00	30.00	0	101	90	110			

Sample ID	LCSD-77744	Batch ID:	77744	TestNo:	E300	Units:	mg/L				
SampType:	LCSD	Run ID:	IC2_161101A	Analysis Date:	11/1/2016 10:10:45 AM	Prep Date:	11/1/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.0	1.00	10.00	0	100	90	110	0.214	20	
Fluoride	3.90	0.400	4.000	0	97.4	90	110	1.53	20	
Sulfate	30.6	3.00	30.00	0	102	90	110	0.621	20	

Sample ID	1610256-02BMS	Batch ID:	77744	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_161101A	Analysis Date:	11/1/2016 1:04:59 PM	Prep Date:	11/1/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2760	100	2000	705.3	103	90	110			
Fluoride	1960	40.0	2000	0	97.9	90	110			
Sulfate	3820	300	2000	1813	100	90	110			

Sample ID	1610256-02BMSD		Batch ID:	77744		TestNo:	E300		Units:	mg/L		
SampType:	MSD		Run ID:	IC2_161101A		Analysis Date:	11/1/2016 1:19:35 PM		Prep Date:	11/1/2016		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2770	100	2000	705.3	103	90	110	0.628	20	
Fluoride	1990	40.0	2000	0	99.6	90	110	1.70	20	
Sulfate	3830	300	2000	1813	101	90	110	0.106	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161101A

Sample ID	ICV-161101	Batch ID:	R88808		TestNo:	E300		Units:	mg/L		
SampType:	ICV	Run ID:	IC2_161101A		Analysis Date:	11/1/2016 9:01:43 AM		Prep Date:			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		25.6	1.00	25.00	0	102	90	110			
Fluoride		9.72	0.400	10.00	0	97.2	90	110			
Sulfate		78.0	3.00	75.00	0	104	90	110			

Sample ID	CCV1-161101	Batch ID:	R88808	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_161101A	Analysis Date:	11/1/2016 1:53:14 PM	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	3.95	0.400	4.000	0	98.7	90	110			
Sulfate	30.3	3.00	30.00	0	101	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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_161028A

The QC data in batch 77718 applies to the following samples: 1610240-01D, 1610240-02D, 1610240-03D

Sample ID	1610236-01D-DUP	Batch ID:	77718	TestNo:	M4500-H+ B	Units:	pH Units@19.9°C
SampType:	DUP	Run ID:	TITRATOR_161028A	Analysis Date:	10/28/2016 11:22:00 A	Prep Date:	10/28/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		7.20	0	0	7.030		2.39 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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_161028A

Sample ID	ICV-161028			Batch ID:	R88755		TestNo:	M4500-H+ B		Units:	pH Units@22.2°C	
SampType:	ICV			Run ID:	TITRATOR_161028A		Analysis Date:	10/28/2016 10:42:00 A		Prep Date:	10/28/2016	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	9.93	0	10.00	0	99.3	99	101			

Sample ID	CCV1-161028	Batch ID:	R88755	TestNo:	M4500-H+ B	Units:	pH Units@22.1°C				
SampType:	CCV	Run ID:	TITRATOR_161028A	Analysis Date:	10/28/2016 11:26:00 A	Prep Date:	10/28/2016				
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			

Sample ID	CCV2-161028			Batch ID:	R88755		TestNo:	M4500-H+ B		Units:	pH Units@22.2°C	
SampType:	CCV			Run ID:	TITRATOR_161028A		Analysis Date:	10/28/2016 2:19:00 PM		Prep Date:	10/28/2016	
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			

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: 1610240
Project: MLSES A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_161031A

The QC data in batch 77739 applies to the following samples: 1610240-01D, 1610240-02D, 1610240-03D

Sample ID	MB-77739	Batch ID:	77739	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_161031A	Analysis Date:	11/1/2016 8:43:00 AM	Prep Date:	10/31/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-77739	Batch ID:	77739	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_161031A	Analysis Date:	11/1/2016 8:43:00 AM	Prep Date:	10/31/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 747 10.0 745.6 0 100 90 113

Sample ID	1610230-01D-DUP	Batch ID:	77739	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_161031A	Analysis Date:	11/1/2016 8:43:00 AM	Prep Date:	10/31/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 1490 50.0 0 1495 0.335 5

Sample ID	1610230-07D-DUP	Batch ID:	77739	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_161031A	Analysis Date:	11/1/2016 8:43:00 AM	Prep Date:	10/31/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 4310 50.0 0 4410 2.29 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: 20161060

This report contains the analytical results for the 3 sample(s) received under chain of custody by ESC Lab Sciences on 11/1/2016 8:45:34 AM. These samples are associated with your 1610240 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

L869802



Client : DHL Analytical, Inc.
 Client Project : 1610240
 Lab Number : 20161060
 Date Reported : 11/23/16
 Date Received : 11/01/16
 Page Number : 2 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20161060-01
Client ID : BMW-18
Date Sampled : 10/26/2016 12:35:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.316 +/- 0.979	0.666	pCi/l			
Radium-226	SM 7500 Ra B M*	0.091 +/- 0.094	0.132	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	0.225 +/- 0.885	0.534	pCi/l	11/15/16	11/21/16	JR

Lab ID : 20161060-02
Client ID : BMW-26
Date Sampled : 10/26/2016 2:40:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.680 +/- 1.23	0.868	pCi/l			
Radium-226	SM 7500 Ra B M*	0.175 +/- 0.129	0.173	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	0.505 +/- 1.10	0.695	pCi/l	11/15/16	11/21/16	JR

Lab ID : 20161060-03
Client ID : BMW-27
Date Sampled : 10/26/2016 3:40:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		2.10 +/- 0.972	0.611	pCi/l			
Radium-226	SM 7500 Ra B M*	0.156 +/- 0.096	0.092	pCi/l	11/10/16	11/14/16	AK
Radium-228	EPA 904*/9320*	1.94 +/- 0.876	0.519	pCi/l	11/15/16	11/21/16	JR



Client : DHL Analytical, Inc.
Client Project : 1610240
Lab Number : 20161060
Date Reported : 11/23/16
Date Received : 11/01/16
Page Number : 3 of 3

QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	-0.021	114.0			NC	0.292	115.0	107.0	7.3	R1159
Radium-228	-0.161	92.3			29.9	0.334	96.3	88.6	7.4	R3882

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: 1610240

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

Acct #: DHLRRTX

28-Oct-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
BMW-18	Aqueous	-01B	10/26/16 12:35 PM	500HDPEHNO3	1					
BMW-18	Aqueous	-01C	10/26/16 12:35 PM	500HDPEHNO3		1				
BMW-26	Aqueous	-02B	10/26/16 02:40 PM	500HDPEHNO3	1					
BMW-26	Aqueous	-02C	10/26/16 02:40 PM	500HDPEHNO3		1				
BMW-27	Aqueous	-03B	10/26/16 03:40 PM	500HDPEHNO3	1					
BMW-27	Aqueous	-03C	10/26/16 03:40 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

20161060
L 869802

Relinquished by: <u>Barker</u>	Date/Time: <u>10/28/16 1730</u>	Received by: <u>Donestar</u>	Date/Time: <u>10/28/16 1730</u>
Relinquished by: _____	Date/Time: _____	Received by: <u>[Signature]</u>	Date/Time: <u>10/11/16 0830</u>
			<u>11/1/16</u> <u>0845</u>

SAMPLE LOGIN

Date Received: 11/1/2016 8:45:34

Lab Number: 20161060

Due: 11/29/2016

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20161060-01 B	BMW-18	NPW	10/26/16	Plastic	500 ml	HNO ₃ , pH < 2	☒	Yes	Yes
20161060-01 A	BMW-18	NPW	10/26/16	Plastic	500 ml	HNO ₃ , pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161060-02 B	BMW-26	NPW	10/26/16	Plastic	500 ml	HNO ₃ , pH < 2	☒	Yes	Yes
20161060-02 A	BMW-26	NPW	10/26/16	Plastic	500 ml	HNO ₃ , pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20161060-03 B	BMW-27	NPW	10/26/16	Plastic	500 ml	HNO ₃ , pH < 2	☒	Yes	Yes
20161060-03 A	BMW-27	NPW	10/26/16	Plastic	500 ml	HNO ₃ , pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						

CONTAINER INSPECTION

Coolers 1 Custody Seals Broken ☒ Temperature: Amb C Ice Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken ☒ Chain of Custody Record ☒ Labels in Tact ☒ Radiation Survey Complete ☒ N/A

Anomalles

Inspected By: [Signature] DATE 11/1/16
 QA or Designee Review: Ryan A. Thomas DATE 11/01/16
 Sample Custodian Review: [Signature] DATE 11/1/16

Project Notes:



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
RE: MLSES - A1 Area Landfill

Order No.: 1612207

Dear Will Vienne:

DHL Analytical, Inc. received 7 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".

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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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: 12-16-16 PAGE 1 OF 1
PO #: 5164-B **DHL WORK ORDER #:** 11612207
PROJECT LOCATION OR NAME: MLSES - A1 AREA LANDFILL
CLIENT PROJECT #: 5164-B **COLLECTOR:** J. BRAYTON

[illegible]

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
<i>[Signature]</i>	12-16-16 1730	<i>Fedex</i>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
<i>[Signature]</i>	12/17/16 11:00	<i>[Signature]</i>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

TURN AROUND TIME
 RUSH ☐ CALL FIRST
 1 DAY ☐ CALL FIRST
 2 DAY ☐
 NORMAL ☒
 OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 36/40 THERM #: 3012478
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

ORIGIN ID:FWHA (512) 671-3434
JOHN

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664,
UNITED STATES US

SHIP DATE: 16DEC16
ACTWGT: 57.20 LB
CAD: 6995323/SSF01722
DIMS: 24x14x13 IN

BILL THIRD PARTY

TO DHL

2300 DOUBLE CREEK DR

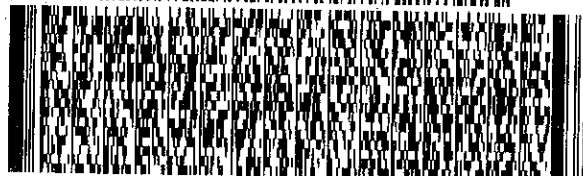
ROUND ROCK TX 78664

(512) 388-8222

REF:

INU:

DEPT:



FedEx
Express



5 of 5

MPS# 7850 3628 4340
0263

Mstr# 7850 3628 4306

0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO BSMA

78664
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ORIGIN ID:FWHA (512) 671-3434
JOHN

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 16DEC16
ACTWGT: 53.30 LB
CAD: 6995323/SSF01722
DIMS: 23x14x13 IN

BILL THIRD PARTY

TO DHL

2300 DOUBLE CREEK DR

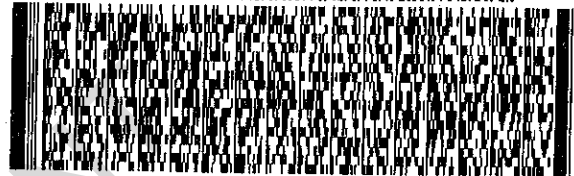
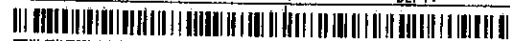
ROUND ROCK TX 78664

(512) 388-8222

REF:

INU:

DEPT:



FedEx
Express



3 of 5

MPS# 7850 3628 4328
0263

Mstr# 7850 3628 4306

0201

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO BSMA

78664
TX-US AUS



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Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 12/17/2016

Work Order Number 1612207

Received by JT

Checklist completed by: [Signature] 12/19/2016 Reviewed by: [Signature] 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 ☐ 4.0 °C | 38/3.0/2.4

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 CA

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: MLSES - A1 Area Landfill
Lab Order: 1612207

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 7 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.

For Metals analysis performed on 12/29/16 LCVL7-161229 was above control limits for Calcium. This is flagged accordingly. The associated CCV was within control limits for this analyte. 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.

ANIONS ANALYSIS

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landill
Lab Order: 1612207

CASE NARRATIVE

For Anions analysis performed on 12/29/16 the matrix spikes and/or matrix spike duplicate recoveries (162207-01 MS/MSD & 162274-04 MSD) were slightly above control limits for Sulfate. These are flagged accordingly in the QC summary report. The sample selected for the matrix spike and matrix spike duplicate (1612274-04 MSD) was not from this work order. The sample selected for the matrix spike and matrix spike duplicate (1612207-01 MS/MSD) was from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

LUMINANT

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill
Lab Order: 1612207**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1612207-01	BMW-19		12/14/16 07:20 AM	12/19/2016
1612207-02	BMW-18		12/14/16 08:20 AM	12/19/2016
1612207-03	BMW-28		12/14/16 09:15 AM	12/19/2016
1612207-04	BMW-27		12/14/16 10:20 AM	12/19/2016
1612207-05	BMW-26		12/14/16 11:25 AM	12/19/2016
1612207-06	EB-1		12/14/16 11:45 AM	12/19/2016
1612207-07	BMW-11AR		12/14/16 10:15 AM	12/19/2016

Lab Order: 1612207
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1612207-01A	BMW-19	12/14/16 07:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-19	12/14/16 07:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-19	12/14/16 07:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-19	12/14/16 07:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612207-01D	BMW-19	12/14/16 07:20 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-19	12/14/16 07:20 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-19	12/14/16 07:20 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 01:44 PM	78421
	BMW-19	12/14/16 07:20 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612207-02A	BMW-18	12/14/16 08:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-18	12/14/16 08:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-18	12/14/16 08:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612207-02D	BMW-18	12/14/16 08:20 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-18	12/14/16 08:20 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 01:44 PM	78421
	BMW-18	12/14/16 08:20 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612207-03A	BMW-28	12/14/16 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-28	12/14/16 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-28	12/14/16 09:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-28	12/14/16 09:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612207-03D	BMW-28	12/14/16 09:15 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-28	12/14/16 09:15 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-28	12/14/16 09:15 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 01:44 PM	78421
	BMW-28	12/14/16 09:15 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612207-04A	BMW-27	12/14/16 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-27	12/14/16 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-27	12/14/16 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-27	12/14/16 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-27	12/14/16 10:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612207-04D	BMW-27	12/14/16 10:20 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511

Lab Order: 1612207
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1612207-04D	BMW-27	12/14/16 10:20 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-27	12/14/16 10:20 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 01:44 PM	78421
	BMW-27	12/14/16 10:20 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612207-05A	BMW-26	12/14/16 11:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-26	12/14/16 11:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-26	12/14/16 11:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-26	12/14/16 11:25 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612207-05D	BMW-26	12/14/16 11:25 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-26	12/14/16 11:25 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-26	12/14/16 11:25 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 01:44 PM	78421
	BMW-26	12/14/16 11:25 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612207-06A	EB-1	12/14/16 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	EB-1	12/14/16 11:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	EB-1	12/14/16 11:45 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612207-06D	EB-1	12/14/16 11:45 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	EB-1	12/14/16 11:45 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 01:44 PM	78421
	EB-1	12/14/16 11:45 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407
1612207-07A	BMW-11AR	12/14/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-11AR	12/14/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-11AR	12/14/16 10:15 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-11AR	12/14/16 10:15 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612207-07D	BMW-11AR	12/14/16 10:15 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-11AR	12/14/16 10:15 AM	Aqueous	E300	Anion Preparation	12/29/16 08:35 AM	78511
	BMW-11AR	12/14/16 10:15 AM	Aqueous	M4500-H+ B	pH Preparation	12/21/16 01:44 PM	78421
	BMW-11AR	12/14/16 10:15 AM	Aqueous	M2540C	TDS Preparation	12/21/16 08:41 AM	78407

Lab Order: 1612207
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1612207-01A	BMW-19	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:41 PM	CETAC2_HG_161222 B
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:13 PM	ICP-MS4_161229D
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	100	01/07/17 02:50 PM	ICP-MS4_170107D
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 02:52 PM	ICP-MS4_170107D
1612207-01D	BMW-19	Aqueous	E300	Anions by IC method - Water	78511	1	12/29/16 10:03 AM	IC2_161229A
	BMW-19	Aqueous	E300	Anions by IC method - Water	78511	100	12/29/16 01:22 PM	IC2_161229A
	BMW-19	Aqueous	M4500-H+ B	pH	78421	1	12/21/16 02:06 PM	TITRATOR_161221A
	BMW-19	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612207-02A	BMW-18	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:43 PM	CETAC2_HG_161222 B
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:15 PM	ICP-MS4_161229D
	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 03:48 PM	ICP-MS4_170107D
1612207-02D	BMW-18	Aqueous	E300	Anions by IC method - Water	78511	1	12/29/16 10:18 AM	IC2_161229A
	BMW-18	Aqueous	M4500-H+ B	pH	78421	1	12/21/16 02:10 PM	TITRATOR_161221A
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612207-03A	BMW-28	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:45 PM	CETAC2_HG_161222 B
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:17 PM	ICP-MS4_161229D
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	100	01/07/17 03:50 PM	ICP-MS4_170107D
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	01/07/17 03:52 PM	ICP-MS4_170107D
1612207-03D	BMW-28	Aqueous	E300	Anions by IC method - Water	78511	1	12/29/16 10:33 AM	IC2_161229A
	BMW-28	Aqueous	E300	Anions by IC method - Water	78511	10	12/29/16 01:37 PM	IC2_161229A
	BMW-28	Aqueous	M4500-H+ B	pH	78421	1	12/21/16 02:11 PM	TITRATOR_161221A
	BMW-28	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612207-04A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:47 PM	CETAC2_HG_161222 B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	2	01/08/17 01:28 PM	ICP-MS4_170108C
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:33 PM	ICP-MS4_161229D
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	100	01/07/17 03:54 PM	ICP-MS4_170107D

Lab Order: 1612207
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1612207-04A	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 03:56 PM	ICP-MS4_170107D
1612207-04D	BMW-27	Aqueous	E300	Anions by IC method - Water	78511	1	12/29/16 10:47 AM	IC2_161229A
	BMW-27	Aqueous	E300	Anions by IC method - Water	78511	10	12/29/16 01:51 PM	IC2_161229A
	BMW-27	Aqueous	M4500-H+ B	pH	78421	1	12/21/16 02:13 PM	TITRATOR_161221A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612207-05A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:50 PM	CETAC2_HG_161222B
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:35 PM	ICP-MS4_161229D
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	100	01/07/17 03:58 PM	ICP-MS4_170107D
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 04:00 PM	ICP-MS4_170107D
1612207-05D	BMW-26	Aqueous	E300	Anions by IC method - Water	78511	1	12/29/16 11:02 AM	IC2_161229A
	BMW-26	Aqueous	E300	Anions by IC method - Water	78511	10	12/29/16 02:06 PM	IC2_161229A
	BMW-26	Aqueous	M4500-H+ B	pH	78421	1	12/21/16 02:15 PM	TITRATOR_161221A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612207-06A	EB-1	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:52 PM	CETAC2_HG_161222B
	EB-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 04:02 PM	ICP-MS4_170107D
	EB-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:37 PM	ICP-MS4_161229D
1612207-06D	EB-1	Aqueous	E300	Anions by IC method - Water	78511	1	12/29/16 11:16 AM	IC2_161229A
	EB-1	Aqueous	M4500-H+ B	pH	78421	1	12/21/16 02:18 PM	TITRATOR_161221A
	EB-1	Aqueous	M2540C	Total Dissolved Solids	78407	1	12/22/16 08:41 AM	WC_161221B
1612207-07A	BMW-11AR	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:54 PM	CETAC2_HG_161222B
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 06:39 PM	ICP-MS4_161229D
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	100	01/07/17 04:04 PM	ICP-MS4_170107D
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	01/07/17 04:06 PM	ICP-MS4_170107D
1612207-07D	BMW-11AR	Aqueous	E300	Anions by IC method - Water	78511	1	12/29/16 11:31 AM	IC2_161229A
	BMW-11AR	Aqueous	E300	Anions by IC method - Water	78511	10	12/29/16 02:20 PM	IC2_161229A
	BMW-11AR	Aqueous	M4500-H+ B	pH	78421	1	12/21/16 02:21 PM	TITRATOR_161221A

Lab Order: 1612207
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1612207-07D	BMW-11AR	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: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612207

Client Sample ID: BMW-19
Lab ID: 1612207-01
Collection Date: 12/14/16 07:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:41 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:13 PM
Arsenic	0.00369	0.00200	0.00500	J	mg/L	1	12/29/16 06:13 PM
Barium	0.0171	0.00300	0.0100		mg/L	1	12/29/16 06:13 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:13 PM
Boron	0.427	0.0100	0.0300		mg/L	1	01/07/17 02:52 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:13 PM
Calcium	481	10.0	30.0		mg/L	100	01/07/17 02:50 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:13 PM
Cobalt	0.0125	0.00300	0.00500		mg/L	1	12/29/16 06:13 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:13 PM
Lithium	0.0584	0.00500	0.0100		mg/L	1	12/29/16 06:13 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:13 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:13 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:13 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	7.20	0.300	1.00		mg/L	1	12/29/16 10:03 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/29/16 10:03 AM
Sulfate	2220	100	300		mg/L	100	12/29/16 01:22 PM
PH							
M4500-H+ B				Analyst: BJT			
pH	6.51	0	0		pH Units@20.8°C	1	12/21/16 02:06 PM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	3660	50.0	50.0		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: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612207

Client Sample ID: BMW-18
Lab ID: 1612207-02
Collection Date: 12/14/16 08:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS							
SW7470A				Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:43 PM
TRACE METALS: ICP-MS - WATER							
SW6020A				Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:15 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:15 PM
Barium	0.0384	0.00300	0.0100		mg/L	1	12/29/16 06:15 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:15 PM
Boron	0.411	0.0100	0.0300		mg/L	1	01/07/17 03:48 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:15 PM
Calcium	9.26	0.100	0.300		mg/L	1	12/29/16 06:15 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:15 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:15 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:15 PM
Lithium	0.0158	0.00500	0.0100		mg/L	1	12/29/16 06:15 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:15 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:15 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:15 PM
ANIONS BY IC METHOD - WATER							
E300				Analyst: AV			
Chloride	17.6	0.300	1.00		mg/L	1	12/29/16 10:18 AM
Fluoride	0.134	0.100	0.400	J	mg/L	1	12/29/16 10:18 AM
Sulfate	94.1	1.00	3.00		mg/L	1	12/29/16 10:18 AM
PH							
M4500-H+ B				Analyst: BJT			
pH	8.38	0	0		pH Units@20.3°C	1	12/21/16 02:10 PM
TOTAL DISSOLVED SOLIDS							
M2540C				Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	493	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: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612207

Client Sample ID: BMW-28
Lab ID: 1612207-03
Collection Date: 12/14/16 09:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:45 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	0.00117	0.000800	0.00250	J	mg/L	1	12/29/16 06:17 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:17 PM
Barium	0.0509	0.00300	0.0100		mg/L	1	12/29/16 06:17 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:17 PM
Boron	1.22	0.100	0.300		mg/L	10	01/07/17 03:52 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:17 PM
Calcium	234	10.0	30.0		mg/L	100	01/07/17 03:50 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:17 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:17 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:17 PM
Lithium	0.110	0.00500	0.0100		mg/L	1	12/29/16 06:17 PM
Molybdenum	0.0103	0.00200	0.00500		mg/L	1	12/29/16 06:17 PM
Selenium	0.00445	0.00200	0.00500	J	mg/L	1	12/29/16 06:17 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:17 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	111	3.00	10.0		mg/L	10	12/29/16 01:37 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/29/16 10:33 AM
Sulfate	1280	10.0	30.0		mg/L	10	12/29/16 01:37 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.13	0	0		pH Units@20.3°C	1	12/21/16 02:11 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2360	50.0	50.0		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: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612207

Client Sample ID: BMW-27
Lab ID: 1612207-04
Collection Date: 12/14/16 10:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:47 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:33 PM
Arsenic	0.00510	0.00200	0.00500		mg/L	1	12/29/16 06:33 PM
Barium	0.0342	0.00300	0.0100		mg/L	1	12/29/16 06:33 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:33 PM
Boron	0.529	0.0200	0.0600		mg/L	2	01/08/17 01:28 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:33 PM
Calcium	211	10.0	30.0		mg/L	100	01/07/17 03:54 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:33 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:33 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:33 PM
Lithium	0.0932	0.00500	0.0100		mg/L	1	12/29/16 06:33 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:33 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:33 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:33 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	101	3.00	10.0		mg/L	10	12/29/16 01:51 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/29/16 10:47 AM
Sulfate	674	10.0	30.0		mg/L	10	12/29/16 01:51 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.12	0	0		pH Units@20.6°C	1	12/21/16 02:13 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1810	50.0	50.0		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: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612207

Client Sample ID: BMW-26
Lab ID: 1612207-05
Collection Date: 12/14/16 11:25 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:50 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:35 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:35 PM
Barium	0.0424	0.00300	0.0100		mg/L	1	12/29/16 06:35 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:35 PM
Boron	0.251	0.0100	0.0300		mg/L	1	01/07/17 04:00 PM
Cadmium	0.000823	0.000300	0.00100	J	mg/L	1	12/29/16 06:35 PM
Calcium	130	10.0	30.0		mg/L	100	01/07/17 03:58 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:35 PM
Cobalt	0.236	0.00300	0.00500		mg/L	1	12/29/16 06:35 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:35 PM
Lithium	0.0527	0.00500	0.0100		mg/L	1	12/29/16 06:35 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:35 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:35 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:35 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	152	3.00	10.0		mg/L	10	12/29/16 02:06 PM
Fluoride	0.344	0.100	0.400	J	mg/L	1	12/29/16 11:02 AM
Sulfate	1210	10.0	30.0		mg/L	10	12/29/16 02:06 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.09	0	0		pH Units@20.6°C	1	12/21/16 02:15 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2050	50.0	50.0		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: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612207

Client Sample ID: EB-1
Lab ID: 1612207-06
Collection Date: 12/14/16 11:45 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:52 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:37 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:37 PM
Barium	<0.00300	0.00300	0.0100		mg/L	1	12/29/16 06:37 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:37 PM
Boron	0.0222	0.0100	0.0300	J	mg/L	1	01/07/17 04:02 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:37 PM
Calcium	<0.100	0.100	0.300		mg/L	1	12/29/16 06:37 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:37 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:37 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:37 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	12/29/16 06:37 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:37 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:37 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:37 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	<0.300	0.300	1.00		mg/L	1	12/29/16 11:16 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/29/16 11:16 AM
Sulfate	<1.00	1.00	3.00		mg/L	1	12/29/16 11:16 AM
PH		M4500-H+ B		Analyst: BJT			
pH	6.91	0	0		pH Units@21°C	1	12/21/16 02:18 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	<10.0	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: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612207

Client Sample ID: BMW-11AR
Lab ID: 1612207-07
Collection Date: 12/14/16 10:15 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:54 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 06:39 PM
Arsenic	0.00610	0.00200	0.00500		mg/L	1	12/29/16 06:39 PM
Barium	0.0740	0.00300	0.0100		mg/L	1	12/29/16 06:39 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:39 PM
Boron	0.409	0.0100	0.0300		mg/L	1	01/07/17 04:06 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 06:39 PM
Calcium	201	10.0	30.0		mg/L	100	01/07/17 04:04 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:39 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 06:39 PM
Lead	0.00347	0.000300	0.00100		mg/L	1	12/29/16 06:39 PM
Lithium	0.0139	0.00500	0.0100		mg/L	1	12/29/16 06:39 PM
Molybdenum	0.00303	0.00200	0.00500	J	mg/L	1	12/29/16 06:39 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 06:39 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 06:39 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	19.8	0.300	1.00		mg/L	1	12/29/16 11:31 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/29/16 11:31 AM
Sulfate	665	10.0	30.0		mg/L	10	12/29/16 02:20 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.92	0	0		pH Units@21.2°C	1	12/21/16 02:21 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1970	50.0	50.0		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

Work Order: 1612207

Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161222B

The QC data in batch 78414 applies to the following samples: 1612207-01A, 1612207-02A, 1612207-03A, 1612207-04A, 1612207-05A, 1612207-06A, 1612207-07A

Sample ID	MB-78414	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:17:18 PM	Prep Date:	12/21/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-78414	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:19:33 PM	Prep Date:	12/21/2016			
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	LCSD-78414	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:21:50 PM	Prep Date:	12/21/2016			
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	1612145-01A MS	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:51:23 PM	Prep Date:	12/21/2016			
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	1612145-01A MSD	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:53:39 PM	Prep Date:	12/21/2016			
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	1612205-01A SD	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:04:44 PM	Prep Date:	12/21/2016			
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	1612205-01A PDS	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:06:59 PM	Prep Date:	12/21/2016			
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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161222B

Sample ID	ICV-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L			
SampType:	ICV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 10:43:02 A	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			

Sample ID	CCV3-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 12:41:08 P	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			

Sample ID	CCV-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:00:08 PM	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			

Sample ID	CCV4-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:29:41 PM	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			

Sample ID	CCV5-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:56:59 PM	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			

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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

The QC data in batch 78405 applies to the following samples: 1612207-01A, 1612207-02A, 1612207-03A, 1612207-04A, 1612207-05A, 1612207-06A, 1612207-07A

Sample ID MB-78405	Batch ID: 78405	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:11:00 PM	Prep Date: 12/21/2016

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 LCS-78405	Batch ID: 78405	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:13:00 PM	Prep Date: 12/21/2016

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 LCSD-78405	Batch ID: 78405	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:15:00 PM	Prep Date: 12/21/2016

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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	LCSD-78405	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:15:00 PM	Prep Date:	12/21/2016			
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	1612145-04A SD	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:21:00 PM	Prep Date:	12/21/2016			
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	1612145-04A PDS	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:41:00 PM	Prep Date:	12/21/2016			
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	1612145-04A MS	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:43:00 PM	Prep Date:	12/21/2016			
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	1612145-04A MSD	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:45:00 PM	Prep Date:	12/21/2016			
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
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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	1612145-04A SD	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L				
SampType:	SD	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:59:00 PM	Prep Date:	12/21/2016				
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	1612145-04A PDS	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:19:00 PM	Prep Date:	12/21/2016				
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	1612145-04A MS	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:21:00 PM	Prep Date:	12/21/2016			
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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	1612145-04A MS	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:21:00 PM	Prep Date:	12/21/2016			
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	1612145-04A MSD		Batch ID:	78405		TestNo:	SW6020A		Units:	mg/L	
SampType:	MSD		Run ID:	ICP-MS4_161229D		Analysis Date:	12/29/2016 6:23:00 PM		Prep Date:	12/21/2016	
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
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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	ICV-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 12:28:00 P	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	LCVL-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 12:34:00 P	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	CCV4-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 4:51:00 PM	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	CCV4-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 4:51:00 PM	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	LCVL4-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:05:00 PM	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	CCV5-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:47:00 PM	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	CCV5-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:47:00 PM	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	LCVL5-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:51:00 PM	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	CCV6-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:25:00 PM	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			
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			
Lithium	0.197	0.0100	0.200	0	98.4	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	CCV6-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:25:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	LCVL6-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:29:00 PM	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			
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			

Sample ID	CCV7-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:53:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.195	0.00250	0.200	0	97.5	90	110			
Arsenic	0.209	0.00500	0.200	0	105	90	110			
Barium	0.202	0.0100	0.200	0	101	90	110			
Beryllium	0.189	0.00100	0.200	0	94.5	90	110			
Cadmium	0.194	0.00100	0.200	0	97.1	90	110			
Calcium	4.75	0.300	5.00	0	95.0	90	110			
Chromium	0.197	0.00500	0.200	0	98.6	90	110			
Cobalt	0.201	0.00500	0.200	0	101	90	110			
Lead	0.191	0.00100	0.200	0	95.3	90	110			
Lithium	0.187	0.0100	0.200	0	93.7	90	110			
Molybdenum	0.186	0.00500	0.200	0	93.0	90	110			
Selenium	0.211	0.00500	0.200	0	106	90	110			
Thallium	0.191	0.00150	0.200	0	95.7	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	LCVL7-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:57:00 PM	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	0.00566	0.00500	0.00500	0	113	70	130			
Barium	0.00562	0.0100	0.00500	0	112	70	130			
Beryllium	0.00104	0.00100	0.00100	0	104	70	130			
Cadmium	0.00107	0.00100	0.00100	0	107	70	130			
Calcium	0.145	0.300	0.100	0	145	70	130			S
Chromium	0.00527	0.00500	0.00500	0	105	70	130			
Cobalt	0.00539	0.00500	0.00500	0	108	70	130			
Lead	0.00101	0.00100	0.00100	0	101	70	130			
Lithium	0.0118	0.0100	0.0100	0	118	70	130			
Molybdenum	0.00506	0.00500	0.00500	0	101	70	130			
Selenium	0.00594	0.00500	0.00500	0	119	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170107D

Sample ID	ICV-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_170107D	Analysis Date:	1/7/2017 12:28:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.100	0.0300	0.100	0	100	90	110			
Calcium	2.32	0.300	2.50	0	92.7	90	110			

Sample ID	LCVL-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170107D	Analysis Date:	1/7/2017 12:32:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0210	0.0300	0.0200	0	105	70	130			
Calcium	0.105	0.300	0.100	0	105	70	130			

Sample ID	CCV1-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170107D	Analysis Date:	1/7/2017 1:36:00 PM	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	LCVL1-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170107D	Analysis Date:	1/7/2017 2:28:00 PM	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			

Sample ID	CCV2-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170107D	Analysis Date:	1/7/2017 2:54:00 PM	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	LCVL2-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170107D	Analysis Date:	1/7/2017 3:42:00 PM	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			

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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170107D

Sample ID	CCV3-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170107D	Analysis Date:	1/7/2017 4:08:00 PM	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			
Calcium	4.99	0.300	5.00	0	99.8	90	110			

Sample ID	LCVL3-170107	Batch ID:	R89825	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170107D	Analysis Date:	1/7/2017 4:37:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0219	0.0300	0.0200	0	110	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			

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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170108C

Sample ID	ICV-170108	Batch ID:	R89833	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_170108C	Analysis Date:	1/8/2017 11:44:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.104	0.0300	0.100	0	104	90	110			

Sample ID	LCVL-170108	Batch ID:	R89833	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170108C	Analysis Date:	1/8/2017 11:49:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0195	0.0300	0.0200	0	97.3	70	130			

Sample ID	CCV2-170108	Batch ID:	R89833	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_170108C	Analysis Date:	1/8/2017 1:02:00 PM	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			

Sample ID	LCVL2-170108	Batch ID:	R89833	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170108C	Analysis Date:	1/8/2017 1:06:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0189	0.0300	0.0200	0	94.3	70	130			

Sample ID	CCV3-170108	Batch ID:	R89833	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170108C	Analysis Date:	1/8/2017 1:41:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.207	0.0300	0.200	0	103	90	110			

Sample ID	LCVL3-170108	Batch ID:	R89833	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170108C	Analysis Date:	1/8/2017 1:45:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0151	0.0300	0.0200	0	75.3	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161229A

The QC data in batch 78511 applies to the following samples: 1612207-01D, 1612207-02D, 1612207-03D, 1612207-04D, 1612207-05D, 1612207-06D, 1612207-07D

Sample ID	MB-78511		Batch ID:	78511		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC2_161229A		Analysis Date:	12/29/2016 9:13:49 AM		Prep Date:	12/29/2016	
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	LCS-78511			Batch ID:	78511		TestNo:	E300		Units:	mg/L	
SampType:	LCS			Run ID:	IC2_161229A		Analysis Date:	12/29/2016 9:28:26 AM		Prep Date:	12/29/2016	
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	3.87	0.400	4.000	0	96.8	90	110			
Sulfate	30.7	3.00	30.00	0	102	90	110			

Sample ID	LCSD-78511		Batch ID:	78511		TestNo:	E300		Units:	mg/L	
SampType:	LCSD		Run ID:	IC2_161229A		Analysis Date:	12/29/2016 9:43:02 AM		Prep Date:	12/29/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.0	1.00	10.00	0	100	90	110	0.022	20	
Fluoride	3.92	0.400	4.000	0	97.9	90	110	1.21	20	
Sulfate	30.5	3.00	30.00	0	102	90	110	0.572	20	

Sample ID	1612274-04BMS		Batch ID:	78511		TestNo:	E300		Units:	mg/L	
SampType:	MS		Run ID:	IC2_161229A		Analysis Date:	12/29/2016 3:06:22 PM		Prep Date:	12/29/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	3790	100	2000	1711	104	90	110			
Fluoride	2040	40.0	2000	14.87	101	90	110			
Sulfate	4810	300	2000	2637	109	90	110			

Sample ID	1612274-04BMSD		Batch ID:	78511		TestNo:	E300		Units:	mg/L	
SampType:	MSD		Run ID:	IC2_161229A		Analysis Date:	12/29/2016 3:20:59 PM		Prep Date:	12/29/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	3810	100	2000	1711	105	90	110	0.624	20	
Fluoride	2080	40.0	2000	14.87	103	90	110	1.51	20	
Sulfate	4860	300	2000	2637	111	90	110	1.07	20	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161229A

Sample ID	1612207-01DMS	Batch ID:	78511	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_161229A	Analysis Date:	12/29/2016 3:35:35 PM	Prep Date:	12/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2150	100	2000	0	108	90	110			
Fluoride	2070	40.0	2000	0	103	90	110			
Sulfate	4460	300	2000	2216	112	90	110			S

Sample ID	1612207-01DMSD	Batch ID:	78511	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC2_161229A	Analysis Date:	12/29/2016 3:50:12 PM	Prep Date:	12/29/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2160	100	2000	0	108	90	110	0.641	20	
Fluoride	2090	40.0	2000	0	105	90	110	1.19	20	
Sulfate	4510	300	2000	2216	115	90	110	1.07	20	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161229A

Sample ID	ICV-161229	Batch ID:	R89717	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_161229A	Analysis Date:	12/29/2016 8:40:05 AM	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	10.1	0.400	10.00	0	101	90	110			
Sulfate	79.5	3.00	75.00	0	106	90	110			

Sample ID	CCV1-161229	Batch ID:	R89717	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_161229A	Analysis Date:	12/29/2016 12:31:49 P	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	3.97	0.400	4.000	0	99.3	90	110			
Sulfate	31.1	3.00	30.00	0	104	90	110			

Sample ID	CCV2-161229	Batch ID:	R89717	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_161229A	Analysis Date:	12/29/2016 4:04:48 PM	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	4.10	0.400	4.000	0	103	90	110			
Sulfate	31.3	3.00	30.00	0	104	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: 1612207
Project: MLSES - A1 Area Landill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_161221A

The QC data in batch 78421 applies to the following samples: 1612207-01D, 1612207-02D, 1612207-03D, 1612207-04D, 1612207-05D, 1612207-06D, 1612207-07D

Sample ID	1612207-01D-DUP	Batch ID:	78421	TestNo:	M4500-H+ B	Units:	pH	Units@20.7°C			
SampType:	DUP	Run ID:	TITRATOR_161221A	Analysis Date:	12/21/2016 2:08:00 PM	Prep Date:	12/21/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH		6.62	0	0	6.510				1.68	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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_161221A

Sample ID	ICV-161221			Batch ID:	R89586		TestNo:	M4500-H+ B		Units:	pH Units@21°C	
SampType:	ICV			Run ID:	TITRATOR_161221A		Analysis Date:	12/21/2016 8:19:00 AM		Prep Date:	12/21/2016	
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	CCV2-161221	Batch ID:	R89586	TestNo:	M4500-H+ B	Units:	pH Units@20.7°C				
SampType:	CCV	Run ID:	TITRATOR_161221A	Analysis Date:	12/21/2016 9:37:00 AM	Prep Date:	12/21/2016				
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	CCV3-161221	Batch ID:	R89586		TestNo:	M4500-H+ B		Units:	pH Units@21.3°C		
SampType:	CCV	Run ID:	TITRATOR_161221A		Analysis Date:	12/21/2016 2:28:00 PM		Prep Date:	12/21/2016		
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			

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: 1612207
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_161221B

The QC data in batch 78407 applies to the following samples: 1612207-01D, 1612207-02D, 1612207-03D, 1612207-04D, 1612207-05D, 1612207-06D, 1612207-07D

Sample ID	MB-78407		Batch ID:	78407		TestNo:	M2540C		Units:	mg/L	
SampType:	MBLK		Run ID:	WC_161221B		Analysis Date:	12/22/2016 8:41:00 AM		Prep Date:	12/21/2016	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-78407		Batch ID:	78407		TestNo:	M2540C		Units:	mg/L	
SampType:	LCS		Run ID:	WC_161221B		Analysis Date:	12/22/2016 8:41:00 AM		Prep Date:	12/21/2016	
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	1612207-01D-DUP		Batch ID:	78407		TestNo:	M2540C		Units:	mg/L	
SampType:	DUP		Run ID:	WC_161221B		Analysis Date:	12/22/2016 8:41:00 AM		Prep Date:	12/21/2016	
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	1612207-05D-DUP	Batch ID:	78407	TestNo:	M2540C	Units:	mg/L			
SampType:	DUP	Run ID:	WC_161221B	Analysis Date:	12/22/2016 8:41:00 AM	Prep Date:	12/21/2016			
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

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: 20161257

This report contains the analytical results for the 7 sample(s) received under chain of custody by ESC Lab Sciences on 12/20/2016 11:11:44 AM. These samples are associated with your 1612207 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

L880001

Client : DHL Analytical, Inc.
 Client Project : 1612207
 Lab Number : 20161257
 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 : 20161257-01
Client ID : BMW-19
Date Sampled : 12/14/2016 7:20:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium	0.666 +/- 0.656	1.14	pCi/l				
Radium-226 SM 7500 Ra B M*	-0.153 +/- 0.157	0.309	pCi/l		01/07/17	01/09/17	AK
Radium-228 EPA 904*/9320*	0.666 +/- 0.499	0.827	pCi/l		01/17/17	01/24/17	JR

Lab ID : 20161257-02
Client ID : BMW-18
Date Sampled : 12/14/2016 8:20:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium	2.07 +/- 0.602	0.945	pCi/l				
Radium-226 SM 7500 Ra B M*	0.084 +/- 0.095	0.140	pCi/l		01/07/17	01/09/17	AK
Radium-228 EPA 904*/9320*	1.99 +/- 0.507	0.805	pCi/l		01/17/17	01/24/17	JR

Lab ID : 20161257-03
Client ID : BMW-28
Date Sampled : 12/14/2016 9:15:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium	2.79 +/- 0.780	1.10	pCi/l				
Radium-226 SM 7500 Ra B M*	0.566 +/- 0.209	0.193	pCi/l		01/07/17	01/09/17	AK
Radium-228 EPA 904*/9320*	2.22 +/- 0.571	0.910	pCi/l		01/17/17	01/24/17	JR

Lab ID : 20161257-04
Client ID : BMW-27
Date Sampled : 12/14/2016 10:20:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium	1.17 +/- 0.572	1.02	pCi/l				
Radium-226 SM 7500 Ra B M*	0.120 +/- 0.099	0.108	pCi/l		01/07/17	01/09/17	AK
Radium-228 EPA 904*/9320*	1.05 +/- 0.473	0.907	pCi/l		01/17/17	01/24/17	JR



Client : DHL Analytical, Inc.
Client Project : 1612207
Lab Number : 20161257
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 : 20161257-05

Client ID : BMW-26

Date Sampled : 12/14/2016 11:25:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		1.45 +/- 0.705	1.22	pCi/l			
Radium-226	SM 7500 Ra B M*	0.161 +/- 0.136	0.177	pCi/l	01/07/17	01/09/17	AK
Radium-228	EPA 904*/9320*	1.29 +/- 0.569	1.04	pCi/l	01/17/17	01/24/17	JR

Lab ID : 20161257-06

Client ID : EB-1

Date Sampled : 12/14/2016 11:45:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		0.914 +/- 0.533	0.938	pCi/l			
Radium-226	SM 7500 Ra B M*	-0.064 +/- 0.077	0.192	pCi/l	01/07/17	01/09/17	AK
Radium-228	EPA 904*/9320*	0.914 +/- 0.456	0.746	pCi/l	01/17/17	01/24/17	JR

Lab ID : 20161257-07

Client ID : BMW-11AR

Date Sampled : 12/14/2016 10:15:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		2.55 +/- 0.719	1.24	pCi/l			
Radium-226	SM 7500 Ra B M*	0.821 +/- 0.248	0.203	pCi/l	01/07/17	01/09/17	AK
Radium-228	EPA 904*/9320*	1.73 +/- 0.471	1.04	pCi/l	01/17/17	01/24/17	JR

Client : DHL Analytical, Inc.
 Client Project : 1612207
 Lab Number : 20161257
 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	0.016	105.0			NC	0.688	108.0	111.0	1.7	R1177
Radium-228	-0.097	109.0			NC	0.385	82.1	74.8	8.9	R3909

Lab Approval:



Ron Eidson
Director of Radiochemistry

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1612207

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 BMW-19	Aqueous	-01B	12/14/16 07:20 AM	1LHDPEHNO3	1					
BMW-19	Aqueous	-01C	12/14/16 07:20 AM	500HDPEHNO3		1				
2 BMW-18	Aqueous	-02B	12/14/16 08:20 AM	1LHDPEHNO3	1					
BMW-18	Aqueous	-02C	12/14/16 08:20 AM	500HDPEHNO3		1				
3 BMW-28	Aqueous	-03B	12/14/16 09:15 AM	1LHDPEHNO3	1					
BMW-28	Aqueous	-03C	12/14/16 09:15 AM	500HDPEHNO3		1				
4 BMW-27	Aqueous	-04B	12/14/16 10:20 AM	1LHDPEHNO3	1					
BMW-27	Aqueous	-04C	12/14/16 10:20 AM	500HDPEHNO3		1				
5 BMW-26	Aqueous	-05B	12/14/16 11:25 AM	1LHDPEHNO3	1					
BMW-26	Aqueous	-05C	12/14/16 11:25 AM	500HDPEHNO3		1				
6 EB-1	Aqueous	-06B	12/14/16 11:45 AM	1LHDPEHNO3	1					
EB-1	Aqueous	-06C	12/14/16 11:45 AM	500HDPEHNO3		1				
7 BMW-11AR	Aqueous	-07B	12/14/16 10:15 AM	1LHDPEHNO3	1					
BMW-11AR	Aqueous	-07C	12/14/16 10:15 AM	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 880001

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 11:11

20161257

SAMPLE LOGIN

Date Received: 12/20/2016 11:11:

Lab Number: 20161257

Due: 1/19/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20161257-01 B	BMW-19	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161257-01 A	BMW-19	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161257-02 B	BMW-18	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161257-02 A	BMW-18	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161257-03 B	BMW-28	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161257-03 A	BMW-28	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161257-04 B	BMW-27	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161257-04 A	BMW-27	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161257-05 B	BMW-26	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161257-05 A	BMW-26	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161257-06 B	EB-1	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161257-06 A	EB-1	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161257-07 B	BMW-11AR	NPW	12/14/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161257-07 A	BMW-11AR	NPW	12/14/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						

CONTAINER INSPECTION

Coolers 3 Custody Seals Broken ☒ Temperature: Amb Ice

Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken ☒

Chain of Custody Record ☒

Labels in Tact ☒

Radiation Survey Complete ☒

Abnormalities

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:

LUMINANT



January 26, 2017

Will Vienne
Pastor, Behling & Wheeler
2201 Double Creek Dr #4004
Round Rock, Texas 78664
TEL: (512) 671-3434
FAX (512) 671-3446
RE: MLSES - A1 Area Landfill

Order No.: 1612145

Dear Will Vienne:

DHL Analytical, Inc. received 5 sample(s) on 12/14/2016 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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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 (512) 671-3434

PBW
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 13DEC16
ACTWGT: 58.00 LB
CAD: 006994167/SSFE1722
DIMS: 24x14x14 IN

BILL THIRD PARTY

Part 156237V9337/4444/1044EXP 08/17 000

TO **DHL**

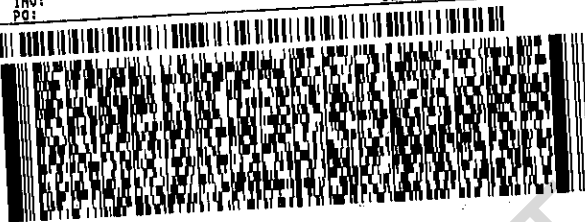
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 888-8222

REF:

DEPT:



FedEx
Express



1 of 2

TRK# 7849 8448 6554

0201
MASTER

A8 BSMA

WED - 14 DEC 10:30A
PRIORITY OVERNIGHT

78664
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 12/14/2016

Work Order Number 1612145

Received by JT

Checklist completed by: [Signature] 12/14/2016
Signature DateReviewed by [Signature] 12/14/2016
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 ☐	3.4 °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? <u>ND</u>		Checked by <u>[Signature]</u>
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: MLSES - A1 Area Landfill
Lab Order: 1612145

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 12/14/16. A total of 5 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 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 from this work order. The LCS was within control limits. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 12/23/16 the matrix spike and matrix spike duplicate recoveries were below control limits for Chloride. 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

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill
Lab Order: 1612145

CASE NARRATIVE

was within control limits for this analyte. No further corrective actions were taken.

LUMINANT

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill
Lab Order: 1612145**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1612145-01	BMW-24		12/13/16 01:10 PM	12/14/2016
1612145-02	BMW-23		12/13/16 02:10 PM	12/14/2016
1612145-03	BMW-22		12/13/16 03:05 PM	12/14/2016
1612145-04	BMW-21		12/13/16 04:00 PM	12/14/2016
1612145-05	BMW-20		12/13/16 04:50 PM	12/14/2016

Lab Order: 1612145
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1612145-01A	BMW-24	12/13/16 01:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-24	12/13/16 01:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-24	12/13/16 01:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612145-01D	BMW-24	12/13/16 01:10 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-24	12/13/16 01:10 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-24	12/13/16 01:10 PM	Aqueous	E300	Anion Preparation	12/27/16 09:48 AM	78477
	BMW-24	12/13/16 01:10 PM	Aqueous	M4500-H+ B	pH Preparation	12/15/16 07:51 AM	78292
	BMW-24	12/13/16 01:10 PM	Aqueous	M2540C	TDS Preparation	12/20/16 02:57 PM	78399
1612145-02A	BMW-23	12/13/16 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-23	12/13/16 02:10 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-23	12/13/16 02:10 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612145-02D	BMW-23	12/13/16 02:10 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-23	12/13/16 02:10 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-23	12/13/16 02:10 PM	Aqueous	M4500-H+ B	pH Preparation	12/15/16 07:51 AM	78292
	BMW-23	12/13/16 02:10 PM	Aqueous	M2540C	TDS Preparation	12/20/16 02:57 PM	78399
1612145-03A	BMW-22	12/13/16 03:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-22	12/13/16 03:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-22	12/13/16 03:05 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612145-03D	BMW-22	12/13/16 03:05 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-22	12/13/16 03:05 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-22	12/13/16 03:05 PM	Aqueous	M4500-H+ B	pH Preparation	12/15/16 07:51 AM	78292
	BMW-22	12/13/16 03:05 PM	Aqueous	M2540C	TDS Preparation	12/20/16 02:57 PM	78399
1612145-04A	BMW-21	12/13/16 04:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-21	12/13/16 04:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-21	12/13/16 04:00 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612145-04D	BMW-21	12/13/16 04:00 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-21	12/13/16 04:00 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-21	12/13/16 04:00 PM	Aqueous	M4500-H+ B	pH Preparation	12/15/16 07:51 AM	78292

Lab Order: 1612145
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1612145-04D	BMW-21	12/13/16 04:00 PM	Aqueous	M2540C	TDS Preparation	12/20/16 02:57 PM	78399
1612145-05A	BMW-20	12/13/16 04:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-20	12/13/16 04:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	12/21/16 08:32 AM	78405
	BMW-20	12/13/16 04:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	12/21/16 10:13 AM	78414
1612145-05D	BMW-20	12/13/16 04:50 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-20	12/13/16 04:50 PM	Aqueous	E300	Anion Preparation	12/23/16 08:12 AM	78450
	BMW-20	12/13/16 04:50 PM	Aqueous	M4500-H+ B	pH Preparation	12/15/16 07:51 AM	78292
	BMW-20	12/13/16 04:50 PM	Aqueous	M2540C	TDS Preparation	12/20/16 02:57 PM	78399

Lab Order: 1612145
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1612145-01A	BMW-24	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 01:24 PM	CETAC2_HG_161222 B
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	5	12/29/16 05:23 PM	ICP-MS4_161229D
	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 05:25 PM	ICP-MS4_161229D
1612145-01D	BMW-24	Aqueous	E300	Anions by IC method - Water	78450	1	12/23/16 10:27 AM	IC2_161223A
	BMW-24	Aqueous	E300	Anions by IC method - Water	78450	10	12/23/16 11:58 AM	IC2_161223A
	BMW-24	Aqueous	E300	Anions by IC method - Water	78477	100	12/27/16 11:35 AM	IC3_161227A
	BMW-24	Aqueous	M4500-H+ B	pH	78292	1	12/15/16 09:25 AM	TITRATOR_161215A
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	78399	1	12/21/16 08:45 AM	WC_161220A
1612145-02A	BMW-23	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:09 PM	CETAC2_HG_161222 B
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	12/29/16 05:27 PM	ICP-MS4_161229D
	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/30/16 02:58 PM	ICP-MS4_161230A
1612145-02D	BMW-23	Aqueous	E300	Anions by IC method - Water	78450	1	12/23/16 10:41 AM	IC2_161223A
	BMW-23	Aqueous	E300	Anions by IC method - Water	78450	10	12/23/16 12:42 PM	IC2_161223A
	BMW-23	Aqueous	M4500-H+ B	pH	78292	1	12/15/16 09:27 AM	TITRATOR_161215A
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	78399	1	12/21/16 08:45 AM	WC_161220A
1612145-03A	BMW-22	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:11 PM	CETAC2_HG_161222 B
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	12/29/16 05:29 PM	ICP-MS4_161229D
	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/30/16 02:54 PM	ICP-MS4_161230A
1612145-03D	BMW-22	Aqueous	E300	Anions by IC method - Water	78450	10	12/23/16 12:58 PM	IC2_161223A
	BMW-22	Aqueous	E300	Anions by IC method - Water	78450	1	12/23/16 10:56 AM	IC2_161223A
	BMW-22	Aqueous	M4500-H+ B	pH	78292	1	12/15/16 09:31 AM	TITRATOR_161215A
	BMW-22	Aqueous	M2540C	Total Dissolved Solids	78399	1	12/21/16 08:45 AM	WC_161220A
1612145-04A	BMW-21	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:13 PM	CETAC2_HG_161222 B
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	10	12/29/16 05:19 PM	ICP-MS4_161229D
	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 05:57 PM	ICP-MS4_161229D
1612145-04D	BMW-21	Aqueous	E300	Anions by IC method - Water	78450	10	12/23/16 01:15 PM	IC2_161223A

Lab Order: 1612145
Client: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1612145-04D	BMW-21	Aqueous	E300	Anions by IC method - Water	78450	1	12/23/16 11:14 AM	IC2_161223A
	BMW-21	Aqueous	M4500-H+ B	pH	78292	1	12/15/16 09:34 AM	TITRATOR_161215A
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	78399	1	12/21/16 08:45 AM	WC_161220A
1612145-05A	BMW-20	Aqueous	SW7470A	Mercury Total: Aqueous	78414	1	12/22/16 02:16 PM	CETAC2_HG_161222 B
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	5	12/29/16 05:31 PM	ICP-MS4_161229D
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	78405	1	12/29/16 05:33 PM	ICP-MS4_161229D
1612145-05D	BMW-20	Aqueous	E300	Anions by IC method - Water	78450	1	12/23/16 11:36 AM	IC2_161223A
	BMW-20	Aqueous	E300	Anions by IC method - Water	78450	10	12/23/16 01:30 PM	IC2_161223A
	BMW-20	Aqueous	M4500-H+ B	pH	78292	1	12/15/16 09:36 AM	TITRATOR_161215A
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	78399	1	12/21/16 08:45 AM	WC_161220A

DHL Analytical, Inc.

Date: 26-Jan-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612145

Client Sample ID: BMW-24
Lab ID: 1612145-01
Collection Date: 12/13/16 01:10 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 01:24 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 05:25 PM
Arsenic	0.00498	0.00200	0.00500	J	mg/L	1	12/29/16 05:25 PM
Barium	1.96	0.0150	0.0500		mg/L	5	12/29/16 05:23 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:25 PM
Boron	0.225	0.0100	0.0300		mg/L	1	12/29/16 05:25 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:25 PM
Calcium	62.5	0.500	1.50		mg/L	5	12/29/16 05:23 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:25 PM
Cobalt	0.00326	0.00300	0.00500	J	mg/L	1	12/29/16 05:25 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:25 PM
Lithium	0.00914	0.00500	0.0100	J	mg/L	1	12/29/16 05:25 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:25 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:25 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 05:25 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	518	30.0	100		mg/L	100	12/27/16 11:35 AM
Fluoride	0.300	0.100	0.400	J	mg/L	1	12/23/16 10:27 AM
Sulfate	33.0	1.00	3.00		mg/L	1	12/23/16 10:27 AM
PH		M4500-H+ B		Analyst: BJT			
pH	6.62	0	0		pH Units@20.6°C	1	12/15/16 09:25 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1480	50.0	50.0		mg/L	1	12/21/16 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: 26-Jan-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612145

Client Sample ID: BMW-23
Lab ID: 1612145-02
Collection Date: 12/13/16 02:10 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:09 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/30/16 02:58 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	12/30/16 02:58 PM
Barium	0.0407	0.00300	0.0100		mg/L	1	12/30/16 02:58 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/30/16 02:58 PM
Boron	1.25	0.100	0.300		mg/L	10	12/29/16 05:27 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/30/16 02:58 PM
Calcium	91.8	1.00	3.00		mg/L	10	12/29/16 05:27 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/30/16 02:58 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/30/16 02:58 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/30/16 02:58 PM
Lithium	0.0817	0.00500	0.0100		mg/L	1	12/30/16 02:58 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/30/16 02:58 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/30/16 02:58 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/30/16 02:58 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: BJT			
Chloride	237	3.00	10.0		mg/L	10	12/23/16 12:42 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/23/16 10:41 AM
Sulfate	510	10.0	30.0		mg/L	10	12/23/16 12:42 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.70	0	0		pH Units@20.5°C	1	12/15/16 09:27 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1870	50.0	50.0		mg/L	1	12/21/16 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: 26-Jan-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612145

Client Sample ID: BMW-22
Lab ID: 1612145-03
Collection Date: 12/13/16 03:05 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:11 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/30/16 02:54 PM
Arsenic	0.00232	0.00200	0.00500	J	mg/L	1	12/30/16 02:54 PM
Barium	0.0655	0.00300	0.0100		mg/L	1	12/30/16 02:54 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/30/16 02:54 PM
Boron	3.45	0.100	0.300		mg/L	10	12/29/16 05:29 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/30/16 02:54 PM
Calcium	191	1.00	3.00		mg/L	10	12/29/16 05:29 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/30/16 02:54 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/30/16 02:54 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/30/16 02:54 PM
Lithium	0.0689	0.00500	0.0100		mg/L	1	12/30/16 02:54 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/30/16 02:54 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/30/16 02:54 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/30/16 02:54 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: BJT			
Chloride	281	3.00	10.0		mg/L	10	12/23/16 12:58 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/23/16 10:56 AM
Sulfate	896	10.0	30.0		mg/L	10	12/23/16 12:58 PM
PH		M4500-H+ B		Analyst: BJT			
pH	6.86	0	0		pH Units@20.9°C	1	12/15/16 09:31 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2370	50.0	50.0		mg/L	1	12/21/16 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: 26-Jan-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612145

Client Sample ID: BMW-21
Lab ID: 1612145-04
Collection Date: 12/13/16 04:00 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:13 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 05:57 PM
Arsenic	0.00217	0.00200	0.00500	J	mg/L	1	12/29/16 05:57 PM
Barium	0.0438	0.00300	0.0100		mg/L	1	12/29/16 05:57 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:57 PM
Boron	0.993	0.100	0.300		mg/L	10	12/29/16 05:19 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:57 PM
Calcium	149	1.00	3.00		mg/L	10	12/29/16 05:19 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:57 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	12/29/16 05:57 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:57 PM
Lithium	0.0631	0.00500	0.0100		mg/L	1	12/29/16 05:57 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:57 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:57 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 05:57 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: BJT			
Chloride	426	3.00	10.0		mg/L	10	12/23/16 01:15 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/23/16 11:14 AM
Sulfate	483	10.0	30.0		mg/L	10	12/23/16 01:15 PM
PH		M4500-H+ B		Analyst: BJT			
pH	7.41	0	0		pH Units@21°C	1	12/15/16 09:34 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2170	50.0	50.0		mg/L	1	12/21/16 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: 26-Jan-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A1 Area Landfill
Project No: 5164-B
Lab Order: 1612145

Client Sample ID: BMW-20
Lab ID: 1612145-05
Collection Date: 12/13/16 04:50 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	12/22/16 02:16 PM
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	12/29/16 05:33 PM
Arsenic	0.00483	0.00200	0.00500	J	mg/L	1	12/29/16 05:33 PM
Barium	0.0377	0.00300	0.0100		mg/L	1	12/29/16 05:33 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:33 PM
Boron	0.0687	0.0100	0.0300		mg/L	1	12/29/16 05:33 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:33 PM
Calcium	62.8	0.500	1.50		mg/L	5	12/29/16 05:31 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:33 PM
Cobalt	0.0451	0.00300	0.00500		mg/L	1	12/29/16 05:33 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	12/29/16 05:33 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	12/29/16 05:33 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:33 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	12/29/16 05:33 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	12/29/16 05:33 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: BJT			
Chloride	42.8	0.300	1.00		mg/L	1	12/23/16 11:36 AM
Fluoride	<0.100	0.100	0.400		mg/L	1	12/23/16 11:36 AM
Sulfate	335	10.0	30.0		mg/L	10	12/23/16 01:30 PM
PH		M4500-H+ B		Analyst: BJT			
pH	5.67	0	0		pH Units@21.3°C	1	12/15/16 09:36 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	757	10.0	10.0		mg/L	1	12/21/16 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: 1612145

Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161222B

The QC data in batch 78414 applies to the following samples: 1612145-01A, 1612145-02A, 1612145-03A, 1612145-04A, 1612145-05A

Sample ID	MB-78414	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L				
SampType:	MBLK	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:17:18 PM	Prep Date:	12/21/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-78414	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCS	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:19:33 PM	Prep Date:	12/21/2016				
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	LCSD-78414	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCSD	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:21:50 PM	Prep Date:	12/21/2016				
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	1612145-01A MS	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L				
SampType:	MS	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:51:23 PM	Prep Date:	12/21/2016				
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	1612145-01A MSD	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L				
SampType:	MSD	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 1:53:39 PM	Prep Date:	12/21/2016				
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	1612205-01A SD	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L				
SampType:	SD	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:04:44 PM	Prep Date:	12/21/2016				
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	1612205-01A PDS	Batch ID:	78414	TestNo:	SW7470A	Units:	mg/L				
SampType:	PDS	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:06:59 PM	Prep Date:	12/21/2016				
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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_161222B

Sample ID	ICV-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 10:43:02 A	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			

Sample ID	CCV3-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 12:41:08 P	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			

Sample ID	CCV-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:00:08 PM	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			

Sample ID	CCV4-161222	Batch ID:	R89600	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_161222B	Analysis Date:	12/22/2016 2:29:41 PM	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			

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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

The QC data in batch 78405 applies to the following samples: 1612145-01A, 1612145-02A, 1612145-03A, 1612145-04A, 1612145-05A

Sample ID MB-78405	Batch ID: 78405	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:11:00 PM	Prep Date: 12/21/2016

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 LCS-78405	Batch ID: 78405	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:13:00 PM	Prep Date: 12/21/2016

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 LCSD-78405	Batch ID: 78405	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:15:00 PM	Prep Date: 12/21/2016

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	
Arsenic	0.215	0.00500	0.200	0	107	80	120	1.12	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID: LCSD-78405	Batch ID: 78405	TestNo: SW6020A	Units: mg/L							
SampType: LCSD	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:15:00 PM	Prep Date: 12/21/2016							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

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	1612145-04A SD			Batch ID:	78405		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD			Run ID:	ICP-MS4_161229D		Analysis Date:	12/29/2016 5:21:00 PM		Prep Date:	12/21/2016	
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: 1612145-04A PDS	Batch ID: 78405	TestNo: SW6020A	Units: mg/L							
SampType: PDS	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:41:00 PM	Prep Date: 12/21/2016							
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	1612145-04A MS			Batch ID:	78405		TestNo:	SW6020A		Units:	mg/L	
SampType:	MS			Run ID:	ICP-MS4_161229D		Analysis Date:	12/29/2016 5:43:00 PM		Prep Date:	12/21/2016	
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: 1612145-04A MSD	Batch ID: 78405	TestNo: SW6020A	Units: mg/L							
SampType: MSD	Run ID: ICP-MS4_161229D	Analysis Date: 12/29/2016 5:45:00 PM	Prep Date: 12/21/2016							
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
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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	1612145-04A SD	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L				
SampType:	SD	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:59:00 PM	Prep Date:	12/21/2016				
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	1612145-04A PDS	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:19:00 PM	Prep Date:	12/21/2016				
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	1612145-04A MS			Batch ID:	78405		TestNo:	SW6020A		Units:	mg/L	
SampType:	MS			Run ID:	ICP-MS4_161229D		Analysis Date:	12/29/2016 6:21:00 PM		Prep Date:	12/21/2016	
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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	1612145-04A MS	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:21:00 PM	Prep Date:	12/21/2016			
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	1612145-04A MSD	Batch ID:	78405	TestNo:	SW6020A	Units:	mg/L				
SampType:	MSD	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:23:00 PM	Prep Date:	12/21/2016				
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
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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	ICV-161229		Batch ID:	R89722		TestNo:	SW6020A		Units:	mg/L	
SampType:	ICV		Run ID:	ICP-MS4_161229D		Analysis Date:	12/29/2016 12:28:00 P		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	LCVL-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 12:34:00 P	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	CCV4-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 4:51:00 PM	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	CCV4-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 4:51:00 PM	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	LCVL4-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:05:00 PM	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	CCV5-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:47:00 PM	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	CCV5-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:47:00 PM	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	LCVL5-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 5:51:00 PM	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	CCV6-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:25:00 PM	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			
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			
Lithium	0.197	0.0100	0.200	0	98.4	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161229D

Sample ID	CCV6-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:25:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
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	LCVL6-161229	Batch ID:	R89722	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161229D	Analysis Date:	12/29/2016 6:29:00 PM	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			
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
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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161230A

Sample ID	ICV-161230	Batch ID:	R89729	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_161230A	Analysis Date:	12/30/2016 12:40:00 P	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.0998	0.00250	0.100	0	99.8	90	110			
Arsenic	0.101	0.00500	0.100	0	101	90	110			
Barium	0.103	0.0100	0.100	0	103	90	110			
Beryllium	0.0989	0.00100	0.100	0	98.9	90	110			
Cadmium	0.102	0.00100	0.100	0	102	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	0.0995	0.00100	0.100	0	99.5	90	110			
Lithium	0.0981	0.0100	0.100	0	98.1	90	110			
Molybdenum	0.101	0.00500	0.100	0	101	90	110			
Selenium	0.0992	0.00500	0.100	0	99.2	90	110			
Thallium	0.0996	0.00150	0.100	0	99.6	90	110			

Sample ID	LCVL-161230	Batch ID:	R89729	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161230A	Analysis Date:	12/30/2016 12:50:00 P	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00184	0.00250	0.00200	0	92.0	70	130			
Arsenic	0.00480	0.00500	0.00500	0	96.1	70	130			
Barium	0.00484	0.0100	0.00500	0	96.8	70	130			
Beryllium	0.00103	0.00100	0.00100	0	103	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Chromium	0.00500	0.00500	0.00500	0	100	70	130			
Cobalt	0.00500	0.00500	0.00500	0	99.9	70	130			
Lead	0.00107	0.00100	0.00100	0	107	70	130			
Lithium	0.00969	0.0100	0.0100	0	96.9	70	130			
Molybdenum	0.00495	0.00500	0.00500	0	98.9	70	130			
Selenium	0.00463	0.00500	0.00500	0	92.7	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	LCVL2-161230	Batch ID:	R89729	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161230A	Analysis Date:	12/30/2016 2:42:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00195	0.00250	0.00200	0	97.6	70	130			
Arsenic	0.00518	0.00500	0.00500	0	104	70	130			
Barium	0.00487	0.0100	0.00500	0	97.3	70	130			
Beryllium	0.00111	0.00100	0.00100	0	111	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Chromium	0.00481	0.00500	0.00500	0	96.2	70	130			
Cobalt	0.00506	0.00500	0.00500	0	101	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161230A

Sample ID	LCVL2-161230	Batch ID:	R89729	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_161230A	Analysis Date:	12/30/2016 2:42:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lead	0.000931	0.00100	0.00100	0	93.1	70	130			
Lithium	0.00970	0.0100	0.0100	0	97.0	70	130			
Molybdenum	0.00481	0.00500	0.00500	0	96.2	70	130			
Selenium	0.00503	0.00500	0.00500	0	101	70	130			
Thallium	0.000981	0.00150	0.00100	0	98.1	70	130			

Sample ID	CCV2-161230	Batch ID:	R89729	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161230A	Analysis Date:	12/30/2016 2:46:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.194	0.00250	0.200	0	97.0	90	110			
Arsenic	0.209	0.00500	0.200	0	104	90	110			
Barium	0.196	0.0100	0.200	0	98.1	90	110			
Beryllium	0.192	0.00100	0.200	0	95.8	90	110			
Cadmium	0.197	0.00100	0.200	0	98.3	90	110			
Chromium	0.195	0.00500	0.200	0	97.3	90	110			
Cobalt	0.200	0.00500	0.200	0	100	90	110			
Lead	0.192	0.00100	0.200	0	95.8	90	110			
Lithium	0.185	0.0100	0.200	0	92.4	90	110			
Molybdenum	0.195	0.00500	0.200	0	97.6	90	110			
Selenium	0.204	0.00500	0.200	0	102	90	110			
Thallium	0.194	0.00150	0.200	0	97.2	90	110			

Sample ID	CCV3-161230	Batch ID:	R89729	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_161230A	Analysis Date:	12/30/2016 3:04:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.191	0.00250	0.200	0	95.6	90	110			
Arsenic	0.210	0.00500	0.200	0	105	90	110			
Barium	0.194	0.0100	0.200	0	96.8	90	110			
Beryllium	0.197	0.00100	0.200	0	98.5	90	110			
Cadmium	0.200	0.00100	0.200	0	99.8	90	110			
Chromium	0.197	0.00500	0.200	0	98.6	90	110			
Cobalt	0.202	0.00500	0.200	0	101	90	110			
Lead	0.194	0.00100	0.200	0	97.2	90	110			
Lithium	0.183	0.0100	0.200	0	91.3	90	110			
Molybdenum	0.195	0.00500	0.200	0	97.5	90	110			
Selenium	0.204	0.00500	0.200	0	102	90	110			
Thallium	0.197	0.00150	0.200	0	98.7	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_161230A

Sample ID	LCVL3-161230	Batch ID:	R89729	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_161230A	Analysis Date:	12/30/2016 3:06:00 PM	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	0.00543	0.00500	0.00500	0	109	70	130			
Barium	0.00491	0.0100	0.00500	0	98.3	70	130			
Beryllium	0.00101	0.00100	0.00100	0	101	70	130			
Cadmium	0.00107	0.00100	0.00100	0	107	70	130			
Chromium	0.00495	0.00500	0.00500	0	99.0	70	130			
Cobalt	0.00510	0.00500	0.00500	0	102	70	130			
Lead	0.00101	0.00100	0.00100	0	101	70	130			
Lithium	0.00902	0.0100	0.0100	0	90.2	70	130			
Molybdenum	0.00535	0.00500	0.00500	0	107	70	130			
Selenium	0.00565	0.00500	0.00500	0	113	70	130			
Thallium	0.00111	0.00150	0.00100	0	111	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161223A

The QC data in batch 78450 applies to the following samples: 1612145-01D, 1612145-02D, 1612145-03D, 1612145-04D, 1612145-05D

Sample ID	MB-78450	Batch ID:	78450	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC2_161223A	Analysis Date:	12/23/2016 9:26:15 AM	Prep Date:	12/23/2016			
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	LCS-78450	Batch ID:	78450	TestNo:	E300	Units:	mg/L			
SampType:	LCS	Run ID:	IC2_161223A	Analysis Date:	12/23/2016 9:40:52 AM	Prep Date:	12/23/2016			
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	4.01	0.400	4.000	0	100	90	110			
Sulfate	31.0	3.00	30.00	0	103	90	110			

Sample ID	LCSD-78450	Batch ID:	78450	TestNo:	E300	Units:	mg/L			
SampType:	LCSD	Run ID:	IC2_161223A	Analysis Date:	12/23/2016 10:00:27 A	Prep Date:	12/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.2	1.00	10.00	0	102	90	110	0.773	20	
Fluoride	4.02	0.400	4.000	0	101	90	110	0.334	20	
Sulfate	31.0	3.00	30.00	0	103	90	110	0.041	20	

Sample ID	1612145-01DMS	Batch ID:	78450	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_161223A	Analysis Date:	12/23/2016 12:13:20 P	Prep Date:	12/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	700	10.0	200.0	557.5	71.1	90	110			S
Fluoride	201	4.00	200.0	0	100	90	110			
Sulfate	236	30.0	200.0	33.30	101	90	110			

Sample ID	1612145-01DMSD	Batch ID:	78450	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC2_161223A	Analysis Date:	12/23/2016 12:27:57 P	Prep Date:	12/23/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	698	10.0	200.0	557.5	70.2	90	110	0.263	20	S
Fluoride	201	4.00	200.0	0	100	90	110	0.044	20	
Sulfate	233	30.0	200.0	33.30	99.6	90	110	1.32	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_161223A

Sample ID	ICV-161222	Batch ID:	R89626		TestNo:	E300		Units:	mg/L		
SampType:	ICV	Run ID:	IC2_161223A		Analysis Date:	12/23/2016 8:35:00 AM		Prep Date:			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		26.0	1.00	25.00	0	104	90	110			
Fluoride		9.87	0.400	10.00	0	98.7	90	110			
Sulfate		79.8	3.00	75.00	0	106	90	110			

Sample ID	CCV1-161223	Batch ID:	R89626	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_161223A	Analysis Date:	12/23/2016 1:44:44 PM	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	4.11	0.400	4.000	0	103	90	110			
Sulfate	31.2	3.00	30.00	0	104	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_161227A

The QC data in batch 78477 applies to the following samples: 1612145-01D

Sample ID	MB-78477	Batch ID:	78477	TestNo:	E300	Units:	mg/L				
SampType:	MBLK	Run ID:	IC3_161227A	Analysis Date:	12/27/2016 10:28:10 A	Prep Date:	12/27/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	<0.300	1.00									

Sample ID	LCS-78477	Batch ID:	78477	TestNo:	E300	Units:	mg/L				
SampType:	LCS	Run ID:	IC3_161227A	Analysis Date:	12/27/2016 10:48:48 A	Prep Date:	12/27/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.59	1.00	10.00	0	95.9	90	110				

Sample ID	LCSD-78477	Batch ID:	78477	TestNo:	E300	Units:	mg/L				
SampType:	LCSD	Run ID:	IC3_161227A	Analysis Date:	12/27/2016 11:09:27 A	Prep Date:	12/27/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.57	1.00	10.00	0	95.7	90	110	0.198	20		

Sample ID	1612145-01DMS	Batch ID:	78477	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC3_161227A	Analysis Date:	12/27/2016 11:59:14 A	Prep Date:	12/27/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2460	100	2000	518.1	97.2	90	110				

Sample ID	1612145-01DMSD	Batch ID:	78477	TestNo:	E300	Units:	mg/L				
SampType:	MSD	Run ID:	IC3_161227A	Analysis Date:	12/27/2016 12:19:53 P	Prep Date:	12/27/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2450	100	2000	518.1	96.8	90	110	0.342	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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_161227A

Sample ID	ICV-161227	Batch ID:	R89679	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC3_161227A	Analysis Date:	12/27/2016 9:20:09 AM	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			

Sample ID	CCV1-161227	Batch ID:	R89679	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC3_161227A	Analysis Date:	12/27/2016 4:39:54 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.60	1.00	10.00	0	96.0	90	110			

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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_161215A

The QC data in batch 78292 applies to the following samples: 1612145-01D, 1612145-02D, 1612145-03D, 1612145-04D, 1612145-05D

Sample ID	1612144-01D-DUP	Batch ID:	78292	TestNo:	M4500-H+ B	Units:	pH Units@19.8°C
SampType:	DUP	Run ID:	TITRATOR_161215A	Analysis Date:	12/15/2016 9:11:00 AM	Prep Date:	12/15/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

pH	6.18	0	0	6.160			0.324 5

Sample ID	1612145-01D-DUP	Batch ID:	78292	TestNo:	M4500-H+ B	Units:	pH Units@20.2°C
SampType:	DUP	Run ID:	TITRATOR_161215A	Analysis Date:	12/15/2016 9:26:00 AM	Prep Date:	12/15/2016
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

pH	6.62	0	0	6.620			0 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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_161215A

Sample ID	ICV-161215	Batch ID:	R89460	TestNo:	M4500-H+ B	Units:	pH Units@21.6°C			
SampType:	ICV	Run ID:	TITRATOR_161215A	Analysis Date:	12/15/2016 8:14:00 AM	Prep Date:	12/15/2016			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.91	0	10.00	0	99.1	99	101			

Sample ID	CCV1-161215	Batch ID:	R89460	TestNo:	M4500-H+ B	Units:	pH Units@21.6°C			
SampType:	CCV	Run ID:	TITRATOR_161215A	Analysis Date:	12/15/2016 9:28:00 AM	Prep Date:	12/15/2016			
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			

Sample ID	CCV2-161215	Batch ID:	R89460	TestNo:	M4500-H+ B	Units:	pH Units@21.8°C				
SampType:	CCV	Run ID:	TITRATOR_161215A	Analysis Date:	12/15/2016 9:39:00 AM	Prep Date:	12/15/2016				
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			

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: 1612145
Project: MLSES - A1 Area Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_161220A

The QC data in batch 78399 applies to the following samples: 1612145-01D, 1612145-02D, 1612145-03D, 1612145-04D, 1612145-05D

Sample ID	MB-78399	Batch ID:	78399	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_161220A	Analysis Date:	12/21/2016 8:45:00 AM	Prep Date:	12/20/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-78399	Batch ID:	78399	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_161220A	Analysis Date:	12/21/2016 8:45:00 AM	Prep Date:	12/20/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 757 10.0 745.6 0 102 90 113

Sample ID	1612145-01D-DUP	Batch ID:	78399	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_161220A	Analysis Date:	12/21/2016 8:45:00 AM	Prep Date:	12/20/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 1520 50.0 0 1475 3.33 5

Sample ID	1612198-01C-DUP	Batch ID:	78399	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_161220A	Analysis Date:	12/21/2016 8:45:00 AM	Prep Date:	12/20/2016				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 568 10.0 0 543.0 4.50 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

Case Narrative

Lab No: 20161249

This report contains the analytical results for the 5 sample(s) received under chain of custody by ESC Lab Sciences on 12/16/2016 11:25:26 AM. These samples are associated with your 1612145 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

L879376



Client : DHL Analytical, Inc.
 Client Project : 1612145
 Lab Number : 20161249
 Date Reported : 01/25/17
 Date Received : 12/16/16
 Page Number : 2 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20161249-01
Client ID : BMW-24
Date Sampled : 12/13/2016 1:10:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		2.95 +/- 0.849	1.43	pCi/l			
Radium-226	SM 7500 Ra B M*	0.596 +/- 0.264	0.270	pCi/l	01/07/17	01/10/17	AK
Radium-228	EPA 904*/9320*	2.35 +/- 0.585	1.16	pCi/l	01/13/17	01/23/17	JR

Lab ID : 20161249-02
Client ID : BMW-23
Date Sampled : 12/13/2016 2:10:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.88 +/- 0.717	0.922	pCi/l			
Radium-226	SM 7500 Ra B M*	0.605 +/- 0.225	0.218	pCi/l	01/07/17	01/10/17	AK
Radium-228	EPA 904*/9320*	1.27 +/- 0.492	0.704	pCi/l	01/13/17	01/23/17	JR

Lab ID : 20161249-03
Client ID : BMW-22
Date Sampled : 12/13/2016 3:05:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.65 +/- 0.815	1.24	pCi/l			
Radium-226	SM 7500 Ra B M*	0.633 +/- 0.209	0.191	pCi/l	01/07/17	01/10/17	AK
Radium-228	EPA 904*/9320*	1.02 +/- 0.606	1.05	pCi/l	01/13/17	01/23/17	JR

Lab ID : 20161249-04
Client ID : BMW-21
Date Sampled : 12/13/2016 4:00:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.271 +/- 0.728	1.21	pCi/l			
Radium-226	SM 7500 Ra B M*	0.232 +/- 0.170	0.213	pCi/l	01/07/17	01/10/17	AK
Radium-228	EPA 904*/9320*	0.039 +/- 0.558	1.00	pCi/l	01/13/17	01/23/17	JR

Client : DHL Analytical, Inc.
 Client Project : 1612145
 Lab Number : 20161249
 Date Reported : 01/25/17
 Date Received : 12/16/16
 Page Number : 3 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
Lab ID : 20161249-05							
Client ID : BMW-20							
Date Sampled : 12/13/2016 4:50:00 PM							
Matrix : NPW							

Radiochemical Analyses

Combined Radium		1.55 +/- 0.826	1.40	pCi/l			
Radium-226	SM 7500 Ra B M*	0.133 +/- 0.165	0.246	pCi/l	01/07/17	01/10/17	AK
Radium-228	EPA 904*/9320*	1.42 +/- 0.661	1.15	pCi/l	01/13/17	01/23/17	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	0.016	105.0			NC	0.688	108.0	111.0	1.7	R1177
Radium-228	0.421	85.6			NC	0.720	74.0	82.2	8.7	R3907

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: 1612145

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

Acct #: DHLRRTX

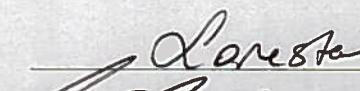
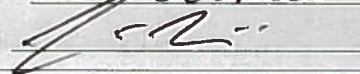
14-Dec-16

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
1	BMW-24	Aqueous	-01B	12/13/16 01:10 PM	1LHDPEHNO3	1				
	BMW-24	Aqueous	-01C	12/13/16 01:10 PM	500HDPEHNO3		1			
2	BMW-23	Aqueous	-02B	12/13/16 02:10 PM	1LHDPEHNO3	1				
	BMW-23	Aqueous	-02C	12/13/16 02:10 PM	500HDPEHNO3		1			
3	BMW-22	Aqueous	-03B	12/13/16 03:05 PM	1LHDPEHNO3	1				
	BMW-22	Aqueous	-03C	12/13/16 03:05 PM	500HDPEHNO3		1			
4	BMW-21	Aqueous	-04B	12/13/16 04:00 PM	1LHDPEHNO3	1				
	BMW-21	Aqueous	-04C	12/13/16 04:00 PM	500HDPEHNO3		1			
5	BMW-20	Aqueous	-05B	12/13/16 04:50 PM	1LHDPEHNO3	1				
	BMW-20	Aqueous	-05C	12/13/16 04:50 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

20161249
L879376

Relinquished by: 	Date/Time: 12/14/16 1730	Received by: 	Date/Time: 12/14/16 1730
Relinquished by: _____	Date/Time: _____	Received by: 	Date/Time: 12/16/16 1125

SAMPLE LOGIN

Date Received: 12/16/2016 11:25:

Lab Number: 20161249

Due: 1/17/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20161249-01 B	BMW-24	NPW	12/13/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161249-01 A	BMW-24	NPW	12/13/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161249-02 B	BMW-23	NPW	12/13/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161249-02 A	BMW-23	NPW	12/13/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161249-03 B	BMW-22	NPW	12/13/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161249-03 A	BMW-22	NPW	12/13/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161249-04 B	BMW-21	NPW	12/13/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161249-04 A	BMW-21	NPW	12/13/16	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*/9320*						
20161249-05 B	BMW-20	NPW	12/13/16	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20161249-05 A	BMW-20	NPW	12/13/16	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 ☒ Temperature: 4°C Ice ☐ Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken ☒ Chain of Custody Record ☒ Labels in Tact ☒ Radiation Survey Complete MA

Anomalies

Inspected By: [Signature] DATE 12/16/16

QA or Designee Review: Reginald Thomas DATE 12/16/16

Sample Custodian Review: Julianne Monardi DATE 12/16/16

Project Notes:

LUMINANT



February 28, 2017

Will Vienne
Pastor, Behling & Wheeler
2201 Double Creek Dr #4004
Round Rock, Texas 78664
TEL: (512) 671-3434
FAX (512) 671-3446
RE: MLSES CCR (A-1 Landfill)

Order No.: 1701222

Dear Will Vienne:

DHL Analytical, Inc. received 3 sample(s) on 1/25/2017 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,

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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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 73929

CHAIN-OF-CUSTODY

CLIENT: PBW 78664
ADDRESS: 2201 DOUBLE CREEK DR. STE. 4004 ROUND ROCK, TX
PHONE: (512) 671-3434 FAX/E-MAIL: (512) 671-3446
DATA REPORTED TO: Will Vienna
ADDITIONAL REPORT COPIES TO: SARA TAUBE

DATE: 1-23-17 PAGE 1 OF 1
PO #: DHL WORK ORDER #: 1701222
PROJECT LOCATION OR NAME: MUSE CCR (A-1 LANDFILL)
CLIENT PROJECT #: 5164 D COLLECTOR: GARRETT HARRIS

Authorize 5% surcharge for TRRP Report?

☐ Yes ☐ No

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR O=OTHER
L=LIQUID SO=SOLID
SE=SEDIMENT

PRESERVATION

of Containers

HCl

HNO₃

H₂SO₄ □ NaOH □

ICE

UNPRESERVED

ANALYSES

BTEX □ MTBE □ METHO 80211
TPH 1005 □ TPH 1006 □ HOLD 1006 □
GRO (METHOD 8015) □ VOC 624 □ VOC 8260/5035 □
VOC 8260 □ PAH 8270 □ HOLD PAH □ SVOC 625 □
8270 PEST □ 625 PEST □ 8082 PCB □ 8270 PCB □
8271 HERB □ 1 PHOS AMMONIA □
METALS 6020 □ METALS 2008 □ DIS. METALS □
PCB □ TK11 □
PH □ HEX CHROM □ ALKALINITY □
TCAP-SVOC □ ANIONS □
TCAP-METALS □ VOC □ PEST □ HERB □
RC1 □ FLASHPOINT □ DGAS □
TDS □ TSS □ % MOISTURE □ CYANIDE □
Attached CCR LIST

FIELD NOTES

BMW-26

01

1/23/17

1345

W

P

4

X

X

X

BMW-27

02

1/23/17

1245

W

P

4

X

X

X

BMW-28

03

1/23/17

1455

W

P

4

X

X

X

PER ATTACHED CCR LIST

RELINQUISHED BY: (Signature)

DATE/TIME
1/24/17/1600

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

TURN AROUND TIME

RUSH ☐ CALL FIRST
1 DAY ☐ CALL FIRST
2 DAY ☐
NORMAL ☒
OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: 04 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☐ HAND DELIVERED

☐ DHL DISPOSAL @ \$5.00 each

☐ Return

John Dupont

From: Sara Taube [Sara.Taube@pbwto.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
GARY
PAS
541

TEX
UNIT

HARRIS (903) 794-0625
OR, BEHLING & WHEELER, LLC
6 PLAZA DRIVE

ARKANA, TX 75503
ED STATES US

SHIP DATE: 24 JAN 17
ACTWGT: 30.00 LB
CAD: 2026420/INET3850
DIMS: 12x18x14 IN

BILL SENDER

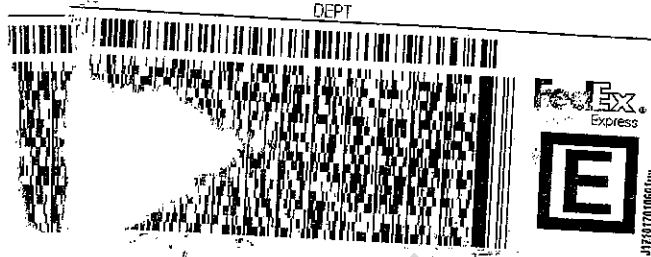
RECEIVING DEPARTMENT
DHL ANALYTICAL
2300 DOUBLE CREEK DRIVE

ROUND ROCK TX 78664

388-822

REF 5164D & 2101E

546J1199763C1

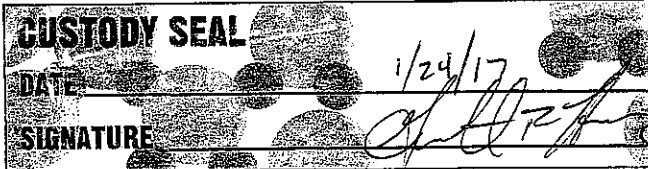
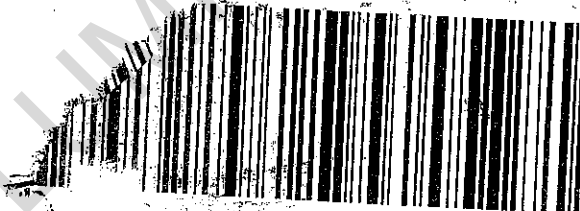


WED - 25 JAN 3:00P
STANDARD OVERNIGHT

480 8290

78664
AUS

TX-US



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 1/25/2017

Work Order Number 1701222

Received by JB

Checklist completed by:

Signature

1/25/2017

Date

Reviewed by

Initials

1/25/2017

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 ☐	0.6 °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? <u>no</u>		Checked by <u>CP</u>
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: MLSES CCR (A-1 Landfill)
Lab Order: 1701222

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 1/25/17. A total of 3 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 2/7/17 the matrix spike 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 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 2/7/17 the PDS recovery was out of control limits for three analytes. 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 performed on 2/1/17 the matrix spike and matrix spike duplicate recoveries were below control limits. This was due to matrix effect. 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. No further corrective actions were taken.

For Mercury analysis performed on 2/1/17 the PDS recovery was below control limits. This was due to matrix effect. This is flagged accordingly. The serial dilution was within control limits. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: MLSES CCR (A-1 Landfill)
Lab Order: 1701222**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1701222-01	BMW-26		01/23/17 01:45 PM	1/25/2017
1701222-02	BMW-27		01/23/17 12:45 PM	1/25/2017
1701222-03	BMW-28		01/23/17 02:55 PM	1/25/2017

LUMINANT

Lab Order: 1701222
Client: Pastor, Behling & Wheeler
Project: MLSES CCR (A-1 Landfill)

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1701222-01A	BMW-26	01/23/17 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/06/17 08:19 AM	79042
	BMW-26	01/23/17 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/06/17 08:19 AM	79042
	BMW-26	01/23/17 01:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/31/17 11:43 AM	78975
1701222-01D	BMW-26	01/23/17 01:45 PM	Aqueous	E300	Anion Preparation	01/26/17 10:02 AM	78907
	BMW-26	01/23/17 01:45 PM	Aqueous	E300	Anion Preparation	01/26/17 10:02 AM	78907
	BMW-26	01/23/17 01:45 PM	Aqueous	M4500-H+ B	pH Preparation	01/25/17 12:50 PM	78883
	BMW-26	01/23/17 01:45 PM	Aqueous	M2540C	TDS Preparation	01/30/17 08:42 AM	78944
1701222-02A	BMW-27	01/23/17 12:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/06/17 08:19 AM	79042
	BMW-27	01/23/17 12:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/06/17 08:19 AM	79042
	BMW-27	01/23/17 12:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/31/17 11:43 AM	78975
1701222-02D	BMW-27	01/23/17 12:45 PM	Aqueous	E300	Anion Preparation	01/26/17 10:02 AM	78907
	BMW-27	01/23/17 12:45 PM	Aqueous	E300	Anion Preparation	01/26/17 10:02 AM	78907
	BMW-27	01/23/17 12:45 PM	Aqueous	M4500-H+ B	pH Preparation	01/25/17 12:50 PM	78883
	BMW-27	01/23/17 12:45 PM	Aqueous	M2540C	TDS Preparation	01/30/17 08:42 AM	78944
1701222-03A	BMW-28	01/23/17 02:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/06/17 08:19 AM	79042
	BMW-28	01/23/17 02:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	02/06/17 08:19 AM	79042
	BMW-28	01/23/17 02:55 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	01/31/17 11:43 AM	78975
1701222-03D	BMW-28	01/23/17 02:55 PM	Aqueous	E300	Anion Preparation	01/26/17 10:02 AM	78907
	BMW-28	01/23/17 02:55 PM	Aqueous	E300	Anion Preparation	01/26/17 10:02 AM	78907
	BMW-28	01/23/17 02:55 PM	Aqueous	M4500-H+ B	pH Preparation	01/25/17 12:50 PM	78883
	BMW-28	01/23/17 02:55 PM	Aqueous	M2540C	TDS Preparation	01/30/17 08:42 AM	78944

Lab Order: 1701222
Client: Pastor, Behling & Wheeler
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1701222-01A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	78975	1	02/01/17 11:14 AM	CETAC2_HG_170201 C
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79042	1	02/07/17 01:29 PM	ICP-MS5_170207A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79042	10	02/07/17 02:07 PM	ICP-MS5_170207A
1701222-01D	BMW-26	Aqueous	E300	Anions by IC method - Water	78907	1	01/26/17 01:17 PM	IC4_170126A
	BMW-26	Aqueous	E300	Anions by IC method - Water	78907	10	01/26/17 06:27 PM	IC4_170126A
	BMW-26	Aqueous	M4500-H+ B	pH	78883	1	01/25/17 01:15 PM	TITRATOR_170125A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	78944	1	01/31/17 08:40 AM	WC_170130A
1701222-02A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	78975	1	02/01/17 11:16 AM	CETAC2_HG_170201 C
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79042	10	02/07/17 02:09 PM	ICP-MS5_170207A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79042	1	02/07/17 01:31 PM	ICP-MS5_170207A
1701222-02D	BMW-27	Aqueous	E300	Anions by IC method - Water	78907	10	01/26/17 06:43 PM	IC4_170126A
	BMW-27	Aqueous	E300	Anions by IC method - Water	78907	1	01/26/17 01:33 PM	IC4_170126A
	BMW-27	Aqueous	M4500-H+ B	pH	78883	1	01/25/17 01:17 PM	TITRATOR_170125A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	78944	1	01/31/17 08:40 AM	WC_170130A
1701222-03A	BMW-28	Aqueous	SW7470A	Mercury Total: Aqueous	78975	1	02/01/17 11:28 AM	CETAC2_HG_170201 C
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79042	1	02/07/17 01:33 PM	ICP-MS5_170207A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79042	10	02/07/17 02:11 PM	ICP-MS5_170207A
1701222-03D	BMW-28	Aqueous	E300	Anions by IC method - Water	78907	1	01/26/17 01:49 PM	IC4_170126A
	BMW-28	Aqueous	E300	Anions by IC method - Water	78907	10	01/26/17 07:15 PM	IC4_170126A
	BMW-28	Aqueous	M4500-H+ B	pH	78883	1	01/25/17 01:18 PM	TITRATOR_170125A
	BMW-28	Aqueous	M2540C	Total Dissolved Solids	78944	1	01/31/17 08:40 AM	WC_170130A

DHL Analytical, Inc.

Date: 28-Feb-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES CCR (A-1 Landfill)
Project No: 5164-D
Lab Order: 1701222

Client Sample ID: BMW-26
Lab ID: 1701222-01
Collection Date: 01/23/17 01:45 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	02/07/17 01:29 PM
Arsenic	0.0325	0.00200	0.00500		mg/L	1	02/07/17 01:29 PM
Barium	0.0446	0.00300	0.0100		mg/L	1	02/07/17 01:29 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	02/07/17 01:29 PM
Boron	0.478	0.0100	0.0300		mg/L	1	02/07/17 01:29 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	02/07/17 01:29 PM
Calcium	224	1.00	3.00		mg/L	10	02/07/17 02:07 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	02/07/17 01:29 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	02/07/17 01:29 PM
Lead	0.000594	0.000300	0.00100	J	mg/L	1	02/07/17 01:29 PM
Lithium	0.0977	0.00500	0.0100		mg/L	1	02/07/17 01:29 PM
Molybdenum	0.00350	0.00200	0.00500	J	mg/L	1	02/07/17 01:29 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	02/07/17 01:29 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	02/07/17 01:29 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	02/01/17 11:14 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	126	3.00	10.0		mg/L	10	01/26/17 06:27 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	01/26/17 01:17 PM
Sulfate	669	10.0	30.0		mg/L	10	01/26/17 06:27 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	6.96	0	0		pH Units@20°C	1	01/25/17 01:15 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1950	50.0	50.0		mg/L	1	01/31/17 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: 28-Feb-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES CCR (A-1 Landfill)
Project No: 5164-D
Lab Order: 1701222

Client Sample ID: BMW-27
Lab ID: 1701222-02
Collection Date: 01/23/17 12:45 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	02/07/17 01:31 PM
Arsenic	0.00845	0.00200	0.00500		mg/L	1	02/07/17 01:31 PM
Barium	0.0333	0.00300	0.0100		mg/L	1	02/07/17 01:31 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	02/07/17 01:31 PM
Boron	0.393	0.0100	0.0300		mg/L	1	02/07/17 01:31 PM
Cadmium	0.000707	0.000300	0.00100	J	mg/L	1	02/07/17 01:31 PM
Calcium	152	1.00	3.00		mg/L	10	02/07/17 02:09 PM
Chromium	0.00278	0.00200	0.00500	J	mg/L	1	02/07/17 01:31 PM
Cobalt	0.195	0.00300	0.00500		mg/L	1	02/07/17 01:31 PM
Lead	0.000323	0.000300	0.00100	J	mg/L	1	02/07/17 01:31 PM
Lithium	0.0484	0.00500	0.0100		mg/L	1	02/07/17 01:31 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	02/07/17 01:31 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	02/07/17 01:31 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	02/07/17 01:31 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	02/01/17 11:16 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	143	3.00	10.0		mg/L	10	01/26/17 06:43 PM
Fluoride	0.573	0.100	0.400		mg/L	1	01/26/17 01:33 PM
Sulfate	1280	10.0	30.0		mg/L	10	01/26/17 06:43 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	6.12	0	0		pH Units@18.4°C	1	01/25/17 01:17 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2260	50.0	50.0		mg/L	1	01/31/17 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: 28-Feb-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES CCR (A-1 Landfill)
Project No: 5164-D
Lab Order: 1701222

Client Sample ID: BMW-28
Lab ID: 1701222-03
Collection Date: 01/23/17 02:55 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	0.00101	0.000800	0.00250	J	mg/L	1	02/07/17 01:33 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	02/07/17 01:33 PM
Barium	0.0518	0.00300	0.0100		mg/L	1	02/07/17 01:33 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	02/07/17 01:33 PM
Boron	1.18	0.0100	0.0300		mg/L	1	02/07/17 01:33 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	02/07/17 01:33 PM
Calcium	221	1.00	3.00		mg/L	10	02/07/17 02:11 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	02/07/17 01:33 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	02/07/17 01:33 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	02/07/17 01:33 PM
Lithium	0.116	0.00500	0.0100		mg/L	1	02/07/17 01:33 PM
Molybdenum	0.00881	0.00200	0.00500		mg/L	1	02/07/17 01:33 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	02/07/17 01:33 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	02/07/17 01:33 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	02/01/17 11:28 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	122	3.00	10.0		mg/L	10	01/26/17 07:15 PM
Fluoride	0.104	0.100	0.400	J	mg/L	1	01/26/17 01:49 PM
Sulfate	1370	10.0	30.0		mg/L	10	01/26/17 07:15 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.40	0	0		pH Units@20.1°C	1	01/25/17 01:18 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2810	50.0	50.0		mg/L	1	01/31/17 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: 1701222

Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170201C

The QC data in batch 78975 applies to the following samples: 1701222-01A, 1701222-02A, 1701222-03A

Sample ID	MB-78975	Batch ID:	78975	TestNo:	SW7470A	Units:	mg/L				
SampType:	MBLK	Run ID:	CETAC2_HG_170201	Analysis Date:	2/1/2017 10:56:31 AM	Prep Date:	1/31/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-78975	Batch ID:	78975	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCS	Run ID:	CETAC2_HG_170201	Analysis Date:	2/1/2017 11:01:03 AM	Prep Date:	1/31/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00213 0.000200 0.00200 0 106 85 115

Sample ID	LCSD-78975	Batch ID:	78975	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCSD	Run ID:	CETAC2_HG_170201	Analysis Date:	2/1/2017 11:03:19 AM	Prep Date:	1/31/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00212 0.000200 0.00200 0 106 85 115 0.471 15

Sample ID	1701222-02A SD	Batch ID:	78975	TestNo:	SW7470A	Units:	mg/L				
SampType:	SD	Run ID:	CETAC2_HG_170201	Analysis Date:	2/1/2017 11:19:12 AM	Prep Date:	1/31/2017				
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	1701222-02A PDS	Batch ID:	78975	TestNo:	SW7470A	Units:	mg/L				
SampType:	PDS	Run ID:	CETAC2_HG_170201	Analysis Date:	2/1/2017 11:21:29 AM	Prep Date:	1/31/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00167 0.000200 0.00250 0 66.8 85 115 S

Sample ID	1701222-02A MS	Batch ID:	78975	TestNo:	SW7470A	Units:	mg/L				
SampType:	MS	Run ID:	CETAC2_HG_170201	Analysis Date:	2/1/2017 11:23:45 AM	Prep Date:	1/31/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00136 0.000200 0.00200 0 68.0 80 120 S

Sample ID	1701222-02A MSD	Batch ID:	78975	TestNo:	SW7470A	Units:	mg/L				
SampType:	MSD	Run ID:	CETAC2_HG_170201	Analysis Date:	2/1/2017 11:26:01 AM	Prep Date:	1/31/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00134 0.000200 0.00200 0 67.0 80 120 1.48 15 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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170201C

Sample ID	ICV-170201	Batch ID:	R90270	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_170201	Analysis Date:	2/1/2017 10:05:30 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00401	0.000200	0.00400	0	100	90	110			

Sample ID	CCV1-170201	Batch ID:	R90270			TestNo:	SW7470A			Units:	mg/L
SampType:	CCV	Run ID:	CETAC2_HG_170201			Analysis Date:	2/1/2017 10:51:57 AM			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	CCV2-170201			Batch ID:	R90270		TestNo:	SW7470A		Units:	mg/L	
SampType:	CCV			Run ID:	CETAC2_HG_170201		Analysis Date:	2/1/2017 11:37:25 AM		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			

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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170207A

The QC data in batch 79042 applies to the following samples: 1701222-01A, 1701222-02A, 1701222-03A

Sample ID	MB-79042		Batch ID:	79042		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS5_170207A		Analysis Date:	2/7/2017 12:20:00 PM		Prep Date:	2/6/2017	
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	LCS-79042			Batch ID:	79042		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS5_170207A		Analysis Date:	2/7/2017 12:21:00 PM		Prep Date:	2/6/2017	
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	0.207	0.00500	0.200	0	103	80	120
Barium	0.207	0.0100	0.200	0	104	80	120
Beryllium	0.204	0.00100	0.200	0	102	80	120
Boron	0.205	0.0300	0.200	0	102	80	120
Cadmium	0.208	0.00100	0.200	0	104	80	120
Calcium	5.11	0.300	5.00	0	102	80	120
Chromium	0.208	0.00500	0.200	0	104	80	120
Cobalt	0.210	0.00500	0.200	0	105	80	120
Lead	0.205	0.00100	0.200	0	103	80	120
Lithium	0.210	0.0100	0.200	0	105	80	120
Molybdenum	0.203	0.00500	0.200	0	101	80	120
Selenium	0.205	0.00500	0.200	0	103	80	120
Thallium	0.205	0.00150	0.200	0	102	80	120

Sample ID	LCSD-79042			Batch ID:	79042		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS5_170207A		Analysis Date:	2/7/2017 12:23:00 PM		Prep Date:	2/6/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.203	0.00250	0.200	0	101	80	120	0.254	15
Arsenic	0.208	0.00500	0.200	0	104	80	120	0.531	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170207A

Sample ID	LCSD-79042	Batch ID:	79042	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 12:23:00 PM	Prep Date:	2/6/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.207	0.0100	0.200	0	103	80	120	0.249	15	
Beryllium	0.206	0.00100	0.200	0	103	80	120	0.770	15	
Boron	0.198	0.0300	0.200	0	99.0	80	120	3.48	15	
Cadmium	0.210	0.00100	0.200	0	105	80	120	0.792	15	
Calcium	5.11	0.300	5.00	0	102	80	120	0.031	15	
Chromium	0.209	0.00500	0.200	0	104	80	120	0.251	15	
Cobalt	0.211	0.00500	0.200	0	106	80	120	0.554	15	
Lead	0.205	0.00100	0.200	0	103	80	120	0.096	15	
Lithium	0.209	0.0100	0.200	0	105	80	120	0.433	15	
Molybdenum	0.203	0.00500	0.200	0	102	80	120	0.413	15	
Selenium	0.206	0.00500	0.200	0	103	80	120	0.339	15	
Thallium	0.205	0.00150	0.200	0	103	80	120	0.149	15	

Sample ID	1702034-13A SD			Batch ID:	79042		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD			Run ID:	ICP-MS5_170207A		Analysis Date:	2/7/2017 12:27:00 PM		Prep Date:	2/6/2017	
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	0.00406				0	10	
Barium	0.155	0.0500	0	0.153				0.938	10	
Beryllium	<0.00150	0.00500	0	0				0	10	
Boron	2.45	0.150	0	2.25				8.76	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Calcium	355	1.50	0	356				0.380	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	0.00410	0.00500	0	0.00410				0.097	10	
Lithium	0.122	0.0500	0	0.120				1.91	10	
Molybdenum	<0.0100	0.0250	0	0.00444				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID	1702034-13A PDS			Batch ID:	79042			TestNo:	SW6020A			Units:	mg/L		
SampType:	PDS			Run ID:	ICP-MS5_170207A			Analysis Date:	2/7/2017 12:44:00 PM			Prep Date:	2/6/2017		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Antimony	0.187	0.00250	0.200	0	93.7	80	120			
Arsenic	0.199	0.00500	0.200	0.00406	97.3	80	120			
Barium	0.329	0.0100	0.200	0.153	87.8	80	120			
Beryllium	0.167	0.00100	0.200	0	83.3	80	120			
Boron	2.25	0.0300	0.200	2.25	3.69	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170207A

Sample ID	1702034-13A PDS	Batch ID:	79042	TestNo:	SW6020A	Units:	mg/L		
SampType:	PDS	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 12:44:00 PM	Prep Date:	2/6/2017		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Cadmium	0.179	0.00100	0.200	0	89.4	80	120		
Calcium	346	0.300	5.00	356	-195	80	120		S
Chromium	0.186	0.00500	0.200	0	93.1	80	120		
Cobalt	0.186	0.00500	0.200	0	92.9	80	120		
Lead	0.198	0.00100	0.200	0.00410	97.1	80	120		
Lithium	0.264	0.0100	0.200	0.120	72.2	80	120		S
Molybdenum	0.192	0.00500	0.200	0.00444	93.7	80	120		
Selenium	0.194	0.00500	0.200	0	97.2	80	120		
Thallium	0.195	0.00150	0.200	0	97.5	80	120		

Sample ID	1702034-13A MS	Batch ID:	79042	TestNo:	SW6020A	Units:	mg/L		
SampType:	MS	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 12:46:00 PM	Prep Date:	2/6/2017		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Antimony	0.194	0.00250	0.200	0	97.1	80	120		
Arsenic	0.206	0.00500	0.200	0.00406	101	80	120		
Barium	0.343	0.0100	0.200	0.153	94.9	80	120		
Beryllium	0.168	0.00100	0.200	0	84.2	80	120		
Boron	2.38	0.0300	0.200	2.25	65.8	80	120		S
Cadmium	0.184	0.00100	0.200	0	91.8	80	120		
Calcium	379	0.300	5.00	356	455	80	120		S
Chromium	0.189	0.00500	0.200	0	94.3	80	120		
Cobalt	0.192	0.00500	0.200	0	96.0	80	120		
Lead	0.205	0.00100	0.200	0.00410	100	80	120		
Lithium	0.272	0.0100	0.200	0.120	76.2	80	120		S
Molybdenum	0.203	0.00500	0.200	0.00444	99.4	80	120		
Selenium	0.206	0.00500	0.200	0	103	80	120		
Thallium	0.201	0.00150	0.200	0	101	80	120		

Sample ID	1702034-13A MSD	Batch ID:	79042	TestNo:	SW6020A	Units:	mg/L		
SampType:	MSD	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 12:48:00 PM	Prep Date:	2/6/2017		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Antimony	0.195	0.00250	0.200	0	97.4	80	120	0.313	15
Arsenic	0.203	0.00500	0.200	0.00406	99.6	80	120	1.49	15
Barium	0.341	0.0100	0.200	0.153	94.1	80	120	0.479	15
Beryllium	0.168	0.00100	0.200	0	83.8	80	120	0.464	15
Boron	2.36	0.0300	0.200	2.25	58.3	80	120	0.635	15 S
Cadmium	0.186	0.00100	0.200	0	92.8	80	120	1.05	15
Calcium	378	0.300	5.00	356	438	80	120	0.227	15 S
Chromium	0.188	0.00500	0.200	0	93.8	80	120	0.466	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170207A

Sample ID	1702034-13A MSD	Batch ID:	79042	TestNo:	SW6020A	Units:	mg/L				
SampType:	MSD	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 12:48:00 PM	Prep Date:	2/6/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Cobalt		0.191	0.00500	0.200	0	95.3	80	120	0.715	15	S
Lead		0.203	0.00100	0.200	0.00410	99.5	80	120	0.769	15	
Lithium		0.274	0.0100	0.200	0.120	77.1	80	120	0.638	15	
Molybdenum		0.203	0.00500	0.200	0.00444	99.3	80	120	0.118	15	
Selenium		0.203	0.00500	0.200	0	101	80	120	1.42	15	
Thallium		0.200	0.00150	0.200	0	100	80	120	0.642	15	

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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170207A

Sample ID	ICV-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 9:59:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.0985	0.00250	0.100	0	98.5	90	110			
Arsenic	0.102	0.00500	0.100	0	102	90	110			
Barium	0.100	0.0100	0.100	0	100	90	110			
Beryllium	0.0952	0.00100	0.100	0	95.2	90	110			
Boron	0.105	0.0300	0.100	0	105	90	110			
Cadmium	0.101	0.00100	0.100	0	101	90	110			
Calcium	2.59	0.300	2.50	0	104	90	110			
Chromium	0.102	0.00500	0.100	0	102	90	110			
Cobalt	0.103	0.00500	0.100	0	103	90	110			
Lead	0.0986	0.00100	0.100	0	98.6	90	110			
Lithium	0.0941	0.0100	0.100	0	94.1	90	110			
Molybdenum	0.0954	0.00500	0.100	0	95.4	90	110			
Selenium	0.100	0.00500	0.100	0	100	90	110			
Thallium	0.0971	0.00150	0.100	0	97.1	90	110			

Sample ID	LCVL-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 10:02:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00193	0.00250	0.00200	0	96.4	70	130			
Arsenic	0.00504	0.00500	0.00500	0	101	70	130			
Barium	0.00494	0.0100	0.00500	0	98.7	70	130			
Beryllium	0.000950	0.00100	0.00100	0	95.0	70	130			
Boron	0.0224	0.0300	0.0200	0	112	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.0966	0.300	0.100	0	96.6	70	130			
Chromium	0.00510	0.00500	0.00500	0	102	70	130			
Cobalt	0.00516	0.00500	0.00500	0	103	70	130			
Lead	0.00107	0.00100	0.00100	0	107	70	130			
Lithium	0.0100	0.0100	0.0100	0	100	70	130			
Molybdenum	0.00493	0.00500	0.00500	0	98.6	70	130			
Selenium	0.00505	0.00500	0.00500	0	101	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID	CCV4-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 12:12:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.196	0.00250	0.200	0	98.0	90	110			
Arsenic	0.200	0.00500	0.200	0	100	90	110			
Barium	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170207A

Sample ID	CCV4-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 12:12:00 PM	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			
Boron	0.199	0.0300	0.200	0	99.7	90	110			
Cadmium	0.203	0.00100	0.200	0	102	90	110			
Calcium	4.96	0.300	5.00	0	99.1	90	110			
Chromium	0.203	0.00500	0.200	0	101	90	110			
Cobalt	0.205	0.00500	0.200	0	103	90	110			
Lead	0.200	0.00100	0.200	0	100	90	110			
Lithium	0.204	0.0100	0.200	0	102	90	110			
Molybdenum	0.197	0.00500	0.200	0	98.7	90	110			
Selenium	0.199	0.00500	0.200	0	99.5	90	110			
Thallium	0.200	0.00150	0.200	0	100	90	110			

Sample ID	LCVL4-170207		Batch ID:	R90363		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCVL		Run ID:	ICP-MS5_170207A		Analysis Date:	2/7/2017 12:16:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00199	0.00250	0.00200	0	99.2	70	130			
Arsenic	0.00502	0.00500	0.00500	0	100	70	130			
Barium	0.00493	0.0100	0.00500	0	98.5	70	130			
Beryllium	0.000955	0.00100	0.00100	0	95.5	70	130			
Boron	0.0252	0.0300	0.0200	0	126	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	0.00526	0.00500	0.00500	0	105	70	130			
Cobalt	0.00512	0.00500	0.00500	0	102	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.00984	0.0100	0.0100	0	98.4	70	130			
Molybdenum	0.00482	0.00500	0.00500	0	96.5	70	130			
Selenium	0.00502	0.00500	0.00500	0	100	70	130			
Thallium	0.000986	0.00150	0.00100	0	98.6	70	130			

Sample ID	CCV5-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 12:52:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.187	0.00250	0.200	0	93.5	90	110			
Arsenic	0.198	0.00500	0.200	0	99.2	90	110			
Barium	0.190	0.0100	0.200	0	95.0	90	110			
Beryllium	0.184	0.00100	0.200	0	92.0	90	110			
Boron	0.215	0.0300	0.200	0	107	90	110			
Cadmium	0.190	0.00100	0.200	0	95.0	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170207A

Sample ID	CCV5-170207		Batch ID:	R90363		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS5_170207A		Analysis Date:	2/7/2017 12:52:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	5.17	0.300	5.00	0	103	90	110			
Chromium	0.193	0.00500	0.200	0	96.3	90	110			
Cobalt	0.200	0.00500	0.200	0	100	90	110			
Lead	0.194	0.00100	0.200	0	96.9	90	110			
Lithium	0.187	0.0100	0.200	0	93.4	90	110			
Molybdenum	0.186	0.00500	0.200	0	92.9	90	110			
Selenium	0.203	0.00500	0.200	0	101	90	110			
Thallium	0.193	0.00150	0.200	0	96.3	90	110			

Sample ID	LCVL5-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 1:21:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00190	0.00250	0.00200	0	95.2	70	130			
Arsenic	0.00515	0.00500	0.00500	0	103	70	130			
Barium	0.00514	0.0100	0.00500	0	103	70	130			
Beryllium	0.00126	0.00100	0.00100	0	126	70	130			
Boron	0.0232	0.0300	0.0200	0	116	70	130			
Cadmium	0.000994	0.00100	0.00100	0	99.4	70	130			
Calcium	0.0802	0.300	0.100	0	80.2	70	130			
Chromium	0.00510	0.00500	0.00500	0	102	70	130			
Cobalt	0.00510	0.00500	0.00500	0	102	70	130			
Lead	0.000957	0.00100	0.00100	0	95.7	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	0.00503	0.00500	0.00500	0	101	70	130			
Thallium	0.000960	0.00150	0.00100	0	96.0	70	130			

Sample ID	CCV6-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 1:40:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.191	0.00250	0.200	0	95.7	90	110			
Arsenic	0.197	0.00500	0.200	0	98.5	90	110			
Barium	0.197	0.0100	0.200	0	98.4	90	110			
Beryllium	0.197	0.00100	0.200	0	98.5	90	110			
Boron	0.217	0.0300	0.200	0	108	90	110			
Cadmium	0.195	0.00100	0.200	0	97.5	90	110			
Calcium	4.97	0.300	5.00	0	99.4	90	110			
Chromium	0.200	0.00500	0.200	0	100	90	110			
Cobalt	0.202	0.00500	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170207A

Sample ID	CCV6-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 1:40:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lead	0.196	0.00100	0.200	0	98.2	90	110			
Lithium	0.204	0.0100	0.200	0	102	90	110			
Molybdenum	0.189	0.00500	0.200	0	94.4	90	110			
Selenium	0.198	0.00500	0.200	0	98.9	90	110			
Thallium	0.209	0.00150	0.200	0	104	90	110			

Sample ID	LCVL6-170207		Batch ID:	R90363		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCVL		Run ID:	ICP-MS5_170207A		Analysis Date:	2/7/2017 2:01:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00188	0.00250	0.00200	0	94.0	70	130			
Arsenic	0.00506	0.00500	0.00500	0	101	70	130			
Barium	0.00484	0.0100	0.00500	0	96.8	70	130			
Beryllium	0.000992	0.00100	0.00100	0	99.2	70	130			
Boron	0.0218	0.0300	0.0200	0	109	70	130			
Cadmium	0.000957	0.00100	0.00100	0	95.7	70	130			
Calcium	0.0821	0.300	0.100	0	82.1	70	130			
Chromium	0.00518	0.00500	0.00500	0	104	70	130			
Cobalt	0.00508	0.00500	0.00500	0	102	70	130			
Lead	0.000953	0.00100	0.00100	0	95.3	70	130			
Lithium	0.0110	0.0100	0.0100	0	110	70	130			
Molybdenum	0.00475	0.00500	0.00500	0	95.0	70	130			
Selenium	0.00469	0.00500	0.00500	0	93.8	70	130			
Thallium	0.000951	0.00150	0.00100	0	95.1	70	130			

Sample ID	CCV7-170207	Batch ID:	R90363	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170207A	Analysis Date:	2/7/2017 2:12:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.79	0.300	5.00	0	95.8	90	110			

Sample ID	LCVL7-170207			Batch ID:	R90363		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCVL			Run ID:	ICP-MS5_170207A		Analysis Date:	2/7/2017 2:16:00 PM		Prep Date:		
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.0936	0.300	0.100	0	93.6	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_170126A

The QC data in batch 78907 applies to the following samples: 1701222-01D, 1701222-02D, 1701222-03D

Sample ID	MB-78907	Batch ID:	78907	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 10:46:16 AM	Prep Date:	1/26/2017			
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	LCS-78907	Batch ID:	78907	TestNo:	E300	Units:	mg/L			
SampType:	LCS	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 11:02:16 AM	Prep Date:	1/26/2017			
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	4.01	0.400	4.000	0	100	90	110			
Sulfate	30.2	3.00	30.00	0	101	90	110			

Sample ID	LCSD-78907	Batch ID:	78907	TestNo:	E300	Units:	mg/L			
SampType:	LCSD	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 11:18:16 AM	Prep Date:	1/26/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.1	1.00	10.00	0	101	90	110	0.681	20	
Fluoride	4.04	0.400	4.000	0	101	90	110	0.569	20	
Sulfate	30.4	3.00	30.00	0	101	90	110	0.822	20	

Sample ID	1701241-01CMS	Batch ID:	78907	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 4:35:26 PM	Prep Date:	1/26/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	287	10.0	200.0	68.51	109	90	110			
Fluoride	211	4.00	200.0	1.028	105	90	110			
Sulfate	356	30.0	200.0	138.2	109	90	110			

Sample ID	1701241-01CMSD	Batch ID:	78907	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 4:51:26 PM	Prep Date:	1/26/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	285	10.0	200.0	68.51	108	90	110	0.607	20	
Fluoride	211	4.00	200.0	1.028	105	90	110	0.310	20	
Sulfate	356	30.0	200.0	138.2	109	90	110	0.094	20	

Sample ID	1701218-01DMS	Batch ID:	78907	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 5:55:26 PM	Prep Date:	1/26/2017			
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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_170126A

Sample ID	1701218-01DMS	Batch ID:	78907	TestNo:	E300	Units:	mg/L		
SampType:	MS	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 5:55:26 PM	Prep Date:	1/26/2017		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual
Chloride	343	10.0	200.0	124.9	109	90	110		
Fluoride	212	4.00	200.0	1.074	105	90	110		
Sulfate	211	30.0	200.0	0	106	90	110		

Sample ID	1701218-01DMSD	Batch ID:	78907	TestNo:	E300	Units:	mg/L		
SampType:	MSD	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 6:11:26 PM	Prep Date:	1/26/2017		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual
Chloride	343	10.0	200.0	124.9	109	90	110	0.009	20
Fluoride	212	4.00	200.0	1.074	106	90	110	0.149	20
Sulfate	212	30.0	200.0	0	106	90	110	0.511	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_170126A

Sample ID	ICV-170126	Batch ID:	R90191	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 10:01:58 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.5	1.00	25.00	0	102	90	110			
Fluoride	10.0	0.400	10.00	0	100	90	110			
Sulfate	76.3	3.00	75.00	0	102	90	110			

Sample ID	CCV1-170126	Batch ID:	R90191	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 2:37:56 PM	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	4.14	0.400	4.000	0	103	90	110			
Sulfate	31.7	3.00	30.00	0	106	90	110			

Sample ID	CCV2-170126	Batch ID:	R90191	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_170126A	Analysis Date:	1/26/2017 8:03:26 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.7	1.00	10.00	0	107	90	110			
Fluoride	4.25	0.400	4.000	0	106	90	110			
Sulfate	32.0	3.00	30.00	0	107	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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170125A

The QC data in batch 78883 applies to the following samples: 1701222-01D, 1701222-02D, 1701222-03D

Sample ID	1701214-01C_DUP	Batch ID:	78883	TestNo:	M4500-H+ B	Units:	pH Units@21.5°C
SampType:	DUP	Run ID:	TITRATOR_170125A	Analysis Date:	1/25/2017 9:46:00 AM	Prep Date:	1/25/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		8.67	0	0	8.670		0 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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170125A

Sample ID	ICV-170125	Batch ID:	R90149	TestNo:	M4500-H+ B	Units:	pH Units@21.8°C				
SampType:	ICV	Run ID:	TITRATOR_170125A	Analysis Date:	1/25/2017 8:48:00 AM	Prep Date:	1/25/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH		9.94	0	10.00	0	99.4	99	101			

Sample ID	CCV1-170125	Batch ID:	R90149		TestNo:	M4500-H+ B		Units:	pH Units@21.7°C		
SampType:	CCV	Run ID:	TITRATOR_170125A		Analysis Date:	1/25/2017 9:47:00 AM		Prep Date:	1/25/2017		
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	CCV2-170125	Batch ID:	R90149	TestNo:	M4500-H+ B	Units:	pH Units@21.7°C				
SampType:	CCV	Run ID:	TITRATOR_170125A	Analysis Date:	1/25/2017 12:44:00 PM	Prep Date:	1/25/2017				
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	CCV3-170125	Batch ID:	R90149	TestNo:	M4500-H+ B	Units:	pH Units@21.7°C				
SampType:	CCV	Run ID:	TITRATOR_170125A	Analysis Date:	1/25/2017 1:19:00 PM	Prep Date:	1/25/2017				
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			

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: 1701222
Project: MLSES CCR (A-1 Landfill)

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170130A

The QC data in batch 78944 applies to the following samples: 1701222-01D, 1701222-02D, 1701222-03D

Sample ID	MB-78944	Batch ID:	78944	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_170130A	Analysis Date:	1/31/2017 8:40:00 AM	Prep Date:	1/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-78944	Batch ID:	78944	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_170130A	Analysis Date:	1/31/2017 8:40:00 AM	Prep Date:	1/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 747 10.0 745.6 0 100 90 113

Sample ID	1701213-01C-DUP	Batch ID:	78944	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170130A	Analysis Date:	1/31/2017 8:40:00 AM	Prep Date:	1/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 8580 200 0 8940 4.11 5

Sample ID	1701249-06C-DUP	Batch ID:	78944	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170130A	Analysis Date:	1/31/2017 8:40:00 AM	Prep Date:	1/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 292 10.0 0 305.0 4.36 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: 20170062

This report contains the analytical results for the 3 sample(s) received under chain of custody by ESC Lab Sciences on 1/27/2017 1:59:02 PM. These samples are associated with your 1701222 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

L887049



Client : DHL Analytical, Inc.
 Client Project : 1701222
 Lab Number : 20170062
 Date Reported : 02/23/17
 Date Received : 01/27/17
 Page Number : 2 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20170062-01
 Client ID : BMW-26
 Date Sampled : 1/23/2017 1:45:00 PM
 Matrix : NPW

Radiochemical Analyses

Combined Radium	1.29 +/- 0.698	0.845	pCi/l				
Radium-226 SM 7500 Ra B M*	0.351 +/- 0.253	0.334	pCi/l		02/15/17	02/18/17	SD
Radium-228 EPA 904*/9320*	0.936 +/- 0.445	0.511	pCi/l		02/07/17	02/13/17	JR

Lab ID : 20170062-02
 Client ID : BMW-27
 Date Sampled : 1/23/2017 12:45:00 PM
 Matrix : NPW

Radiochemical Analyses

Combined Radium	1.30 +/- 0.611	0.659	pCi/l				
Radium-226 SM 7500 Ra B M*	0.369 +/- 0.177	0.161	pCi/l		02/15/17	02/19/17	SD
Radium-228 EPA 904*/9320*	0.934 +/- 0.434	0.498	pCi/l		02/07/17	02/13/17	JR

Lab ID : 20170062-03
 Client ID : BMW-28
 Date Sampled : 1/23/2017 2:55:00 PM
 Matrix : NPW

Radiochemical Analyses

Combined Radium	1.75 +/- 0.585	0.623	pCi/l				
Radium-226 SM 7500 Ra B M*	0.626 +/- 0.218	0.200	pCi/l		02/15/17	02/19/17	SD
Radium-228 EPA 904*/9320*	1.12 +/- 0.367	0.423	pCi/l		02/07/17	02/13/17	JR



Client : DHL Analytical, Inc.
Client Project : 1701222
Lab Number : 20170062
Date Reported : 02/23/17
Date Received : 01/27/17
Page Number : 3 of 3

QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.010	106.0			NC	1.080	99.2	102.0	2.9	R1192
Radium-228	-0.017	110.0			NC	1.660	91.1	101.0	10.0	R3920

Lab Approval:

Ron Eidson
Director of Radiochemistry

LUMINANT

SAMPLE LOGIN

Date Received: 1/27/2017 1:59:02

Lab Number: 20170062

Due: 2/24/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170062-01 B	BMW-26	NPW	01/23/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170062-01 A	BMW-26	NPW	01/23/17	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20170062-02 B	BMW-27	NPW	01/23/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170062-02 A	BMW-27	NPW	01/23/17	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20170062-03 B	BMW-28	NPW	01/23/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170062-03 A	BMW-28	NPW	01/23/17	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 ☒ Temperature: Amb Ice ☒ Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken ☒ Chain of Custody Record ☒ Labels in Tact ☒ Radiation Survey Complete ☒
 Anomalies no time on containers for -02.

Inspected By: [Signature] DATE 1/27/17

QA or Designee Review: [Signature] DATE 01/27/17

Sample Custodian Review: [Signature] DATE 1/27/17

Project Notes:

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

TEL: (512) 388-8222 FAX: (512) 388-8229
Work Order: 1701222

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory
311 North Aspen
Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515
FAX:
Acct #: DHLRRTX

25-Jan-17

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B				
BMW-26	Aqueous	-01B	01/23/17 01:45 PM	1LHDPEHNO3	1					
BMW-26	Aqueous	-01C	01/23/17 01:45 PM	500HDPEHNO3		1				
BMW-27	Aqueous	-02B	01/23/17 12:45 PM	1LHDPEHNO3	1					
BMW-27	Aqueous	-02C	01/23/17 12:45 PM	500HDPEHNO3		1				
BMW-28	Aqueous	-03B	01/23/17 02:55 PM	1LHDPEHNO3	1					
BMW-28	Aqueous	-03C	01/23/17 02:55 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

20170062
L 887049

		Date/Time			Date/Time
Relinquished by:	<i>Amra</i>	1/25/17 17:30	Received by:	<i>250</i>	1/25/17 17:30
Relinquished by:			Received by:	<i>22</i>	1/27/17 13:59



March 28, 2017

Will Vienne
Pastor, Behling & Wheeler
2201 Double Creek Dr #4004
Round Rock, Texas 78664
TEL: (512) 671-3434
FAX (512) 671-3446
RE: MLSES - A-1 Landfill

Order No.: 1702267

Dear Will Vienne:

DHL Analytical, Inc. received 3 sample(s) on 2/27/2017 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,

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: T104704211-17-18



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Subcontract Report 1702267	40



N^o 74417

CHAIN-OF-CUSTODY

CLIENT: PBW
ADDRESS: 2201 DOUBLE CREEK DR ROUND ROCK, TX 78664
PHONE: 512-~~777~~671-3434 FAX/E-MAIL: 512-671-3446
DATA REPORTED TO: WILL VIENNE
ADDITIONAL REPORT COPIES TO:

DATE: 2-24-17 PAGE 1 OF 1
PO #: 5164-F DHL WORK ORDER #: 1702267
PROJECT LOCATION OR NAME: MLSES- A-1 LANDFILL
CLIENT PROJECT #: 5164-F COLLECTOR: J. BEAYTON

[illegible]

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
<i>[Signature]</i>	2-24-17 1700	<i>Fedex</i>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
<i>Fedex</i>	2/27/17 10:15	<i>[Signature]</i>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

TURN AROUND TIME
 RUSH ☐ CALL FIRST
 1 DAY ☐ CALL FIRST
 2 DAY ☐
 NORMAL ☒
 OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.5 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@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 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 BRAYTON

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 24FEB17
ACTWGT: 37.70 LB
CAD: 6991003/SSFO1722
DIMS: 23x13x14 IN

BILL THIRD PARTY

TO DHL
DHL
2300 DOUBLE CREEK DR

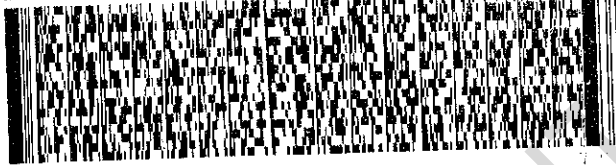
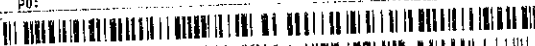
ROUND ROCK TX 78664

(000) 000-0000

REF:

INU:
PO:

DEPT:



FedEx
Express



07111702140100

TRK# 7857 1959 8226
[0201]

SATURDAY 12:00P
PRIORITY OVERNIGHT

XO BSMA

AHS
78664
AUS

TX-US



N

RT

D

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 2/27/2017

Work Order Number 1702267

Received by JT

Checklist completed by: [Signature] 2/27/2017
Signature Date

Reviewed by [Signature] 2/27/2017
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 ☐	1.5 °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? <u>NO</u>		Checked by <u>[Signature]</u>
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: MLSES - A-1 Landfill
Lab Order: 1702267

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 2/27/17. A total of 3 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 3/2/17 and 3/3/17 the matrix spike and PDS had low responses for the internal standard Bismuth. The associated analyte (Lead) was within control limits. No further corrective actions were taken.

For Metals analysis performed on 3/2/17 and 3/3/17 the matrix spike and matrix spike duplicate recoveries were out of control limits for a total of nine analytes. In addition, the matrix spike and matrix spike duplicate had the RPD above control limits for Antimony and Molybdenum. 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 3/3/17 the RPD for the serial dilution was slightly above control limits for Arsenic and Selenium. These are flagged accordingly. The PDS was within control limits for these analytes. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 3/2/17 the matrix spikes and matrix spike duplicate recoveries (1702267-01 MS/MSD & 1702267-02 MS/MSD) were slightly below control limits for Chloride. These are flagged accordingly in the QC summary report. The samples selected for the matrix spikes and matrix spike duplicates were from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A-1 Landfill
Lab Order: 1702267**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1702267-01	BMW-26		02/23/17 12:15 PM	2/27/2017
1702267-02	BMW-27		02/23/17 01:15 PM	2/27/2017
1702267-03	BMW-28		02/23/17 02:20 PM	2/27/2017

LUMINANT

Lab Order: 1702267
Client: Pastor, Behling & Wheeler
Project: MLSES - A-1 Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1702267-01A	BMW-26	02/23/17 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-26	02/23/17 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-26	02/23/17 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-26	02/23/17 12:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/03/17 08:46 AM	79420
1702267-01D	BMW-26	02/23/17 12:15 PM	Aqueous	E300	Anion Preparation	03/02/17 08:25 AM	79398
	BMW-26	02/23/17 12:15 PM	Aqueous	M4500-H+ B	pH Preparation	02/27/17 01:06 PM	79353
	BMW-26	02/23/17 12:15 PM	Aqueous	M2540C	TDS Preparation	03/01/17 03:38 PM	79394
1702267-02A	BMW-27	02/23/17 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-27	02/23/17 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-27	02/23/17 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-27	02/23/17 01:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/03/17 08:46 AM	79420
1702267-02D	BMW-27	02/23/17 01:15 PM	Aqueous	E300	Anion Preparation	03/02/17 08:25 AM	79398
	BMW-27	02/23/17 01:15 PM	Aqueous	M4500-H+ B	pH Preparation	02/27/17 01:06 PM	79353
	BMW-27	02/23/17 01:15 PM	Aqueous	M2540C	TDS Preparation	03/01/17 03:38 PM	79394
1702267-03A	BMW-28	02/23/17 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-28	02/23/17 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-28	02/23/17 02:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/01/17 09:51 AM	79390
	BMW-28	02/23/17 02:20 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/03/17 08:46 AM	79420
1702267-03D	BMW-28	02/23/17 02:20 PM	Aqueous	E300	Anion Preparation	03/02/17 08:25 AM	79398
	BMW-28	02/23/17 02:20 PM	Aqueous	M4500-H+ B	pH Preparation	02/27/17 01:06 PM	79353
	BMW-28	02/23/17 02:20 PM	Aqueous	M2540C	TDS Preparation	03/02/17 03:22 PM	79412

Lab Order: 1702267
Client: Pastor, Behling & Wheeler
Project: MLSES - A-1 Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1702267-01A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	79420	1	03/07/17 11:11 AM	CETAC2_HG_170307 C
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	1	03/02/17 12:46 PM	ICP-MS4_170302A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	10	03/03/17 01:52 PM	ICP-MS4_170303B
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	1	03/03/17 01:54 PM	ICP-MS4_170303B
1702267-01D	BMW-26	Aqueous	E300	Anions by IC method - Water	79398	1	03/02/17 01:13 PM	IC2_170302A
	BMW-26	Aqueous	M4500-H+ B	pH	79353	1	02/27/17 02:15 PM	TITRATOR_170227A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	79394	1	03/02/17 08:40 AM	WC_170301B
1702267-02A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	79420	1	03/07/17 11:13 AM	CETAC2_HG_170307 C
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	1	03/03/17 01:58 PM	ICP-MS4_170303B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	1	03/02/17 12:48 PM	ICP-MS4_170302A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	10	03/03/17 01:56 PM	ICP-MS4_170303B
1702267-02D	BMW-27	Aqueous	E300	Anions by IC method - Water	79398	1	03/02/17 01:28 PM	IC2_170302A
	BMW-27	Aqueous	M4500-H+ B	pH	79353	1	02/27/17 02:18 PM	TITRATOR_170227A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	79394	1	03/02/17 08:40 AM	WC_170301B
1702267-03A	BMW-28	Aqueous	SW7470A	Mercury Total: Aqueous	79420	1	03/07/17 11:24 AM	CETAC2_HG_170307 C
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	1	03/02/17 12:50 PM	ICP-MS4_170302A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	10	03/03/17 02:00 PM	ICP-MS4_170303B
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79390	1	03/03/17 02:19 PM	ICP-MS4_170303B
1702267-03D	BMW-28	Aqueous	E300	Anions by IC method - Water	79398	1	03/02/17 01:42 PM	IC2_170302A
	BMW-28	Aqueous	M4500-H+ B	pH	79353	1	02/27/17 02:20 PM	TITRATOR_170227A
	BMW-28	Aqueous	M2540C	Total Dissolved Solids	79412	1	03/03/17 08:40 AM	WC_170302B

DHL Analytical, Inc.

Date: 28-Mar-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A-1 Landfill
Project No: 5164-F
Lab Order: 1702267

Client Sample ID: BMW-26
Lab ID: 1702267-01
Collection Date: 02/23/17 12:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/03/17 01:54 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:46 PM
Barium	0.0705	0.00300	0.0100		mg/L	1	03/02/17 12:46 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/02/17 12:46 PM
Boron	0.0683	0.0100	0.0300		mg/L	1	03/03/17 01:54 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/02/17 12:46 PM
Calcium	52.0	1.00	3.00		mg/L	10	03/03/17 01:52 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:46 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/02/17 12:46 PM
Lead	0.000726	0.000300	0.00100	J	mg/L	1	03/02/17 12:46 PM
Lithium	0.00520	0.00500	0.0100	J	mg/L	1	03/02/17 12:46 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:46 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:46 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/02/17 12:46 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/17 11:11 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	23.9	0.300	1.00		mg/L	1	03/02/17 01:13 PM
Fluoride	0.106	0.100	0.400	J	mg/L	1	03/02/17 01:13 PM
Sulfate	20.4	1.00	3.00		mg/L	1	03/02/17 01:13 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	8.13	0	0		pH Units@18.3°C	1	02/27/17 02:15 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	209	10.0	10.0		mg/L	1	03/02/17 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: 28-Mar-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A-1 Landfill
Project No: 5164-F
Lab Order: 1702267

Client Sample ID: BMW-27
Lab ID: 1702267-02
Collection Date: 02/23/17 01:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/03/17 01:58 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:48 PM
Barium	0.0704	0.00300	0.0100		mg/L	1	03/02/17 12:48 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/02/17 12:48 PM
Boron	0.0832	0.0100	0.0300		mg/L	1	03/03/17 01:58 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/02/17 12:48 PM
Calcium	52.4	1.00	3.00		mg/L	10	03/03/17 01:56 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:48 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/02/17 12:48 PM
Lead	0.000736	0.000300	0.00100	J	mg/L	1	03/02/17 12:48 PM
Lithium	<0.00500	0.00500	0.0100		mg/L	1	03/02/17 12:48 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:48 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:48 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/02/17 12:48 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/17 11:13 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	24.0	0.300	1.00		mg/L	1	03/02/17 01:28 PM
Fluoride	0.252	0.100	0.400	J	mg/L	1	03/02/17 01:28 PM
Sulfate	20.6	1.00	3.00		mg/L	1	03/02/17 01:28 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	8.18	0	0		pH Units@18.4°C	1	02/27/17 02:18 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	239	10.0	10.0		mg/L	1	03/02/17 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: 28-Mar-17

CLIENT: Pastor, Behling & Wheeler
Project: MLSES - A-1 Landfill
Project No: 5164-F
Lab Order: 1702267

Client Sample ID: BMW-28
Lab ID: 1702267-03
Collection Date: 02/23/17 02:20 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/03/17 02:19 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:50 PM
Barium	0.0734	0.00300	0.0100		mg/L	1	03/02/17 12:50 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/02/17 12:50 PM
Boron	0.0776	0.0100	0.0300		mg/L	1	03/03/17 02:19 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/02/17 12:50 PM
Calcium	53.3	1.00	3.00		mg/L	10	03/03/17 02:00 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:50 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/02/17 12:50 PM
Lead	0.000965	0.000300	0.00100	J	mg/L	1	03/02/17 12:50 PM
Lithium	0.00514	0.00500	0.0100	J	mg/L	1	03/02/17 12:50 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:50 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/02/17 12:50 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/02/17 12:50 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/07/17 11:24 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	24.0	0.300	1.00		mg/L	1	03/02/17 01:42 PM
Fluoride	0.110	0.100	0.400	J	mg/L	1	03/02/17 01:42 PM
Sulfate	20.3	1.00	3.00		mg/L	1	03/02/17 01:42 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	8.23	0	0		pH Units@19.1°C	1	02/27/17 02:20 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	203	10.0	10.0		mg/L	1	03/03/17 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: 1702267

Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170307C

The QC data in batch 79420 applies to the following samples: 1702267-01A, 1702267-02A, 1702267-03A

Sample ID	MB-79420	Batch ID:	79420	TestNo:	SW7470A	Units:	mg/L													
SampType:	MBLK	Run ID:	CETAC2_HG_170307	Analysis Date:	3/7/2017 11:04:17 AM	Prep Date:	3/3/2017													
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual									

Mercury <0.0000800 0.000200

Sample ID	LCS-79420	Batch ID:	79420	TestNo:	SW7470A	Units:	mg/L													
SampType:	LCS	Run ID:	CETAC2_HG_170307	Analysis Date:	3/7/2017 11:06:33 AM	Prep Date:	3/3/2017													
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual									

Mercury 0.00209 0.000200 0.00200 0 104 85 115

Sample ID	LCSD-79420	Batch ID:	79420	TestNo:	SW7470A	Units:	mg/L													
SampType:	LCSD	Run ID:	CETAC2_HG_170307	Analysis Date:	3/7/2017 11:08:49 AM	Prep Date:	3/3/2017													
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual									

Mercury 0.00207 0.000200 0.00200 0 104 85 115 0.962 15

Sample ID	1702267-02A SD	Batch ID:	79420	TestNo:	SW7470A	Units:	mg/L													
SampType:	SD	Run ID:	CETAC2_HG_170307	Analysis Date:	3/7/2017 11:15:38 AM	Prep Date:	3/3/2017													
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	1702267-02A PDS	Batch ID:	79420	TestNo:	SW7470A	Units:	mg/L													
SampType:	PDS	Run ID:	CETAC2_HG_170307	Analysis Date:	3/7/2017 11:17:54 AM	Prep Date:	3/3/2017													
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

Sample ID	1702267-02A MS	Batch ID:	79420	TestNo:	SW7470A	Units:	mg/L													
SampType:	MS	Run ID:	CETAC2_HG_170307	Analysis Date:	3/7/2017 11:20:11 AM	Prep Date:	3/3/2017													
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual									

Mercury 0.00208 0.000200 0.00200 0 104 80 120

Sample ID	1702267-02A MSD	Batch ID:	79420	TestNo:	SW7470A	Units:	mg/L													
SampType:	MSD	Run ID:	CETAC2_HG_170307	Analysis Date:	3/7/2017 11:22:28 AM	Prep Date:	3/3/2017													
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual									

Mercury 0.00209 0.000200 0.00200 0 104 80 120 0.480 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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170307C

Sample ID	ICV-170307	Batch ID:	R90826	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_170307	Analysis Date:	3/7/2017 10:14:19 AM	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	CCV1-170307	Batch ID:	R90826		TestNo:	SW7470A		Units:	mg/L		
SampType:	CCV	Run ID:	CETAC2_HG_170307		Analysis Date:	3/7/2017 10:57:26 AM		Prep Date:			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00200	0.000200	0.00200	0	100	90	110			

Sample ID	CCV2-170307			Batch ID:	R90826		TestNo:	SW7470A		Units:	mg/L	
SampType:	CCV			Run ID:	CETAC2_HG_170307		Analysis Date:	3/7/2017 11:31:35 AM		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			

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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170302A

The QC data in batch 79390 applies to the following samples: 1702267-01A, 1702267-02A, 1702267-03A

Sample ID	MB-79390	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	MBLK	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 11:47:00 AM	Prep Date:	3/1/2017			
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	LCS-79390			Batch ID:	79390		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_170302A		Analysis Date:	3/2/2017 11:49:00 AM		Prep Date:	3/1/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.196	0.00250	0.200	0	97.9	80	120
Arsenic	0.203	0.00500	0.200	0	101	80	120
Barium	0.204	0.0100	0.200	0	102	80	120
Beryllium	0.206	0.00100	0.200	0	103	80	120
Cadmium	0.200	0.00100	0.200	0	99.8	80	120
Calcium	4.99	0.300	5.00	0	99.7	80	120
Chromium	0.210	0.00500	0.200	0	105	80	120
Cobalt	0.204	0.00500	0.200	0	102	80	120
Lead	0.204	0.00100	0.200	0	102	80	120
Lithium	0.192	0.0100	0.200	0	96.2	80	120
Molybdenum	0.201	0.00500	0.200	0	100	80	120
Selenium	0.198	0.00500	0.200	0	99.2	80	120
Thallium	0.203	0.00150	0.200	0	101	80	120

Sample ID	LCSD-79390			Batch ID:	79390		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_170302A		Analysis Date:	3/2/2017 11:52:00 AM		Prep Date:	3/1/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.201	0.00250	0.200	0	101	80	120	2.76	15
Arsenic	0.205	0.00500	0.200	0	102	80	120	1.00	15
Barium	0.207	0.0100	0.200	0	103	80	120	1.34	15
Beryllium	0.210	0.00100	0.200	0	105	80	120	1.81	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170302A

Sample ID	LCSD-79390	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L		
SampType:	LCSD	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 11:52:00 AM	Prep Date:	3/1/2017		
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Cadmium	0.201	0.00100	0.200	0	101	80	120	0.774	15
Calcium	5.27	0.300	5.00	0	105	80	120	5.54	15
Chromium	0.212	0.00500	0.200	0	106	80	120	0.883	15
Cobalt	0.203	0.00500	0.200	0	102	80	120	0.380	15
Lead	0.203	0.00100	0.200	0	101	80	120	0.394	15
Lithium	0.190	0.0100	0.200	0	94.8	80	120	1.52	15
Molybdenum	0.203	0.00500	0.200	0	101	80	120	1.10	15
Selenium	0.200	0.00500	0.200	0	99.8	80	120	0.563	15
Thallium	0.200	0.00150	0.200	0	100	80	120	1.05	15

Sample ID	1702186-07A MS	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L		
SampType:	MS	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 12:19:00 PM	Prep Date:	3/1/2017		
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		
Arsenic	0.229	0.00500	0.200	0.0342	97.2	80	120		
Barium	0.224	0.0100	0.200	0.0175	103	80	120		
Beryllium	0.346	0.00100	0.200	0.222	62.1	80	120		S
Cadmium	0.212	0.00100	0.200	0.0364	87.6	80	120		
Calcium	729	0.300	5.00	713	314	80	120		S
Chromium	0.182	0.00500	0.200	0.00305	89.7	80	120		
Cobalt	0.771	0.00500	0.200	0.610	80.5	80	120		
Lead	0.214	0.00100	0.200	0.000666	107	80	120		
Lithium	0.636	0.0100	0.200	0.534	51.2	80	120		S
Molybdenum	0.206	0.00500	0.200	0	103	80	120		
Selenium	0.405	0.00500	0.200	0.198	104	80	120		
Thallium	0.226	0.00150	0.200	0.00307	112	80	120		

Sample ID	1702186-07A MSD	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L		
SampType:	MSD	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 12:21:00 PM	Prep Date:	3/1/2017		
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	1.02	15
Arsenic	0.227	0.00500	0.200	0.0342	96.4	80	120	0.648	15
Barium	0.220	0.0100	0.200	0.0175	101	80	120	1.69	15
Beryllium	0.348	0.00100	0.200	0.222	63.1	80	120	0.590	15 S
Cadmium	0.209	0.00100	0.200	0.0364	86.4	80	120	1.13	15
Calcium	726	0.300	5.00	713	258	80	120	0.380	15 S
Chromium	0.184	0.00500	0.200	0.00305	90.6	80	120	0.985	15
Cobalt	0.770	0.00500	0.200	0.610	80.0	80	120	0.144	15
Lead	0.215	0.00100	0.200	0.000666	107	80	120	0.539	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170302A

Sample ID	1702186-07A MSD	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 12:21:00 PM	Prep Date:	3/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.645	0.0100	0.200	0.534	55.6	80	120	1.37	15	S
Molybdenum	0.204	0.00500	0.200	0	102	80	120	0.843	15	
Selenium	0.404	0.00500	0.200	0.198	103	80	120	0.245	15	
Thallium	0.228	0.00150	0.200	0.00307	112	80	120	0.717	15	

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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170302A

Sample ID	ICV-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 10:05:00 AM	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	0.0994	0.00500	0.100	0	99.4	90	110			
Barium	0.101	0.0100	0.100	0	101	90	110			
Beryllium	0.103	0.00100	0.100	0	103	90	110			
Cadmium	0.0991	0.00100	0.100	0	99.1	90	110			
Calcium	2.58	0.300	2.50	0	103	90	110			
Chromium	0.106	0.00500	0.100	0	106	90	110			
Cobalt	0.101	0.00500	0.100	0	101	90	110			
Lead	0.101	0.00100	0.100	0	101	90	110			
Lithium	0.0932	0.0100	0.100	0	93.2	90	110			
Molybdenum	0.0973	0.00500	0.100	0	97.3	90	110			
Selenium	0.0973	0.00500	0.100	0	97.3	90	110			
Thallium	0.102	0.00150	0.100	0	102	90	110			

Sample ID	LCVL-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 10:10:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00197	0.00250	0.00200	0	98.4	70	130			
Arsenic	0.00510	0.00500	0.00500	0	102	70	130			
Barium	0.00489	0.0100	0.00500	0	97.7	70	130			
Beryllium	0.00101	0.00100	0.00100	0	101	70	130			
Cadmium	0.000987	0.00100	0.00100	0	98.7	70	130			
Calcium	0.107	0.300	0.100	0	107	70	130			
Chromium	0.00525	0.00500	0.00500	0	105	70	130			
Cobalt	0.00526	0.00500	0.00500	0	105	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.00971	0.0100	0.0100	0	97.1	70	130			
Molybdenum	0.00515	0.00500	0.00500	0	103	70	130			
Selenium	0.00445	0.00500	0.00500	0	89.0	70	130			
Thallium	0.00100	0.00150	0.00100	0	100	70	130			

Sample ID	CCV2-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 11:26:00 AM	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	103	90	110			
Barium	0.212	0.0100	0.200	0	106	90	110			
Beryllium	0.205	0.00100	0.200	0	102	90	110			
Cadmium	0.205	0.00100	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170302A

Sample ID	CCV2-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 11:26:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	5.21	0.300	5.00	0	104	90	110			
Chromium	0.212	0.00500	0.200	0	106	90	110			
Cobalt	0.207	0.00500	0.200	0	103	90	110			
Lead	0.213	0.00100	0.200	0	107	90	110			
Lithium	0.192	0.0100	0.200	0	96.2	90	110			
Molybdenum	0.206	0.00500	0.200	0	103	90	110			
Selenium	0.203	0.00500	0.200	0	101	90	110			
Thallium	0.213	0.00150	0.200	0	106	90	110			

Sample ID	LCVL2-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 11:32:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00195	0.00250	0.00200	0	97.4	70	130			
Arsenic	0.00490	0.00500	0.00500	0	98.1	70	130			
Barium	0.00509	0.0100	0.00500	0	102	70	130			
Beryllium	0.00103	0.00100	0.00100	0	103	70	130			
Cadmium	0.000985	0.00100	0.00100	0	98.5	70	130			
Calcium	0.118	0.300	0.100	0	118	70	130			
Chromium	0.00525	0.00500	0.00500	0	105	70	130			
Cobalt	0.00513	0.00500	0.00500	0	103	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.0103	0.0100	0.0100	0	103	70	130			
Molybdenum	0.00482	0.00500	0.00500	0	96.5	70	130			
Selenium	0.00526	0.00500	0.00500	0	105	70	130			
Thallium	0.00106	0.00150	0.00100	0	106	70	130			

Sample ID	CCV3-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 12:27:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.198	0.00250	0.200	0	99.2	90	110			
Arsenic	0.201	0.00500	0.200	0	101	90	110			
Barium	0.209	0.0100	0.200	0	104	90	110			
Beryllium	0.191	0.00100	0.200	0	95.4	90	110			
Cadmium	0.197	0.00100	0.200	0	98.6	90	110			
Calcium	5.27	0.300	5.00	0	105	90	110			
Chromium	0.206	0.00500	0.200	0	103	90	110			
Cobalt	0.197	0.00500	0.200	0	98.5	90	110			
Lead	0.210	0.00100	0.200	0	105	90	110			
Lithium	0.190	0.0100	0.200	0	94.9	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170302A

Sample ID	CCV3-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 12:27:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.194	0.00500	0.200	0	97.1	90	110			
Selenium	0.206	0.00500	0.200	0	103	90	110			
Thallium	0.211	0.00150	0.200	0	105	90	110			

Sample ID	LCVL3-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 12:34:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00195	0.00250	0.00200	0	97.5	70	130			
Arsenic	0.00515	0.00500	0.00500	0	103	70	130			
Barium	0.00530	0.0100	0.00500	0	106	70	130			
Beryllium	0.00100	0.00100	0.00100	0	100	70	130			
Cadmium	0.000989	0.00100	0.00100	0	98.9	70	130			
Calcium	0.115	0.300	0.100	0	115	70	130			
Chromium	0.00520	0.00500	0.00500	0	104	70	130			
Cobalt	0.00505	0.00500	0.00500	0	101	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.0115	0.0100	0.0100	0	115	70	130			
Molybdenum	0.00482	0.00500	0.00500	0	96.3	70	130			
Selenium	0.00479	0.00500	0.00500	0	95.8	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID	CCV4-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 1:00:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.206	0.00500	0.200	0	103	90	110			
Barium	0.213	0.0100	0.200	0	106	90	110			
Beryllium	0.186	0.00100	0.200	0	93.0	90	110			
Cadmium	0.196	0.00100	0.200	0	98.0	90	110			
Chromium	0.210	0.00500	0.200	0	105	90	110			
Cobalt	0.197	0.00500	0.200	0	98.7	90	110			
Lead	0.206	0.00100	0.200	0	103	90	110			
Lithium	0.182	0.0100	0.200	0	90.9	90	110			
Molybdenum	0.196	0.00500	0.200	0	97.8	90	110			
Selenium	0.209	0.00500	0.200	0	104	90	110			
Thallium	0.205	0.00150	0.200	0	102	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170302A

Sample ID	LCVL4-170302	Batch ID:	R90771	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170302A	Analysis Date:	3/2/2017 1:10:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.00523	0.00500	0.00500	0	105	70	130			
Barium	0.00510	0.0100	0.00500	0	102	70	130			
Beryllium	0.000911	0.00100	0.00100	0	91.1	70	130			
Cadmium	0.000978	0.00100	0.00100	0	97.8	70	130			
Chromium	0.00522	0.00500	0.00500	0	104	70	130			
Cobalt	0.00498	0.00500	0.00500	0	99.6	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.00981	0.0100	0.0100	0	98.1	70	130			
Molybdenum	0.00473	0.00500	0.00500	0	94.5	70	130			
Selenium	0.00529	0.00500	0.00500	0	106	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170303B

The QC data in batch 79390 applies to the following samples: 1702267-01A, 1702267-02A, 1702267-03A

Sample ID	1702186-07A SD	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 12:58:00 PM	Prep Date:	3/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.284	0.500	0	0.279				1.88	10	
Boron	53.9	15.0	0	50.4				6.65	10	
Calcium	777	150	0	752				3.16	10	
Cobalt	<1.50	2.50	0	0.713				0	10	

Sample ID: 1702186-07A PDS	Batch ID: 79390	TestNo: SW6020A	Units: mg/L							
SampType: PDS	Run ID: ICP-MS4_170303B	Analysis Date: 3/3/2017 1:19:00 PM	Prep Date: 3/1/2017							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	20.0	0.100	20.0	0.279	98.7	80	120			
Boron	70.5	3.00	20.0	50.4	100	80	120			
Calcium	1230	30.0	500	752	94.7	80	120			
Cobalt	20.7	0.500	20.0	0.713	100	80	120			

Sample ID	1702186-07A MS	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 1:21:00 PM	Prep Date:	3/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.327	0.250	0.200	0	164	80	120			S
Arsenic	0.251	0.500	0.200	0	126	80	120			S
Barium	<0.300	1.00	0.200	0	0	80	120			S
Beryllium	0.452	0.100	0.200	0.279	86.7	80	120			
Boron	51.8	3.00	0.200	50.4	682	80	120			S
Cadmium	0.249	0.100	0.200	0.0409	104	80	120			
Calcium	761	30.0	5.00	752	171	80	120			S
Chromium	0.214	0.500	0.200	0	107	80	120			
Cobalt	0.914	0.500	0.200	0.713	101	80	120			
Lead	0.216	0.100	0.200	0	108	80	120			
Lithium	0.957	1.00	0.200	0.763	97.0	80	120			
Molybdenum	0.249	0.500	0.200	0	125	80	120			S
Selenium	0.451	0.500	0.200	0	225	80	120			S
Thallium	0.212	0.150	0.200	0	106	80	120			

Sample ID	1702186-07A MSD	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 1:23:00 PM	Prep Date:	3/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.233	0.250	0.200	0	116	80	120	33.8	15	R
Arsenic	0.240	0.500	0.200	0	120	80	120	4.77	15	
Barium	<0.300	1.00	0.200	0	0	80	120	0	15	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170303B

Sample ID 1702186-07A MSD	Batch ID: 79390	TestNo: SW6020A	Units: mg/L
SampType: MSD	Run ID: ICP-MS4_170303B	Analysis Date: 3/3/2017 1:23:00 PM	Prep Date: 3/1/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.455	0.100	0.200	0.279	88.3	80	120	0.705	15	
Boron	52.0	3.00	0.200	50.4	786	80	120	0.399	15	S
Cadmium	0.233	0.100	0.200	0.0409	96.0	80	120	6.56	15	
Calcium	755	30.0	5.00	752	48.6	80	120	0.805	15	S
Chromium	0.208	0.500	0.200	0	104	80	120	2.70	15	
Cobalt	0.913	0.500	0.200	0.713	100	80	120	0.098	15	
Lead	0.210	0.100	0.200	0	105	80	120	2.72	15	
Lithium	0.912	1.00	0.200	0.763	74.5	80	120	4.81	15	S
Molybdenum	0.205	0.500	0.200	0	102	80	120	19.7	15	R
Selenium	0.426	0.500	0.200	0	213	80	120	5.68	15	S
Thallium	0.210	0.150	0.200	0	105	80	120	0.950	15	

Sample ID MB-79390	Batch ID: 79390	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_170303B	Analysis Date: 3/3/2017 2:31:00 PM	Prep Date: 3/1/2017

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 LCS-79390	Batch ID: 79390	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_170303B	Analysis Date: 3/3/2017 2:33:00 PM	Prep Date: 3/1/2017

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	0.197	0.00500	0.200	0	98.7	80	120			
Barium	0.195	0.0100	0.200	0	97.4	80	120			
Beryllium	0.207	0.00100	0.200	0	104	80	120			
Boron	0.201	0.0300	0.200	0	101	80	120			
Cadmium	0.203	0.00100	0.200	0	101	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170303B

Sample ID	LCS-79390			Batch ID:	79390		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_170303B		Analysis Date:	3/3/2017 2:33:00 PM		Prep Date:	3/1/2017	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	4.92	0.300	5.00	0	98.4	80	120			
Chromium	0.204	0.00500	0.200	0	102	80	120			
Cobalt	0.206	0.00500	0.200	0	103	80	120			
Lead	0.213	0.00100	0.200	0	106	80	120			
Lithium	0.194	0.0100	0.200	0	97.1	80	120			
Molybdenum	0.196	0.00500	0.200	0	98.0	80	120			
Selenium	0.202	0.00500	0.200	0	101	80	120			
Thallium	0.213	0.00150	0.200	0	107	80	120			

Sample ID	LCSD-79390	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 2:35:00 PM	Prep Date:	3/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.201	0.00250	0.200	0	100	80	120	2.85	15	
Arsenic	0.200	0.00500	0.200	0	100	80	120	1.37	15	
Barium	0.200	0.0100	0.200	0	100	80	120	2.64	15	
Beryllium	0.208	0.00100	0.200	0	104	80	120	0.111	15	
Boron	0.202	0.0300	0.200	0	101	80	120	0.482	15	
Cadmium	0.204	0.00100	0.200	0	102	80	120	0.870	15	
Calcium	5.22	0.300	5.00	0	104	80	120	5.93	15	
Chromium	0.209	0.00500	0.200	0	105	80	120	2.20	15	
Cobalt	0.208	0.00500	0.200	0	104	80	120	1.39	15	
Lead	0.218	0.00100	0.200	0	109	80	120	2.47	15	
Lithium	0.198	0.0100	0.200	0	98.8	80	120	1.75	15	
Molybdenum	0.200	0.00500	0.200	0	100	80	120	2.07	15	
Selenium	0.205	0.00500	0.200	0	102	80	120	1.33	15	
Thallium	0.218	0.00150	0.200	0	109	80	120	2.22	15	

Sample ID	1702186-07A SD			Batch ID:	79390		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD			Run ID:	ICP-MS4_170303B		Analysis Date:	3/3/2017 2:42:00 PM		Prep Date:	3/1/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	<0.00400	0.0125	0	0				0	10	
Arsenic	0.0362	0.0250	0	0.0300				18.6	10	R
Barium	0.0175	0.0500	0	0.0169				3.21	10	
Cadmium	0.0393	0.00500	0	0.0366				7.03	10	
Chromium	<0.0100	0.0250	0	0.00304				0	10	
Lead	<0.00150	0.00500	0	0.000731				0	10	
Molybdenum	<0.0100	0.0250	0	0				0	10	
Selenium	0.191	0.0250	0	0.169				12.1	10	R
Thallium	0.00307	0.00750	0	0.00315				2.48	10	

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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170303B

Sample ID	1702186-07A PDS	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 3:01:00 PM	Prep Date:	3/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.188	0.00250	0.200	0	94.1	80	120			
Arsenic	0.214	0.00500	0.200	0.0300	92.1	80	120			
Barium	0.204	0.0100	0.200	0.0169	93.8	80	120			
Cadmium	0.203	0.00100	0.200	0.0366	83.2	80	120			
Chromium	0.180	0.00500	0.200	0.00304	88.6	80	120			
Lead	0.208	0.00100	0.200	0.000731	103	80	120			
Molybdenum	0.189	0.00500	0.200	0	94.3	80	120			
Selenium	0.371	0.00500	0.200	0.169	101	80	120			
Thallium	0.214	0.00150	0.200	0.00315	105	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170303B

Sample ID	ICV-170303B	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 12:45:00 PM	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	0.0981	0.00500	0.100	0	98.1	90	110			
Barium	0.0995	0.0100	0.100	0	99.5	90	110			
Beryllium	0.0993	0.00100	0.100	0	99.3	90	110			
Boron	0.0976	0.0300	0.100	0	97.6	90	110			
Cadmium	0.100	0.00100	0.100	0	100	90	110			
Calcium	2.52	0.300	2.50	0	101	90	110			
Chromium	0.105	0.00500	0.100	0	105	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	0.0958	0.0100	0.100	0	95.8	90	110			
Molybdenum	0.0965	0.00500	0.100	0	96.5	90	110			
Selenium	0.0991	0.00500	0.100	0	99.1	90	110			
Thallium	0.102	0.00150	0.100	0	102	90	110			

Sample ID	LCVL-170303B	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 12:50:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00195	0.00250	0.00200	0	97.7	70	130			
Arsenic	0.00498	0.00500	0.00500	0	99.6	70	130			
Barium	0.00498	0.0100	0.00500	0	99.7	70	130			
Beryllium	0.000943	0.00100	0.00100	0	94.3	70	130			
Boron	0.0216	0.0300	0.0200	0	108	70	130			
Cadmium	0.00106	0.00100	0.00100	0	106	70	130			
Calcium	0.109	0.300	0.100	0	109	70	130			
Chromium	0.00518	0.00500	0.00500	0	104	70	130			
Cobalt	0.00515	0.00500	0.00500	0	103	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.00974	0.0100	0.0100	0	97.4	70	130			
Molybdenum	0.00501	0.00500	0.00500	0	100	70	130			
Selenium	0.00495	0.00500	0.00500	0	99.0	70	130			
Thallium	0.00103	0.00150	0.00100	0	103	70	130			

Sample ID	CCV3-170303	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 1:29:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.198	0.00250	0.200	0	99.0	90	110			
Arsenic	0.199	0.00500	0.200	0	99.6	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170303B

Sample ID	CCV3-170303			Batch ID:	R90786		TestNo:	SW6020A		Units:	mg/L		
SampType:	CCV			Run ID:	ICP-MS4_170303B		Analysis Date:	3/3/2017 1:29:00 PM		Prep Date:			
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.207	0.00100	0.200	0	104	90	110			
Boron	0.212	0.0300	0.200	0	106	90	110			
Cadmium	0.203	0.00100	0.200	0	102	90	110			
Calcium	5.25	0.300	5.00	0	105	90	110			
Chromium	0.210	0.00500	0.200	0	105	90	110			
Cobalt	0.207	0.00500	0.200	0	104	90	110			
Lead	0.214	0.00100	0.200	0	107	90	110			
Lithium	0.199	0.0100	0.200	0	99.7	90	110			
Molybdenum	0.199	0.00500	0.200	0	99.6	90	110			
Selenium	0.202	0.00500	0.200	0	101	90	110			
Thallium	0.209	0.00150	0.200	0	104	90	110			

Sample ID	LCVL3-170303	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 1:35:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00197	0.00250	0.00200	0	98.2	70	130			
Arsenic	0.00487	0.00500	0.00500	0	97.4	70	130			
Barium	0.00486	0.0100	0.00500	0	97.1	70	130			
Beryllium	0.000830	0.00100	0.00100	0	83.0	70	130			
Boron	0.0242	0.0300	0.0200	0	121	70	130			
Cadmium	0.00100	0.00100	0.00100	0	100	70	130			
Calcium	0.106	0.300	0.100	0	106	70	130			
Chromium	0.00516	0.00500	0.00500	0	103	70	130			
Cobalt	0.00518	0.00500	0.00500	0	104	70	130			
Lead	0.00104	0.00100	0.00100	0	104	70	130			
Lithium	0.00983	0.0100	0.0100	0	98.3	70	130			
Molybdenum	0.00484	0.00500	0.00500	0	96.7	70	130			
Selenium	0.00491	0.00500	0.00500	0	98.1	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV4-170303	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 2:06:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.201	0.00250	0.200	0	101	90	110			
Boron	0.208	0.0300	0.200	0	104	90	110			
Calcium	5.29	0.300	5.00	0	106	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170303B

Sample ID	LCVL4-170303	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 2:15:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony		0.00195	0.00250	0.00200	0	97.7	70	130			
Boron		0.0177	0.0300	0.0200	0	88.7	70	130			
Calcium		0.106	0.300	0.100	0	106	70	130			

Sample ID	CCV5-170303	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 2:21:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.7	90	110			
Arsenic	0.198	0.00500	0.200	0	99.2	90	110			
Barium	0.200	0.0100	0.200	0	100	90	110			
Beryllium	0.206	0.00100	0.200	0	103	90	110			
Boron	0.204	0.0300	0.200	0	102	90	110			
Cadmium	0.204	0.00100	0.200	0	102	90	110			
Calcium	5.23	0.300	5.00	0	105	90	110			
Chromium	0.210	0.00500	0.200	0	105	90	110			
Cobalt	0.206	0.00500	0.200	0	103	90	110			
Lead	0.214	0.00100	0.200	0	107	90	110			
Lithium	0.197	0.0100	0.200	0	98.4	90	110			
Molybdenum	0.200	0.00500	0.200	0	99.9	90	110			
Selenium	0.201	0.00500	0.200	0	100	90	110			
Thallium	0.208	0.00150	0.200	0	104	90	110			

Sample ID	LCVL5-170303	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 2:25:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00190	0.00250	0.00200	0	95.2	70	130			
Arsenic	0.00503	0.00500	0.00500	0	101	70	130			
Barium	0.00492	0.0100	0.00500	0	98.4	70	130			
Beryllium	0.00112	0.00100	0.00100	0	112	70	130			
Boron	0.0190	0.0300	0.0200	0	94.8	70	130			
Cadmium	0.000986	0.00100	0.00100	0	98.6	70	130			
Calcium	0.103	0.300	0.100	0	103	70	130			
Chromium	0.00517	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	0.00957	0.0100	0.0100	0	95.7	70	130			
Molybdenum	0.00479	0.00500	0.00500	0	95.7	70	130			
Selenium	0.00507	0.00500	0.00500	0	101	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170303B

Sample ID	CCV6-170303	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 3:09:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.196	0.00250	0.200	0	98.0	90	110			
Arsenic	0.199	0.00500	0.200	0	99.7	90	110			
Barium	0.203	0.0100	0.200	0	101	90	110			
Cadmium	0.199	0.00100	0.200	0	99.3	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			
Lead	0.214	0.00100	0.200	0	107	90	110			
Molybdenum	0.193	0.00500	0.200	0	96.4	90	110			
Selenium	0.211	0.00500	0.200	0	105	90	110			
Thallium	0.209	0.00150	0.200	0	105	90	110			

Sample ID	LCVL6-170303	Batch ID:	R90786	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170303B	Analysis Date:	3/3/2017 3:17:00 PM	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	0.00500	0.00500	0.00500	0	100	70	130			
Barium	0.00492	0.0100	0.00500	0	98.5	70	130			
Cadmium	0.000975	0.00100	0.00100	0	97.5	70	130			
Chromium	0.00509	0.00500	0.00500	0	102	70	130			
Lead	0.00101	0.00100	0.00100	0	101	70	130			
Molybdenum	0.00456	0.00500	0.00500	0	91.2	70	130			
Selenium	0.00546	0.00500	0.00500	0	109	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170306C

The QC data in batch 79390 applies to the following samples: 1702267-01A, 1702267-02A, 1702267-03A

Sample ID	1702186-07A SD	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS5_170306C	Analysis Date:	3/6/2017 12:49:00 PM	Prep Date:	3/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lithium	0.764	0.250	0	0.742				3.03	10

Sample ID	1702186-07A PDS	Batch ID:	79390	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS5_170306C	Analysis Date:	3/6/2017 12:50:00 PM	Prep Date:	3/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lithium	1.67	0.0500	1.00	0.742	92.8	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170306C

Sample ID	ICV-170306	Batch ID:	R90798	TestNo:	SW6020A	Units:	mg/L
SampType:	ICV	Run ID:	ICP-MS5_170306C	Analysis Date:	3/6/2017 9:59:00 AM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Lithium	0.0917	0.0100	0.100	0	91.7	90	110

Sample ID	LCVL-170306	Batch ID:	R90798	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS5_170306C	Analysis Date:	3/6/2017 10:04:00 AM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Lithium	0.00901	0.0100	0.0100	0	90.1	70	130

Sample ID	CCV5-170306	Batch ID:	R90798	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS5_170306C	Analysis Date:	3/6/2017 12:33:00 PM	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

Sample ID	LCVL5-170306	Batch ID:	R90798	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS5_170306C	Analysis Date:	3/6/2017 12:39:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Lithium	0.0110	0.0100	0.0100	0	110	70	130

Sample ID	CCV6-170306	Batch ID:	R90798	TestNo:	SW6020A	Units:	mg/L
SampType:	CCV	Run ID:	ICP-MS5_170306C	Analysis Date:	3/6/2017 12:52:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Lithium	0.201	0.0100	0.200	0	100	90	110

Sample ID	LCVL6-170306	Batch ID:	R90798	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS5_170306C	Analysis Date:	3/6/2017 1:00:00 PM	Prep Date:	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit %RPD RPDLimit Qual
Lithium	0.0107	0.0100	0.0100	0	107	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_170302A

The QC data in batch 79398 applies to the following samples: 1702267-01D, 1702267-02D, 1702267-03D

Sample ID	MB-79398		Batch ID:	79398		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC2_170302A		Analysis Date:	3/2/2017 9:00:42 AM		Prep Date:	3/2/2017	
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	LCS-79398		Batch ID:	79398		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC2_170302A		Analysis Date:	3/2/2017 9:15:18 AM		Prep Date:	3/2/2017	
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	3.63	0.400	4.000	0	90.7	90	110			
Sulfate	29.4	3.00	30.00	0	98.0	90	110			

Sample ID	LCSD-79398	Batch ID:	79398	TestNo:	E300	Units:	mg/L				
SampType:	LCSD	Run ID:	IC2_170302A	Analysis Date:	3/2/2017 9:29:55 AM	Prep Date:	3/2/2017				
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	0.462	20	
Fluoride	3.70	0.400	4.000	0	92.4	90	110	1.92	20	
Sulfate	29.2	3.00	30.00	0	97.3	90	110	0.733	20	

Sample ID	1702267-01DMS	Batch ID:	79398	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_170302A	Analysis Date:	3/2/2017 2:00:47 PM	Prep Date:	3/2/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	41.4	1.00	20.00	23.89	87.6	90	110			S
Fluoride	19.9	0.400	20.00	0.1060	99.0	90	110			
Sulfate	40.3	3.00	20.00	20.41	99.5	90	110			

Sample ID	1702267-01DMSD		Batch ID:	79398		TestNo:	E300		Units:	mg/L	
SampType:	MSD		Run ID:	IC2_170302A		Analysis Date:	3/2/2017 2:15:23 PM		Prep Date:	3/2/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	41.5	1.00	20.00	23.89	87.8	90	110	0.093	20	S
Fluoride	20.0	0.400	20.00	0.1060	99.3	90	110	0.243	20	
Sulfate	40.3	3.00	20.00	20.41	99.4	90	110	0.048	20	

Sample ID	1702267-02DMS	Batch ID:	79398	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC2_170302A	Analysis Date:	3/2/2017 2:30:00 PM	Prep Date:	3/2/2017				
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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_170302A

Sample ID	1702267-02DMS	Batch ID:	79398	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_170302A	Analysis Date:	3/2/2017 2:30:00 PM	Prep Date:	3/2/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	41.9	1.00	20.00	24.02	89.2	90	110			S
Fluoride	20.7	0.400	20.00	0.2525	102	90	110			
Sulfate	40.7	3.00	20.00	20.59	100	90	110			

Sample ID	1702267-02DMSD	Batch ID:	79398	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC2_170302A	Analysis Date:	3/2/2017 2:44:36 PM	Prep Date:	3/2/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	41.6	1.00	20.00	24.02	87.7	90	110	0.752	20	S
Fluoride	20.2	0.400	20.00	0.2525	99.6	90	110	2.78	20	
Sulfate	40.4	3.00	20.00	20.59	99.2	90	110	0.627	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_170302A

Sample ID	ICV-170302	Batch ID:	R90774	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_170302A	Analysis Date:	3/2/2017 8:23:38 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.9	1.00	25.00	0	99.6	90	110			
Fluoride	9.55	0.400	10.00	0	95.5	90	110			
Sulfate	75.2	3.00	75.00	0	100	90	110			

Sample ID	CCV1-170302	Batch ID:	R90774	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_170302A	Analysis Date:	3/2/2017 12:25:47 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.85	1.00	10.00	0	98.5	90	110			
Fluoride	4.02	0.400	4.000	0	100	90	110			
Sulfate	29.6	3.00	30.00	0	98.8	90	110			

Sample ID	CCV2-170302	Batch ID:	R90774	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_170302A	Analysis Date:	3/2/2017 2:59:13 PM	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	3.97	0.400	4.000	0	99.4	90	110			
Sulfate	29.3	3.00	30.00	0	97.8	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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170227A

The QC data in batch 79353 applies to the following samples: 1702267-01D, 1702267-02D, 1702267-03D

Sample ID	1702229-01A-DUP	Batch ID:	79353	TestNo:	M4500-H+ B	Units:	pH Units@18.3°C
SampType:	DUP	Run ID:	TITRATOR_170227A	Analysis Date:	2/27/2017 2:02:00 PM	Prep Date:	2/27/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		8.98	0	0	9.040		0.666 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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170227A

Sample ID	ICV-170227	Batch ID:	R90725	TestNo:	M4500-H+ B	Units:	pH Units@21.2°C			
SampType:	ICV	Run ID:	TITRATOR_170227A	Analysis Date:	2/27/2017 1:21:00 PM	Prep Date:	2/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.92	0	10.00	0	99.2	99	101			

Sample ID	CCV1-170227	Batch ID:	R90725	TestNo:	M4500-H+ B	Units:	pH Units@21.1°C			
SampType:	CCV	Run ID:	TITRATOR_170227A	Analysis Date:	2/27/2017 2:22:00 PM	Prep Date:	2/27/2017			
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			

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: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170301B

The QC data in batch 79394 applies to the following samples: 1702267-01D, 1702267-02D

Sample ID	MB-79394	Batch ID:	79394	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_170301B	Analysis Date:	3/2/2017 8:40:00 AM	Prep Date:	3/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-79394	Batch ID:	79394	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_170301B	Analysis Date:	3/2/2017 8:40:00 AM	Prep Date:	3/1/2017				
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	1702258-09C-DUP	Batch ID:	79394	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170301B	Analysis Date:	3/2/2017 8:40:00 AM	Prep Date:	3/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 2770 50.0 0 2670 3.50 5

Sample ID	1702275-01E-DUP	Batch ID:	79394	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170301B	Analysis Date:	3/2/2017 8:40:00 AM	Prep Date:	3/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 423 10.0 0 414.0 2.15 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

CLIENT: Pastor, Behling & Wheeler
Work Order: 1702267
Project: MLSES - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170302B

The QC data in batch 79412 applies to the following samples: 1702267-03D

Sample ID	MB-79412	Batch ID:	79412	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_170302B	Analysis Date:	3/3/2017 8:40:00 AM	Prep Date:	3/2/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-79412	Batch ID:	79412	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_170302B	Analysis Date:	3/3/2017 8:40:00 AM	Prep Date:	3/2/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 739 10.0 745.6 0 99.1 90 113

Sample ID	1702267-03D-DUP	Batch ID:	79412	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170302B	Analysis Date:	3/3/2017 8:40:00 AM	Prep Date:	3/2/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 209 10.0 0 203.0 2.91 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: 20170165

This report contains the analytical results for the 3 sample(s) received under chain of custody by ESC Lab Sciences on 3/1/2017 2:12:51 PM. These samples are associated with your 1702267 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

L893585



Client : DHL Analytical, Inc.
 Client Project : 1702267
 Lab Number : 20170165
 Date Reported : 03/24/17
 Date Received : 03/01/17
 Page Number : 2 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20170165-01
Client ID : BMW-26
Date Sampled : 2/23/2017 12:15:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.26 +/- 0.718	0.858	pCi/l			
Radium-226	SM 7500 Ra B M*	0.306 +/- 0.236	0.207	pCi/l	03/16/17	03/20/17	SD
Radium-228	EPA 904*/9320*	0.951 +/- 0.482	0.651	pCi/l	03/09/17	03/16/17	JR

Lab ID : 20170165-02
Client ID : BMW-27
Date Sampled : 2/23/2017 1:15:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		0.684 +/- 0.514	0.762	pCi/l			
Radium-226	SM 7500 Ra B M*	0.024 +/- 0.092	0.209	pCi/l	03/16/17	03/20/17	SD
Radium-228	EPA 904*/9320*	0.660 +/- 0.422	0.553	pCi/l	03/09/17	03/16/17	JR

Lab ID : 20170165-03
Client ID : BMW-28
Date Sampled : 2/23/2017 2:20:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium		1.00 +/- 0.517	0.618	pCi/l			
Radium-226	SM 7500 Ra B M*	0.168 +/- 0.156	0.161	pCi/l	03/16/17	03/20/17	SD
Radium-228	EPA 904*/9320*	0.835 +/- 0.361	0.457	pCi/l	03/09/17	03/16/17	JR



Client : DHL Analytical, Inc.
Client Project : 1702267
Lab Number : 20170165
Date Reported : 03/24/17
Date Received : 03/01/17
Page Number : 3 of 3

QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.009	105.0			NC	0.272	92.9	99.3	6.5	R1203
Radium-228	0.655	88.3			NC	0.657	99.5	87.0	11.0	R3933

Lab Approval:

Ron Eidson
Director of Radiochemistry

SAMPLE LOGIN

Date Received: 3/1/2017 2:12:51

Lab Number: 20170165

Due: 3/29/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170165-01 B	BMW-26	NPW	02/23/17	Plastic	1 L	HNO3, pH < 2	☐	Yes	Yes
20170165-01 A	BMW-26	NPW	02/23/17	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20170165-02 B	BMW-27	NPW	02/23/17	Plastic	1 L	HNO3, pH < 2	☐	Yes	Yes
20170165-02 A	BMW-27	NPW	02/23/17	Plastic	500 ml	HNO3, pH < 2	☐	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20170165-03 B	BMW-28	NPW	02/23/17	Plastic	1 L	HNO3, pH < 2	☐	Yes	Yes
20170165-03 A	BMW-28	NPW	02/23/17	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 ☒ Temperature: 10 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 3/1/17
 QA or Designee Review: [Signature] DATE 03/01/17
 Sample Custodian Review: [Signature] DATE 3/1/17

Project Notes:

DHL Analytical, Inc.

2300 Double Creek Drive

Round Rock, TX 78664

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1702267

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

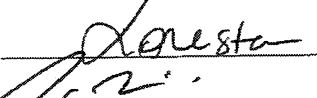
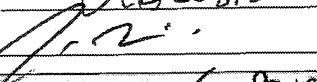
Acct #: DHLRRTX

27-Feb-17

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	BM7500Ra-B M				
BMW-26	Aqueous	-01B	02/23/17 12:15 PM	1LHDPEHNO3	1					
BMW-26	Aqueous	-01C	02/23/17 12:15 PM	500HDPEHNO3		1				
BMW-27	Aqueous	-02B	02/23/17 01:15 PM	1LHDPEHNO3	1					
BMW-27	Aqueous	-02C	02/23/17 01:15 PM	500HDPEHNO3		1				
BMW-28	Aqueous	-03B	02/23/17 02:20 PM	1LHDPEHNO3	1					
BMW-28	Aqueous	-03C	02/23/17 02:20 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

	Date/Time		Date/Time
Relinquished by: 	4/22/17 1730	Received by: 	4/22/17 1730
Relinquished by: _____	_____	Received by: 	3/11/17 1412

C8 93585 2017065



April 25, 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 - A-1 Landfill

Order No.: 1703205

Dear Will Vienne:

DHL Analytical, Inc. received 3 sample(s) on 3/25/2017 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,

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: T104704211-17-18



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Subcontract Report 1703205	32

CLIENT: PSW
ADDRESS: 2201 DOUBLE CREEK DR ROUND ROCK TX 78147
PHONE: 512-671-3434 FAX/E-MAIL: 512-671-3446
DATA REPORTED TO: WILL VIENNE
ADDITIONAL REPORT COPIES TO:

DATE: 3-24-17 PAGE 1 OF 1
PO #: 5164-F DHL WORK ORDER #: 1703205
PROJECT LOCATION OR NAME: LUMINANT- A-1 LANDFILL
CLIENT PROJECT #: 5164-F COLLECTOR: J. BRANTON

[illegible]

John Dupont

From: Sara Taube [Sara.Taube@pbwtio.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

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 3/25/2017

Work Order Number 1703205

Received by AH

Checklist completed by: [Signature] 3/27/2017

Signature

Date

Reviewed by [Signature] 3/27/2017

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 ☐	2.9 °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? <u>No</u>		Checked by <u>[Signature]</u>
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 - A-1 Landfill
Lab Order: 1703205

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 3/25/17. A total of 3 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 3/29/17 the matrix spike recovery was slightly below control limits for Lithium. This is 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 this analyte. No further corrective actions were taken.

For Metals analysis performed on 3/29/17 the PDS recovery was slightly below control limits for Lithium. This is flagged accordingly. The serial dilution was within control limits for this analyte. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 3/27/17 the matrix spike and matrix spike duplicate recoveries were slightly above control limits for Sulfate. 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 this analyte. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A-1 Landfill
Lab Order: 1703205**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1703205-01	BMW-26		03/24/17 09:30 AM	3/25/2017
1703205-02	BMW-27		03/24/17 10:20 AM	3/25/2017
1703205-03	BMW-28		03/24/17 11:35 AM	3/25/2017

LUMINANT

Lab Order: 1703205
Client: Pastor, Behling & Wheeler
Project: Luminant - A-1 Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1703205-01A	BMW-26	03/24/17 09:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-26	03/24/17 09:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-26	03/24/17 09:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-26	03/24/17 09:30 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/27/17 11:49 AM	79718
1703205-01D	BMW-26	03/24/17 09:30 AM	Aqueous	E300	Anion Preparation	03/27/17 11:42 AM	79708
	BMW-26	03/24/17 09:30 AM	Aqueous	E300	Anion Preparation	03/27/17 11:42 AM	79708
	BMW-26	03/24/17 09:30 AM	Aqueous	M4500-H+ B	pH Preparation	03/27/17 11:00 AM	79716
	BMW-26	03/24/17 09:30 AM	Aqueous	M2540C	TDS Preparation	03/29/17 03:42 PM	79764
1703205-02A	BMW-27	03/24/17 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-27	03/24/17 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-27	03/24/17 10:20 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-27	03/24/17 10:20 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/27/17 11:49 AM	79718
1703205-02D	BMW-27	03/24/17 10:20 AM	Aqueous	E300	Anion Preparation	03/27/17 11:42 AM	79708
	BMW-27	03/24/17 10:20 AM	Aqueous	E300	Anion Preparation	03/27/17 11:42 AM	79708
	BMW-27	03/24/17 10:20 AM	Aqueous	M4500-H+ B	pH Preparation	03/27/17 11:00 AM	79716
	BMW-27	03/24/17 10:20 AM	Aqueous	M2540C	TDS Preparation	03/29/17 03:42 PM	79764
1703205-03A	BMW-28	03/24/17 11:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-28	03/24/17 11:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-28	03/24/17 11:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/27/17 09:31 AM	79714
	BMW-28	03/24/17 11:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	03/27/17 11:49 AM	79718
1703205-03D	BMW-28	03/24/17 11:35 AM	Aqueous	E300	Anion Preparation	03/27/17 11:42 AM	79708
	BMW-28	03/24/17 11:35 AM	Aqueous	E300	Anion Preparation	03/27/17 11:42 AM	79708
	BMW-28	03/24/17 11:35 AM	Aqueous	M4500-H+ B	pH Preparation	03/27/17 11:00 AM	79716
	BMW-28	03/24/17 11:35 AM	Aqueous	M2540C	TDS Preparation	03/29/17 03:42 PM	79764

Lab Order: 1703205
Client: Pastor, Behling & Wheeler
Project: Luminant - A-1 Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1703205-01A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	79718	1	03/28/17 01:43 PM	CETAC2_HG_170328 B
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	1	03/29/17 12:15 PM	ICP-MS5_170329C
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	1	03/31/17 11:26 AM	ICP-MS5_170331B
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	50	03/31/17 11:46 AM	ICP-MS5_170331B
1703205-01D	BMW-26	Aqueous	E300	Anions by IC method - Water	79708	1	03/27/17 12:03 PM	IC2_170327A
	BMW-26	Aqueous	E300	Anions by IC method - Water	79708	10	03/27/17 01:38 PM	IC2_170327A
	BMW-26	Aqueous	M4500-H+ B	pH	79716	1	03/27/17 12:21 PM	TITRATOR_170327A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	79764	1	03/30/17 08:46 AM	WC_170329D
1703205-02A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	79718	1	03/28/17 01:45 PM	CETAC2_HG_170328 B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	50	03/31/17 11:49 AM	ICP-MS5_170331B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	1	03/29/17 12:49 PM	ICP-MS5_170329C
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	1	03/31/17 11:35 AM	ICP-MS5_170331B
1703205-02D	BMW-27	Aqueous	E300	Anions by IC method - Water	79708	10	03/27/17 01:53 PM	IC2_170327A
	BMW-27	Aqueous	E300	Anions by IC method - Water	79708	1	03/27/17 12:18 PM	IC2_170327A
	BMW-27	Aqueous	M4500-H+ B	pH	79716	1	03/27/17 12:26 PM	TITRATOR_170327A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	79764	1	03/30/17 08:46 AM	WC_170329D
1703205-03A	BMW-28	Aqueous	SW7470A	Mercury Total: Aqueous	79718	1	03/28/17 01:48 PM	CETAC2_HG_170328 B
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	1	03/29/17 12:51 PM	ICP-MS5_170329C
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	1	03/31/17 11:37 AM	ICP-MS5_170331B
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	79714	50	03/31/17 11:51 AM	ICP-MS5_170331B
1703205-03D	BMW-28	Aqueous	E300	Anions by IC method - Water	79708	1	03/27/17 12:32 PM	IC2_170327A
	BMW-28	Aqueous	E300	Anions by IC method - Water	79708	10	03/27/17 02:08 PM	IC2_170327A
	BMW-28	Aqueous	M4500-H+ B	pH	79716	1	03/27/17 12:28 PM	TITRATOR_170327A
	BMW-28	Aqueous	M2540C	Total Dissolved Solids	79764	1	03/30/17 08:46 AM	WC_170329D

DHL Analytical, Inc.

Date: 25-Apr-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A-1 Landfill
Project No: 5164-F
Lab Order: 1703205

Client Sample ID: BMW-26
Lab ID: 1703205-01
Collection Date: 03/24/17 09:30 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: SP			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/29/17 12:15 PM
Arsenic	0.0107	0.00200	0.00500		mg/L	1	03/29/17 12:15 PM
Barium	0.0371	0.00300	0.0100		mg/L	1	03/29/17 12:15 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/31/17 11:26 AM
Boron	0.440	0.0100	0.0300		mg/L	1	03/31/17 11:26 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/29/17 12:15 PM
Calcium	215	5.00	15.0		mg/L	50	03/31/17 11:46 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/29/17 12:15 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/29/17 12:15 PM
Lead	0.000742	0.000300	0.00100	J	mg/L	1	03/29/17 12:15 PM
Lithium	0.0964	0.00500	0.0100		mg/L	1	03/29/17 12:15 PM
Molybdenum	0.00461	0.00200	0.00500	J	mg/L	1	03/29/17 12:15 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/29/17 12:15 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/29/17 12:15 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/28/17 01:43 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	112	3.00	10.0		mg/L	10	03/27/17 01:38 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/27/17 12:03 PM
Sulfate	610	10.0	30.0		mg/L	10	03/27/17 01:38 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.42	0	0		pH Units@20.6°C	1	03/27/17 12:21 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	1690	50.0	50.0		mg/L	1	03/30/17 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: 25-Apr-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A-1 Landfill
Project No: 5164-F
Lab Order: 1703205

Client Sample ID: BMW-27
Lab ID: 1703205-02
Collection Date: 03/24/17 10:20 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: SP			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	03/29/17 12:49 PM
Arsenic	0.00319	0.00200	0.00500	J	mg/L	1	03/29/17 12:49 PM
Barium	0.0296	0.00300	0.0100		mg/L	1	03/29/17 12:49 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/31/17 11:35 AM
Boron	0.304	0.0100	0.0300		mg/L	1	03/31/17 11:35 AM
Cadmium	0.000776	0.000300	0.00100	J	mg/L	1	03/29/17 12:49 PM
Calcium	120	5.00	15.0		mg/L	50	03/31/17 11:49 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/29/17 12:49 PM
Cobalt	0.222	0.00300	0.00500		mg/L	1	03/29/17 12:49 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/29/17 12:49 PM
Lithium	0.0474	0.00500	0.0100		mg/L	1	03/29/17 12:49 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	03/29/17 12:49 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	03/29/17 12:49 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/29/17 12:49 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/28/17 01:45 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	132	3.00	10.0		mg/L	10	03/27/17 01:53 PM
Fluoride	0.738	0.100	0.400		mg/L	1	03/27/17 12:18 PM
Sulfate	1190	10.0	30.0		mg/L	10	03/27/17 01:53 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	6.28	0	0		pH Units@20.8°C	1	03/27/17 12:26 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2100	50.0	50.0		mg/L	1	03/30/17 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: 25-Apr-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A-1 Landfill
Project No: 5164-F
Lab Order: 1703205

Client Sample ID: BMW-28
Lab ID: 1703205-03
Collection Date: 03/24/17 11:35 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: SP			
Antimony	0.00121	0.000800	0.00250	J	mg/L	1	03/29/17 12:51 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	03/29/17 12:51 PM
Barium	0.0460	0.00300	0.0100		mg/L	1	03/29/17 12:51 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	03/31/17 11:37 AM
Boron	1.14	0.0100	0.0300		mg/L	1	03/31/17 11:37 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	03/29/17 12:51 PM
Calcium	242	5.00	15.0		mg/L	50	03/31/17 11:51 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	03/29/17 12:51 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	03/29/17 12:51 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	03/29/17 12:51 PM
Lithium	0.100	0.00500	0.0100		mg/L	1	03/29/17 12:51 PM
Molybdenum	0.00773	0.00200	0.00500		mg/L	1	03/29/17 12:51 PM
Selenium	0.00208	0.00200	0.00500	J	mg/L	1	03/29/17 12:51 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	03/29/17 12:51 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	03/28/17 01:48 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	121	3.00	10.0		mg/L	10	03/27/17 02:08 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	03/27/17 12:32 PM
Sulfate	1350	10.0	30.0		mg/L	10	03/27/17 02:08 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.51	0	0		pH Units@20.8°C	1	03/27/17 12:28 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2580	50.0	50.0		mg/L	1	03/30/17 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: 1703205

Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170328B

The QC data in batch 79718 applies to the following samples: 1703205-01A, 1703205-02A, 1703205-03A

Sample ID	MB-79718	Batch ID:	79718	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 12:44:31 PM	Prep Date:	3/27/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-79718	Batch ID:	79718	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 12:46:47 PM	Prep Date:	3/27/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00206 0.000200 0.00200 0 103 85 115

Sample ID	LCSD-79718	Batch ID:	79718	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 12:49:03 PM	Prep Date:	3/27/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00201 0.000200 0.00200 0 101 85 115 2.46 15

Sample ID	1703157-29C SD	Batch ID:	79718	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 1:00:22 PM	Prep Date:	3/27/2017			
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	1703157-29C PDS	Batch ID:	79718	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 1:02:38 PM	Prep Date:	3/27/2017			
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	1703157-29C MS	Batch ID:	79718	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 1:04:54 PM	Prep Date:	3/27/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00221 0.000200 0.00200 0 110 80 120

Sample ID	1703157-29C MSD	Batch ID:	79718	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 1:07:10 PM	Prep Date:	3/27/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00219 0.000200 0.00200 0 110 80 120 0.909 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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170328B

Sample ID	ICV-170328	Batch ID:	R91128	TestNo:	SW7470A	Units:	mg/L			
SampType:	ICV	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 12:39:57 PM	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	CCV1-170328	Batch ID:	R91128	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_170328	Analysis Date:	3/28/2017 1:25:20 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00203	0.000200	0.00200	0	102	90	110			

Sample ID	CCV2-170328			Batch ID:	R91128		TestNo:	SW7470A		Units:	mg/L	
SampType:	CCV			Run ID:	CETAC2_HG_170328		Analysis Date:	3/28/2017 1:50:22 PM		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			

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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170329C

The QC data in batch 79714 applies to the following samples: 1703205-01A, 1703205-02A, 1703205-03A

Sample ID	MB-79714		Batch ID:	79714		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS5_170329C		Analysis Date:	3/29/2017 12:08:00 PM		Prep Date:	3/27/2017	
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
Lithium	<0.00500	0.0100
Molybdenum	<0.00200	0.00500
Selenium	<0.00200	0.00500
Thallium	<0.000500	0.00150

Sample ID	LCS-79714		Batch ID:	79714		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS5_170329C		Analysis Date:	3/29/2017 12:10:00 PM		Prep Date:	3/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.193	0.00250	0.200	0	96.7	80	120
Arsenic	0.205	0.00500	0.200	0	103	80	120
Barium	0.197	0.0100	0.200	0	98.4	80	120
Cadmium	0.202	0.00100	0.200	0	101	80	120
Calcium	5.06	0.300	5.00	0	101	80	120
Chromium	0.203	0.00500	0.200	0	102	80	120
Cobalt	0.211	0.00500	0.200	0	106	80	120
Lead	0.198	0.00100	0.200	0	98.9	80	120
Lithium	0.189	0.0100	0.200	0	94.3	80	120
Molybdenum	0.199	0.00500	0.200	0	99.6	80	120
Selenium	0.208	0.00500	0.200	0	104	80	120
Thallium	0.195	0.00150	0.200	0	97.7	80	120

Sample ID	LCSD-79714		Batch ID:	79714		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD		Run ID:	ICP-MS5_170329C		Analysis Date:	3/29/2017 12:12:00 PM		Prep Date:	3/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.190	0.00250	0.200	0	95.0	80	120	1.77	15
Arsenic	0.199	0.00500	0.200	0	99.7	80	120	2.81	15
Barium	0.197	0.0100	0.200	0	98.5	80	120	0.143	15
Cadmium	0.198	0.00100	0.200	0	99.1	80	120	1.85	15
Calcium	4.95	0.300	5.00	0	99.0	80	120	2.18	15
Chromium	0.199	0.00500	0.200	0	99.6	80	120	1.94	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170329C

Sample ID	LCSD-79714	Batch ID:	79714	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 12:12:00 PM	Prep Date:	3/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Cobalt	0.207	0.00500	0.200	0	103	80	120	2.19	15	
Lead	0.195	0.00100	0.200	0	97.4	80	120	1.54	15	
Lithium	0.178	0.0100	0.200	0	89.0	80	120	5.79	15	
Molybdenum	0.195	0.00500	0.200	0	97.6	80	120	1.99	15	
Selenium	0.201	0.00500	0.200	0	101	80	120	3.59	15	
Thallium	0.195	0.00150	0.200	0	97.5	80	120	0.163	15	

Sample ID	1703205-01A SD	Batch ID:	79714	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 12:17:00 PM	Prep Date:	3/27/2017			
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	0.0107				0	10	
Barium	0.0377	0.0500	0	0.0371				1.74	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	0.000742				0	10	
Lithium	0.101	0.0500	0	0.0964				4.32	10	
Molybdenum	<0.0100	0.0250	0	0.00461				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID	1703205-01A PDS	Batch ID:	79714	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 12:35:00 PM	Prep Date:	3/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.188	0.00250	0.200	0	94.1	80	120			
Arsenic	0.195	0.00500	0.200	0.0107	92.2	80	120			
Barium	0.222	0.0100	0.200	0.0371	92.6	80	120			
Cadmium	0.179	0.00100	0.200	0	89.5	80	120			
Chromium	0.184	0.00500	0.200	0	91.9	80	120			
Cobalt	0.182	0.00500	0.200	0	91.2	80	120			
Lead	0.191	0.00100	0.200	0.000742	95.0	80	120			
Lithium	0.240	0.0100	0.200	0.0964	71.6	80	120			S
Molybdenum	0.184	0.00500	0.200	0.00461	89.6	80	120			
Selenium	0.190	0.00500	0.200	0	94.8	80	120			
Thallium	0.186	0.00150	0.200	0	93.0	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170329C

Sample ID: 1703205-01A MS	Batch ID: 79714	TestNo: SW6020A	Units: mg/L
SampType: MS	Run ID: ICP-MS5_170329C	Analysis Date: 3/29/2017 12:37:00 PM	Prep Date: 3/27/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.189	0.00250	0.200	0	94.3	80	120			
Arsenic	0.198	0.00500	0.200	0.0107	93.8	80	120			
Barium	0.231	0.0100	0.200	0.0371	97.1	80	120			
Cadmium	0.182	0.00100	0.200	0	91.0	80	120			
Calcium	229	0.300	5.00	224	109	80	120			
Chromium	0.186	0.00500	0.200	0	92.9	80	120			
Cobalt	0.186	0.00500	0.200	0	93.1	80	120			
Lead	0.194	0.00100	0.200	0.000742	96.7	80	120			
Lithium	0.253	0.0100	0.200	0.0964	78.2	80	120			S
Molybdenum	0.188	0.00500	0.200	0.00461	91.7	80	120			
Selenium	0.201	0.00500	0.200	0	100	80	120			
Thallium	0.200	0.00150	0.200	0	100	80	120			

Sample ID: 1703205-01A MSD	Batch ID: 79714	TestNo: SW6020A	Units: mg/L
SampType: MSD	Run ID: ICP-MS5_170329C	Analysis Date: 3/29/2017 12:38:00 PM	Prep Date: 3/27/2017

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	1.77	15	
Arsenic	0.202	0.00500	0.200	0.0107	95.6	80	120	1.72	15	
Barium	0.234	0.0100	0.200	0.0371	98.7	80	120	1.36	15	
Cadmium	0.185	0.00100	0.200	0	92.5	80	120	1.67	15	
Calcium	229	0.300	5.00	224	90.9	80	120	0.390	15	
Chromium	0.190	0.00500	0.200	0	95.0	80	120	2.30	15	
Cobalt	0.189	0.00500	0.200	0	94.6	80	120	1.60	15	
Lead	0.196	0.00100	0.200	0.000742	97.5	80	120	0.789	15	
Lithium	0.262	0.0100	0.200	0.0964	83.0	80	120	3.75	15	
Molybdenum	0.189	0.00500	0.200	0.00461	92.1	80	120	0.342	15	
Selenium	0.201	0.00500	0.200	0	101	80	120	0.161	15	
Thallium	0.206	0.00150	0.200	0	103	80	120	2.65	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170329C

Sample ID	ICV-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 10:27:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.0981	0.00250	0.100	0	98.1	90	110			
Arsenic	0.101	0.00500	0.100	0	101	90	110			
Barium	0.101	0.0100	0.100	0	101	90	110			
Cadmium	0.101	0.00100	0.100	0	101	90	110			
Calcium	2.43	0.300	2.50	0	97.2	90	110			
Chromium	0.106	0.00500	0.100	0	106	90	110			
Cobalt	0.104	0.00500	0.100	0	104	90	110			
Lead	0.0991	0.00100	0.100	0	99.1	90	110			
Lithium	0.100	0.0100	0.100	0	100	90	110			
Molybdenum	0.0961	0.00500	0.100	0	96.1	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.0967	0.00150	0.100	0	96.7	90	110			

Sample ID	LCVL-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 10:32:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00189	0.00250	0.00200	0	94.6	70	130			
Arsenic	0.00484	0.00500	0.00500	0	96.7	70	130			
Barium	0.00499	0.0100	0.00500	0	99.9	70	130			
Cadmium	0.000993	0.00100	0.00100	0	99.3	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			
Chromium	0.00504	0.00500	0.00500	0	101	70	130			
Cobalt	0.00508	0.00500	0.00500	0	102	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Lithium	0.0112	0.0100	0.0100	0	112	70	130			
Molybdenum	0.00474	0.00500	0.00500	0	94.9	70	130			
Selenium	0.00467	0.00500	0.00500	0	93.5	70	130			
Thallium	0.000990	0.00150	0.00100	0	99.0	70	130			

Sample ID	CCV3-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 11:51:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.193	0.00250	0.200	0	96.7	90	110			
Arsenic	0.203	0.00500	0.200	0	102	90	110			
Barium	0.195	0.0100	0.200	0	97.3	90	110			
Cadmium	0.197	0.00100	0.200	0	98.7	90	110			
Calcium	4.93	0.300	5.00	0	98.6	90	110			
Chromium	0.202	0.00500	0.200	0	101	90	110			
Cobalt	0.207	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170329C

Sample ID	CCV3-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 11:51:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lead	0.197	0.00100	0.200	0	98.7	90	110			
Lithium	0.182	0.0100	0.200	0	91.0	90	110			
Molybdenum	0.192	0.00500	0.200	0	96.1	90	110			
Selenium	0.207	0.00500	0.200	0	104	90	110			
Thallium	0.206	0.00150	0.200	0	103	90	110			

Sample ID	LCVL3-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 11:55:00 AM	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	0.00488	0.00500	0.00500	0	97.5	70	130			
Barium	0.00486	0.0100	0.00500	0	97.3	70	130			
Cadmium	0.000993	0.00100	0.00100	0	99.3	70	130			
Calcium	0.103	0.300	0.100	0	103	70	130			
Chromium	0.00509	0.00500	0.00500	0	102	70	130			
Cobalt	0.00512	0.00500	0.00500	0	102	70	130			
Lead	0.00100	0.00100	0.00100	0	100	70	130			
Lithium	0.00934	0.0100	0.0100	0	93.4	70	130			
Molybdenum	0.00470	0.00500	0.00500	0	94.0	70	130			
Selenium	0.00526	0.00500	0.00500	0	105	70	130			
Thallium	0.000974	0.00150	0.00100	0	97.4	70	130			

Sample ID	CCV4-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 12:40:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.192	0.00250	0.200	0	95.9	90	110			
Arsenic	0.197	0.00500	0.200	0	98.5	90	110			
Barium	0.197	0.0100	0.200	0	98.5	90	110			
Cadmium	0.190	0.00100	0.200	0	94.8	90	110			
Calcium	4.93	0.300	5.00	0	98.7	90	110			
Chromium	0.197	0.00500	0.200	0	98.3	90	110			
Cobalt	0.202	0.00500	0.200	0	101	90	110			
Lead	0.196	0.00100	0.200	0	98.0	90	110			
Lithium	0.182	0.0100	0.200	0	91.0	90	110			
Molybdenum	0.181	0.00500	0.200	0	90.5	90	110			
Selenium	0.209	0.00500	0.200	0	105	90	110			
Thallium	0.207	0.00150	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170329C

Sample ID	LCVL4-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 12:44:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00193	0.00250	0.00200	0	96.4	70	130			
Arsenic	0.00467	0.00500	0.00500	0	93.4	70	130			
Barium	0.00480	0.0100	0.00500	0	96.0	70	130			
Cadmium	0.000925	0.00100	0.00100	0	92.5	70	130			
Calcium	0.0967	0.300	0.100	0	96.7	70	130			
Chromium	0.00432	0.00500	0.00500	0	86.4	70	130			
Cobalt	0.00489	0.00500	0.00500	0	97.7	70	130			
Lead	0.000997	0.00100	0.00100	0	99.7	70	130			
Lithium	0.0103	0.0100	0.0100	0	103	70	130			
Molybdenum	0.00444	0.00500	0.00500	0	88.9	70	130			
Selenium	0.00561	0.00500	0.00500	0	112	70	130			
Thallium	0.000968	0.00150	0.00100	0	96.8	70	130			

Sample ID	CCV5-170329			Batch ID:	R91184		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV			Run ID:	ICP-MS5_170329C		Analysis Date:	3/29/2017 12:54:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.192	0.00250	0.200	0	96.2	90	110			
Arsenic	0.197	0.00500	0.200	0	98.7	90	110			
Barium	0.199	0.0100	0.200	0	99.3	90	110			
Cadmium	0.192	0.00100	0.200	0	96.0	90	110			
Chromium	0.198	0.00500	0.200	0	99.1	90	110			
Cobalt	0.203	0.00500	0.200	0	102	90	110			
Lead	0.198	0.00100	0.200	0	98.8	90	110			
Lithium	0.185	0.0100	0.200	0	92.5	90	110			
Molybdenum	0.183	0.00500	0.200	0	91.3	90	110			
Selenium	0.208	0.00500	0.200	0	104	90	110			
Thallium	0.206	0.00150	0.200	0	103	90	110			

Sample ID	LCVL5-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 1:10:00 PM	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	0.00464	0.00500	0.00500	0	92.8	70	130			
Barium	0.00471	0.0100	0.00500	0	94.2	70	130			
Cadmium	0.000934	0.00100	0.00100	0	93.4	70	130			
Chromium	0.00455	0.00500	0.00500	0	91.0	70	130			
Cobalt	0.00493	0.00500	0.00500	0	98.7	70	130			
Lead	0.000956	0.00100	0.00100	0	95.6	70	130			
Lithium	0.00998	0.0100	0.0100	0	99.8	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170329C

Sample ID	LCVL5-170329	Batch ID:	R91184	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170329C	Analysis Date:	3/29/2017 1:10:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.00447	0.00500	0.00500	0	89.4	70	130			
Selenium	0.00510	0.00500	0.00500	0	102	70	130			
Thallium	0.000931	0.00150	0.00100	0	93.1	70	130			

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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170331B

The QC data in batch 79714 applies to the following samples: 1703205-01A, 1703205-02A, 1703205-03A

Sample ID	MB-79714		Batch ID:	79714		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS5_170331B		Analysis Date:	3/31/2017 11:19:00 AM		Prep Date:	3/27/2017	
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	<0.000300	0.00100								
Boron	<0.0100	0.0300								

Sample ID	LCS-79714			Batch ID:	79714		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS5_170331B		Analysis Date:	3/31/2017 11:21:00 AM		Prep Date:	3/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	0.197	0.00100	0.200	0	98.4	80	120			
Boron	0.196	0.0300	0.200	0	98.1	80	120			

Sample ID	LCSD-79714			Batch ID:	79714		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS5_170331B		Analysis Date:	3/31/2017 11:23:00 AM		Prep Date:	3/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	0.196	0.00100	0.200	0	98.0	80	120	0.379	15	
Boron	0.191	0.0300	0.200	0	95.3	80	120	2.97	15	

Sample ID	1703205-01A SD	Batch ID:	79714	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 11:28:00 AM	Prep Date:	3/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	<0.00150	0.00500	0	0				0	10	
Boron	0.483	0.150	0	0.440				9.44	10	

Sample ID	1703205-01A PDS		Batch ID:	79714		TestNo:	SW6020A		Units:	mg/L		
SampType:	PDS		Run ID:	ICP-MS5_170331B		Analysis Date:	3/31/2017 11:39:00 AM		Prep Date:	3/27/2017		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.189	0.00100	0.200	0	94.6	80	120			
Boron	0.639	0.0300	0.200	0.440	99.4	80	120			

Sample ID	1703205-01A MS			Batch ID:	79714			TestNo:	SW6020A			Units:	mg/L		
SampType:	MS			Run ID:	ICP-MS5_170331B			Analysis Date:	3/31/2017 11:41:00 AM			Prep Date:	3/27/2017		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Beryllium	0.191	0.00100	0.200	0	95.7	80	120			
Boron	0.657	0.0300	0.200	0.440	109	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170331B

Sample ID	1703205-01A MSD	Batch ID:	79714	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 11:42:00 AM	Prep Date:	3/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.193	0.00100	0.200	0	96.7	80	120	0.987	15	
Boron	0.665	0.0300	0.200	0.440	113	80	120	1.18	15	

Sample ID	1703205-01A SD	Batch ID:	79714	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 11:48:00 AM	Prep Date:	3/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	210	75.0	0	215				2.31	10	

Sample ID	1703205-01A PDS	Batch ID:	79714	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 11:53:00 AM	Prep Date:	3/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	445	15.0	250	215	92.0	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170331B

Sample ID	ICV-170331	Batch ID:	R91201	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 10:01:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.0958	0.00100	0.100	0	95.8	90	110			
Boron	0.0975	0.0300	0.100	0	97.5	90	110			
Calcium	2.38	0.300	2.50	0	95.0	90	110			

Sample ID	LCVL-170331	Batch ID:	R91201	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 10:05:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.000889	0.00100	0.00100	0	88.9	70	130			
Boron	0.0217	0.0300	0.0200	0	108	70	130			
Calcium	0.102	0.300	0.100	0	102	70	130			

Sample ID	CCV1-170331	Batch ID:	R91201	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 10:59:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.200	0.00100	0.200	0	100	90	110			
Boron	0.198	0.0300	0.200	0	99.0	90	110			
Calcium	4.93	0.300	5.00	0	98.7	90	110			

Sample ID	LCVL1-170331	Batch ID:	R91201	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 11:12:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00108	0.00100	0.00100	0	108	70	130			
Boron	0.0227	0.0300	0.0200	0	114	70	130			
Calcium	0.0979	0.300	0.100	0	97.9	70	130			

Sample ID	CCV2-170331			Batch ID:	R91201		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV			Run ID:	ICP-MS5_170331B		Analysis Date:	3/31/2017 12:00:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	0.209	0.00100	0.200	0	104	90	110			
Boron	0.204	0.0300	0.200	0	102	90	110			
Calcium	4.89	0.300	5.00	0	97.8	90	110			

Sample ID	LCVL2-170331			Batch ID:	R91201		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCVL			Run ID:	ICP-MS5_170331B		Analysis Date:	3/31/2017 12:06:00 PM		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			

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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170331B

Sample ID	LCVL2-170331	Batch ID:	R91201	TestNo:	SW6020A	Units:	mg/L
SampType:	LCVL	Run ID:	ICP-MS5_170331B	Analysis Date:	3/31/2017 12:06:00 PM	Prep Date:	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
Boron		0.0235	0.0300	0.0200	0	117	70 130
Calcium		0.106	0.300	0.100	0	106	70 130

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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_170327A

The QC data in batch 79708 applies to the following samples: 1703205-01D, 1703205-02D, 1703205-03D

Sample ID	MB-79708		Batch ID:	79708		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC2_170327A		Analysis Date:	3/27/2017 10:37:51 AM		Prep Date:	3/27/2017	
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	LCS-79708		Batch ID:	79708		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC2_170327A		Analysis Date:	3/27/2017 10:52:27 AM		Prep Date:	3/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.80	1.00	10.00	0	98.0	90	110			
Fluoride	3.81	0.400	4.000	0	95.4	90	110			
Sulfate	29.5	3.00	30.00	0	98.4	90	110			

Sample ID	LCSD-79708		Batch ID:	79708		TestNo:	E300		Units:	mg/L	
SampType:	LCSD		Run ID:	IC2_170327A		Analysis Date:	3/27/2017 11:07:04 AM		Prep Date:	3/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.81	1.00	10.00	0	98.1	90	110	0.068	20	
Fluoride	3.83	0.400	4.000	0	95.8	90	110	0.495	20	
Sulfate	29.5	3.00	30.00	0	98.4	90	110	0.079	20	

Sample ID	1703205-01DMS		Batch ID:	79708		TestNo:	E300		Units:	mg/L	
SampType:	MS		Run ID:	IC2_170327A		Analysis Date:	3/27/2017 2:46:41 PM		Prep Date:	3/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	314	10.0	200.0	112.1	101	90	110			
Fluoride	198	4.00	200.0	0	99.1	90	110			
Sulfate	832	30.0	200.0	610.0	111	90	110			S

Sample ID	1703205-01DMSD			Batch ID:	79708			TestNo:	E300			Units:	mg/L		
SampType:	MSD			Run ID:	IC2_170327A			Analysis Date:	3/27/2017 3:01:17 PM			Prep Date:	3/27/2017		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Chloride	314	10.0	200.0	112.1	101	90	110	0.017	20	
Fluoride	199	4.00	200.0	0	99.5	90	110	0.378	20	
Sulfate	835	30.0	200.0	610.0	112	90	110	0.314	20	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_170327A

Sample ID	ICV-170327	Batch ID:	R91137	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_170327A	Analysis Date:	3/27/2017 8:52:53 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.5	1.00	25.00	0	102	90	110			
Fluoride	9.80	0.400	10.00	0	98.0	90	110			
Sulfate	76.9	3.00	75.00	0	103	90	110			

Sample ID	CCV1-170327	Batch ID:	R91137	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_170327A	Analysis Date:	3/27/2017 3:15:54 PM	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	3.96	0.400	4.000	0	99.1	90	110			
Sulfate	29.9	3.00	30.00	0	99.6	90	110			

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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170327A

The QC data in batch 79716 applies to the following samples: 1703205-01D, 1703205-02D, 1703205-03D

Sample ID	1703205-01D-DUP	Batch ID:	79716	TestNo:	M4500-H+ B	Units:	pH Units@20.6°C
SampType:	DUP	Run ID:	TITRATOR_170327A	Analysis Date:	3/27/2017 12:24:00 PM	Prep Date:	3/27/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.33	0	0	7.420				1.22	5	

Sample ID	1703206-01B-DUP	Batch ID:	79716	TestNo:	M4500-H+ B	Units:	pH Units@21.1°C
SampType:	DUP	Run ID:	TITRATOR_170327A	Analysis Date:	3/27/2017 12:33:00 PM	Prep Date:	3/27/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.73	0	0	7.740				0.129	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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170327A

Sample ID	ICV-170327	Batch ID:	R91113	TestNo:	M4500-H+ B	Units:	pH Units@20.5°C			
SampType:	ICV	Run ID:	TITRATOR_170327A	Analysis Date:	3/27/2017 11:13:00 AM	Prep Date:	3/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.93	0	10.00	0	99.3	99	101			

Sample ID	CCV1-170327	Batch ID:	R91113	TestNo:	M4500-H+ B	Units:	pH Units@21.5°C			
SampType:	CCV	Run ID:	TITRATOR_170327A	Analysis Date:	3/27/2017 12:45:00 PM	Prep Date:	3/27/2017			
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			

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: 1703205
Project: Luminant - A-1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170329D

The QC data in batch 79764 applies to the following samples: 1703205-01D, 1703205-02D, 1703205-03D

Sample ID	MB-79764	Batch ID:	79764	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_170329D	Analysis Date:	3/30/2017 8:46:00 AM	Prep Date:	3/29/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-79764	Batch ID:	79764	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_170329D	Analysis Date:	3/30/2017 8:46:00 AM	Prep Date:	3/29/2017				
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	1703195-07D-DUP	Batch ID:	79764	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170329D	Analysis Date:	3/30/2017 8:46:00 AM	Prep Date:	3/29/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 12400 200 0 12500 0.642 5

Sample ID	1703206-03C-DUP	Batch ID:	79764	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170329D	Analysis Date:	3/30/2017 8:46:00 AM	Prep Date:	3/29/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 359 10.0 0 368.0 2.48 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: 20170261

This report contains the analytical results for the 3 sample(s) received under chain of custody by ESC Lab Sciences on 3/29/2017 11:08:22 AM. These samples are associated with your 1703205 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.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

Observations / Nonconformances

L898946



Client : DHL Analytical, Inc.
Client Project : 1703205
Lab Number : 20170261
Date Reported : 04/25/17
Date Received : 03/29/17
Page Number : 2 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20170261-01

Client ID : BMW-26

Date Sampled : 3/24/2017 9:30:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		0.518 +/- 0.664	0.808	pCi/l			
Radium-226	SM 7500 Ra B M*	0.335 +/- 0.173	0.181	pCi/l	04/18/17	04/21/17	RE
Radium-228	EPA 904*	0.183 +/- 0.491	0.627	pCi/l	04/12/17	04/20/17	JR

Lab ID : 20170261-02

Client ID : BMW-27

Date Sampled : 3/24/2017 10:20:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		1.00 +/- 0.617	0.873	pCi/l			
Radium-226	SM 7500 Ra B M*	0.414 +/- 0.169	0.148	pCi/l	04/18/17	04/21/17	RE
Radium-228	EPA 904*	0.588 +/- 0.448	0.725	pCi/l	04/12/17	04/20/17	JR

Lab ID : 20170261-03

Client ID : BMW-28

Date Sampled : 3/24/2017 11:35:00 AM

Matrix : NPW

Radiochemical Analyses

Combined Radium		2.21 +/- 0.723	0.619	pCi/l			
Radium-226	SM 7500 Ra B M*	1.04 +/- 0.257	0.096	pCi/l	04/18/17	04/21/17	RE
Radium-228	EPA 904*	1.17 +/- 0.466	0.523	pCi/l	04/12/17	04/20/17	JR



Client : DHL Analytical, Inc.
Client Project : 1703205
Lab Number : 20170261
Date Reported : 04/25/17
Date Received : 03/29/17
Page Number : 3 of 3

QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.122	107.0			NC	1.020	95.7	92.8	3.0	R1213
Radium-228	0.525	88.7			NC	1.260	104.0	86.7	15.3	R3946

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: 1703205

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

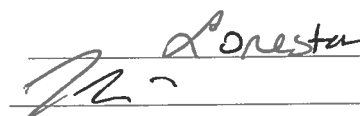
Acct #: DHLRRTX

27-Mar-17

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	M7500Ra-B M				
BMW-26	Aqueous	-01B	03/24/17 09:30 AM	1LHDPEHNO3	1					
BMW-26	Aqueous	-01C	03/24/17 09:30 AM	500HDPEHNO3		1				
BMW-27	Aqueous	-02B	03/24/17 10:20 AM	1LHDPEHNO3	1					
BMW-27	Aqueous	-02C	03/24/17 10:20 AM	500HDPEHNO3		1				
BMW-28	Aqueous	-03B	03/24/17 11:35 AM	1LHDPEHNO3	1					
BMW-28	Aqueous	-03C	03/24/17 11:35 AM	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

Relinquished by: 	Date/Time: 3/27/17 1730	Received by: 	Date/Time: 3/27/17 1730
Relinquished by: _____	_____	Received by: _____	Date/Time: 3/29/17 1108

SAMPLE LOGIN

Date Received: 3/29/2017 11:08:2

Lab Number: 20170261

Due: 4/26/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170261-01 B	BMW-26	NPW	03/24/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170261-01 A	BMW-26	NPW	03/24/17	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20170261-02 B	BMW-27	NPW	03/24/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170261-02 A	BMW-27	NPW	03/24/17	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						
20170261-03 B	BMW-28	NPW	03/24/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170261-03 A	BMW-28	NPW	03/24/17	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*/9320*						

CONTAINER INSPECTION

Coolers 03/29/17 Custody Seals Broken ☒ Temperature: 15C 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 3/29/17

QA or Designee Review: Raymond Thomas DATE 03/29/17

Sample Custodian Review: [Signature] DATE 3/29/17

Project Notes:



May 26, 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 - A1 Landfill

Order No.: 1704272

Dear Will Vienne:

DHL Analytical, Inc. received 3 sample(s) on 4/26/2017 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,

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: T104704211-17-19



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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 75003

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: 4-24-17 PAGE 1 OF 1
PO #: 5164-F DHL WORK ORDER #: 1704272
PROJECT LOCATION OR NAME: LUMINANT- AL-LANDFILL
CLIENT PROJECT #: 5164-F COLLECTOR: J. BRAYTON

Authorize 5% surcharge for TRRP Report?

☐ Yes ☐ No

S=SOIL W=WATER P=PAINT
A=AIR SL=SLUDGE
L=LIQUID O=OTHER
SE=SEDIMENT SO=SOLID

PRESERVATION

of Containers
HCl
HNO₃
H₂SO₄ □ NaOH □
ICE
UNPRESERVED

ANALYSES

BTEX □ MTBE □ (METHOD 8021) □
TPH 1005 □ TPH 1006 □ HOLD 1006 □
GRO (METHOD 8015) □ DRO (METHOD 8109) □
VOC 8260 □ VOC 624 □ VOC 8260/5035 □
SVOC 8270 □ PAH 8270 □ HOLD PAH □ SVOC 623 □
8270 PEST □ 623 PEST □ 8082 PCB □ 808 PCB □
8270 OP PEST □ T PHOS □ AMMONIA □
RCRA 6020 □ METALS 200.8 □ DISS. METALS □
PH □ HEX CHROM □ ALKALINITY □
TCAP-SVOC □ ANIONS □
TCAP-METALS □ VOC □ PEST □
RCLO FLASHPOINT □ RCRA 8 □ TX-11 □
TDS □ TSS □ % MOISTURE □
CYANIDE □

FIELD NOTES

Bmw-28
Bmw-26
Bmw-27

01
02
03

4-24-17
1
6

1415
1520
1630

W
W
W

P
P
P

4
4
4

X
X
X

RELINQUISHED BY: (Signature)

RELINQUISHED BY: (Signature)

RELINQUISHED BY: (Signature)

DATE/TIME

DATE/TIME

DATE/TIME

RECEIVED BY: (Signature)

RECEIVED BY: (Signature)

RECEIVED BY: (Signature)

TURN AROUND TIME

RUSH □ CALL FIRST
1 DAY □ CALL FIRST
2 DAY □
NORMAL ☒
OTHER □

LABORATORY USE ONLY:

RECEIVING TEMP: 1.9 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☐ INTACT ☒ NOT USED
CARRIER: ☐ LONE STAR ☐ FEDEX ☐ UPS ☐ OTHER
☐ COURIER DELIVERY
☒ HAND DELIVERED

☐ DHL DISPOSAL @ \$5.00 each

☐ Return

John Dupont

From: Sara Taube [Sara.Taube@pbwtlo.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

Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 4/26/2017

Work Order Number 1704272

Received by JT

Checklist completed by: [Signature] 4/26/2017
Signature Date

Reviewed by: [Initials] 4/26/2017
Initials Date

Carrier name Hand Delivered

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 ☐ 1.9 °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 - A1 Landfill
Lab Order: 1704272

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 4/25/17. A total of 3 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 4/27/17 the matrix spike and matrix spike duplicate recoveries were above control limits for Calcium and/or Thallium. 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 4/27/17 the PDS recovery was above control limits for Calcium. This is flagged accordingly. The serial dilution was within control limits for this analyte. No further corrective actions were taken.

For Metals analysis performed on 4/27/17 and 5/10/17 the RPD for the serial dilution was above control limits for Selenium or Boron. These are flagged accordingly. The PDS was within control limits for these analytes. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A1 Landfill
Lab Order: 1704272**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1704272-01	BMW-28		04/24/17 02:15 PM	4/26/2017
1704272-02	BMW-26		04/24/17 03:20 PM	4/26/2017
1704272-03	BMW-27		04/24/17 04:30 PM	4/26/2017

LUMINANT

Lab Order: 1704272
Client: Pastor, Behling & Wheeler
Project: Luminant - A1 Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1704272-01A	BMW-28	04/24/17 02:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-28	04/24/17 02:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-28	04/24/17 02:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-28	04/24/17 02:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-28	04/24/17 02:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-28	04/24/17 02:15 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/27/17 08:34 AM	80208
1704272-01D	BMW-28	04/24/17 02:15 PM	Aqueous	E300	Anion Preparation	04/27/17 08:55 AM	80209
	BMW-28	04/24/17 02:15 PM	Aqueous	E300	Anion Preparation	04/27/17 08:55 AM	80209
	BMW-28	04/24/17 02:15 PM	Aqueous	M4500-H+ B	pH Preparation	04/27/17 10:10 AM	80215
	BMW-28	04/24/17 02:15 PM	Aqueous	M2540C	TDS Preparation	05/01/17 03:45 PM	80266
1704272-02A	BMW-26	04/24/17 03:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-26	04/24/17 03:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-26	04/24/17 03:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-26	04/24/17 03:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-26	04/24/17 03:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-26	04/24/17 03:20 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/27/17 08:34 AM	80208
1704272-02D	BMW-26	04/24/17 03:20 PM	Aqueous	E300	Anion Preparation	04/27/17 08:55 AM	80209
	BMW-26	04/24/17 03:20 PM	Aqueous	E300	Anion Preparation	04/27/17 08:55 AM	80209
	BMW-26	04/24/17 03:20 PM	Aqueous	M4500-H+ B	pH Preparation	04/27/17 10:10 AM	80215
	BMW-26	04/24/17 03:20 PM	Aqueous	M2540C	TDS Preparation	05/01/17 03:45 PM	80266
1704272-03A	BMW-27	04/24/17 04:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-27	04/24/17 04:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-27	04/24/17 04:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-27	04/24/17 04:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	04/27/17 08:32 AM	80206
	BMW-27	04/24/17 04:30 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	04/27/17 08:34 AM	80208
1704272-03D	BMW-27	04/24/17 04:30 PM	Aqueous	E300	Anion Preparation	04/27/17 08:55 AM	80209
	BMW-27	04/24/17 04:30 PM	Aqueous	E300	Anion Preparation	04/27/17 08:55 AM	80209
	BMW-27	04/24/17 04:30 PM	Aqueous	M4500-H+ B	pH Preparation	04/27/17 10:10 AM	80215

Lab Order: 1704272
Client: Pastor, Behling & Wheeler
Project: Luminant - A1 Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1704272-03D	BMW-27	04/24/17 04:30 PM	Aqueous	M2540C	TDS Preparation	05/01/17 03:45 PM	80266

LUMINANT

Lab Order: 1704272
Client: Pastor, Behling & Wheeler
Project: Luminant - A1 Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1704272-01A	BMW-28	Aqueous	SW7470A	Mercury Total: Aqueous	80208	1	04/28/17 12:56 PM	CETAC2_HG_170428 C
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	50	04/28/17 01:27 PM	ICP-MS4_170428D
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	04/28/17 01:33 PM	ICP-MS4_170428D
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	04/27/17 04:58 PM	ICP-MS5_170427A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	05/09/17 12:04 PM	ICP-MS5_170509A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	05/09/17 03:28 PM	ICP-MS5_170509A
1704272-01D	BMW-28	Aqueous	E300	Anions by IC method - Water	80209	1	04/27/17 11:17 AM	IC3_170427A
	BMW-28	Aqueous	E300	Anions by IC method - Water	80209	10	04/27/17 12:27 PM	IC3_170427A
	BMW-28	Aqueous	M4500-H+ B	pH	80215	1	04/27/17 11:17 AM	TITRATOR_170427A
	BMW-28	Aqueous	M2540C	Total Dissolved Solids	80266	1	05/02/17 08:49 AM	WC_170501A
1704272-02A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	80208	1	04/28/17 12:58 PM	CETAC2_HG_170428 C
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	5	05/10/17 12:07 PM	ICP-MS5_170510A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	50	04/28/17 01:29 PM	ICP-MS4_170428D
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	04/28/17 01:35 PM	ICP-MS4_170428D
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	05/09/17 12:06 PM	ICP-MS5_170509A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	04/27/17 05:00 PM	ICP-MS5_170427A
1704272-02D	BMW-26	Aqueous	E300	Anions by IC method - Water	80209	1	04/27/17 11:38 AM	IC3_170427A
	BMW-26	Aqueous	E300	Anions by IC method - Water	80209	10	04/27/17 01:12 PM	IC3_170427A
	BMW-26	Aqueous	M4500-H+ B	pH	80215	1	04/27/17 11:19 AM	TITRATOR_170427A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	80266	1	05/02/17 08:49 AM	WC_170501A
1704272-03A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	80208	1	04/28/17 01:01 PM	CETAC2_HG_170428 C
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	10	04/28/17 01:31 PM	ICP-MS4_170428D
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	04/28/17 01:37 PM	ICP-MS4_170428D
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	04/27/17 05:02 PM	ICP-MS5_170427A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80206	1	05/09/17 12:08 PM	ICP-MS5_170509A
1704272-03D	BMW-27	Aqueous	E300	Anions by IC method - Water	80209	1	04/27/17 11:58 AM	IC3_170427A

Lab Order: 1704272
Client: Pastor, Behling & Wheeler
Project: Luminant - A1 Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1704272-03D	BMW-27	Aqueous	E300	Anions by IC method - Water	80209	10	04/27/17 01:32 PM	IC3_170427A
	BMW-27	Aqueous	M4500-H+ B	pH	80215	1	04/27/17 11:20 AM	TITRATOR_170427A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	80266	1	05/02/17 08:49 AM	WC_170501A

LUMINANT

DHL Analytical, Inc.

Date: 26-May-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A1 Landfill
Project No: 5164-F
Lab Order: 1704272

Client Sample ID: BMW-28
Lab ID: 1704272-01
Collection Date: 04/24/17 02:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	0.00113	0.000800	0.00250	J	mg/L	1	04/27/17 04:58 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 04:58 PM
Barium	0.0470	0.00300	0.0100		mg/L	1	04/27/17 04:58 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/28/17 01:33 PM
Boron	1.16	0.0100	0.0300		mg/L	1	05/09/17 12:04 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/27/17 04:58 PM
Calcium	266	5.00	15.0		mg/L	50	04/28/17 01:27 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 04:58 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/27/17 04:58 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/27/17 04:58 PM
Lithium	0.109	0.00500	0.0100		mg/L	1	04/28/17 01:33 PM
Molybdenum	0.00766	0.00200	0.00500		mg/L	1	04/27/17 04:58 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 04:58 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/27/17 04:58 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/28/17 12:56 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	121	3.00	10.0		mg/L	10	04/27/17 12:27 PM
Fluoride	0.190	0.100	0.400	J	mg/L	1	04/27/17 11:17 AM
Sulfate	1330	10.0	30.0		mg/L	10	04/27/17 12:27 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.44	0	0		pH Units@19.8°C	1	04/27/17 11:17 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2980	50.0	50.0		mg/L	1	05/02/17 08:49 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: 26-May-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A1 Landfill
Project No: 5164-F
Lab Order: 1704272

Client Sample ID: BMW-26
Lab ID: 1704272-02
Collection Date: 04/24/17 03:20 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/27/17 05:00 PM
Arsenic	0.00732	0.00200	0.00500		mg/L	1	04/27/17 05:00 PM
Barium	0.0322	0.00300	0.0100		mg/L	1	04/27/17 05:00 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/28/17 01:35 PM
Boron	0.495	0.0100	0.0300		mg/L	1	05/09/17 12:06 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	04/27/17 05:00 PM
Calcium	218	5.00	15.0		mg/L	50	04/28/17 01:29 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 05:00 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	04/27/17 05:00 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/27/17 05:00 PM
Lithium	0.0990	0.00500	0.0100		mg/L	1	04/28/17 01:35 PM
Molybdenum	0.00303	0.00200	0.00500	J	mg/L	1	04/27/17 05:00 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 05:00 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/27/17 05:00 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/28/17 12:58 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	111	3.00	10.0		mg/L	10	04/27/17 01:12 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	04/27/17 11:38 AM
Sulfate	576	10.0	30.0		mg/L	10	04/27/17 01:12 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.31	0	0		pH Units@19.9°C	1	04/27/17 11:19 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2210	50.0	50.0		mg/L	1	05/02/17 08:49 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: 26-May-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A1 Landfill
Project No: 5164-F
Lab Order: 1704272

Client Sample ID: BMW-27
Lab ID: 1704272-03
Collection Date: 04/24/17 04:30 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	04/27/17 05:02 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 05:02 PM
Barium	0.0269	0.00300	0.0100		mg/L	1	04/27/17 05:02 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	04/28/17 01:37 PM
Boron	0.340	0.0100	0.0300		mg/L	1	05/09/17 12:08 PM
Cadmium	0.000659	0.000300	0.00100	J	mg/L	1	04/27/17 05:02 PM
Calcium	132	1.00	3.00		mg/L	10	04/28/17 01:31 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 05:02 PM
Cobalt	0.210	0.00300	0.00500		mg/L	1	04/27/17 05:02 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	04/27/17 05:02 PM
Lithium	0.0497	0.00500	0.0100		mg/L	1	04/28/17 01:37 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 05:02 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	04/27/17 05:02 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	04/27/17 05:02 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	04/28/17 01:01 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	130	3.00	10.0		mg/L	10	04/27/17 01:32 PM
Fluoride	0.663	0.100	0.400		mg/L	1	04/27/17 11:58 AM
Sulfate	1150	10.0	30.0		mg/L	10	04/27/17 01:32 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	6.61	0	0		pH Units@20°C	1	04/27/17 11:20 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2290	50.0	50.0		mg/L	1	05/02/17 08:49 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: 1704272

Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170428C

The QC data in batch 80208 applies to the following samples: 1704272-01A, 1704272-02A, 1704272-03A

Sample ID	MB-80208	Batch ID:	80208	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 12:08:53 PM	Prep Date:	4/27/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-80208	Batch ID:	80208	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 12:13:25 PM	Prep Date:	4/27/2017			
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	LCSD-80208	Batch ID:	80208	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 12:15:41 PM	Prep Date:	4/27/2017			
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 0 15

Sample ID	1704268-06B SD	Batch ID:	80208	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 12:47:28 PM	Prep Date:	4/27/2017			
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	1704268-06B PDS	Batch ID:	80208	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 12:49:44 PM	Prep Date:	4/27/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00231 0.000200 0.00250 0 92.4 85 115

Sample ID	1704268-06B MS	Batch ID:	80208	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 12:52:00 PM	Prep Date:	4/27/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00184 0.000200 0.00200 0 92.0 80 120

Sample ID	1704268-06B MSD	Batch ID:	80208	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 12:54:16 PM	Prep Date:	4/27/2017			
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 4.77 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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170428C

Sample ID	ICV-170428	Batch ID:	R91706	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 10:53:53 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00375	0.000200	0.00400	0	93.8	90	110			

Sample ID	CCV2-170428	Batch ID:	R91706	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_170428	Analysis Date:	4/28/2017 12:04:19 PM	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			

Sample ID	CCV3-170428			Batch ID:	R91706		TestNo:	SW7470A		Units:	mg/L	
SampType:	CCV			Run ID:	CETAC2_HG_170428		Analysis Date:	4/28/2017 12:40:38 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Mercury	0.00200	0.000200	0.00200	0	100	90	110			

Sample ID	CCV4-170428			Batch ID:	R91706		TestNo:	SW7470A		Units:	mg/L	
SampType:	CCV			Run ID:	CETAC2_HG_170428		Analysis Date:	4/28/2017 1:03:23 PM		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			

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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170428D

The QC data in batch 80206 applies to the following samples: 1704272-01A, 1704272-02A, 1704272-03A

Sample ID	MB-80206		Batch ID:	80206		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_170428D		Analysis Date:	4/28/2017 1:15:00 PM		Prep Date:	4/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	<0.000300	0.00100								
Lithium	<0.00500	0.0100								

Sample ID	LCS-80206			Batch ID:	80206		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_170428D		Analysis Date:	4/28/2017 1:17:00 PM		Prep Date:	4/27/2017	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.205	0.00100	0.200	0	103	80	120			
Lithium	0.204	0.0100	0.200	0	102	80	120			

Sample ID	LCSD-80206			Batch ID:	80206		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_170428D		Analysis Date:	4/28/2017 1:19:00 PM		Prep Date:	4/27/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Beryllium	0.211	0.00100	0.200	0	106	80	120	2.88	15	
Lithium	0.200	0.0100	0.200	0	100	80	120	1.74	15	

Sample ID	1704253-03C SD	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 1:25:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	<0.00150	0.00500	0	0				0	10	
Lithium	0.273	0.0500	0	0.253				7.67	10	

Sample ID	1704253-03C PDS	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 1:39:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.191	0.00100	0.200	0	95.4	80	120			
Lithium	0.425	0.0100	0.200	0.253	85.8	80	120			

Sample ID: 1704253-03C MS	Batch ID: 80206	TestNo: SW6020A	Units: mg/L							
SampType: MS	Run ID: ICP-MS4_170428D	Analysis Date: 4/28/2017 1:41:00 PM	Prep Date: 4/27/2017							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.186	0.00100	0.200	0	92.9	80	120			
Lithium	0.423	0.0100	0.200	0.253	85.3	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170428D

Sample ID	1704253-03C MSD	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 1:43:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.181	0.00100	0.200	0	90.6	80	120	2.56	15	
Lithium	0.432	0.0100	0.200	0.253	89.6	80	120	2.02	15	

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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170428D

Sample ID	ICV-170428	Batch ID:	R91717	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 9:33:00 AM	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			
Calcium	2.55	0.300	2.50	0	102	90	110			
Lithium	0.0966	0.0100	0.100	0	96.6	90	110			

Sample ID	LCVL-170428	Batch ID:	R91717	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 9:37:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00101	0.00100	0.00100	0	101	70	130			
Calcium	0.0840	0.300	0.100	0	84.0	70	130			
Lithium	0.00975	0.0100	0.0100	0	97.5	70	130			

Sample ID	CCV2-170428	Batch ID:	R91717	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 12:11:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.212	0.00100	0.200	0	106	90	110			
Calcium	5.43	0.300	5.00	0	109	90	110			
Lithium	0.204	0.0100	0.200	0	102	90	110			

Sample ID	LCVL2-170428	Batch ID:	R91717	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 12:15:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00114	0.00100	0.00100	0	114	70	130			
Calcium	0.0861	0.300	0.100	0	86.1	70	130			
Lithium	0.00931	0.0100	0.0100	0	93.1	70	130			

Sample ID	CCV3-170428	Batch ID:	R91717	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 1:45:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.207	0.00100	0.200	0	104	90	110			
Calcium	5.45	0.300	5.00	0	109	90	110			
Lithium	0.204	0.0100	0.200	0	102	90	110			

Sample ID	LCVL3-170428			Batch ID:	R91717		TestNo:	SW6020A		Units:	mg/L		
SampType:	LCVL			Run ID:	ICP-MS4_170428D		Analysis Date:	4/28/2017 1:52:00 PM		Prep Date:			
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.000888	0.00100	0.00100	0	88.8	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170428D

Sample ID	LCVL3-170428	Batch ID:	R91717	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170428D	Analysis Date:	4/28/2017 1:52:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.0929	0.300	0.100	0	92.9	70	130			
Lithium	0.00844	0.0100	0.0100	0	84.4	70	130			

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: 1704272

Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170427A

The QC data in batch 80206 applies to the following samples: 1704272-01A, 1704272-02A, 1704272-03A

Sample ID	MB-80206	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L
SampType:	MBLK	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 4:48:00 PM	Prep Date:	4/27/2017

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	LCS-80206	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L
SampType:	LCS	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 4:50:00 PM	Prep Date:	4/27/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.194	0.00250	0.200	0	96.9	80	120			
Arsenic	0.195	0.00500	0.200	0	97.3	80	120			
Barium	0.207	0.0100	0.200	0	103	80	120			
Cadmium	0.201	0.00100	0.200	0	101	80	120			
Calcium	4.95	0.300	5.00	0	98.9	80	120			
Chromium	0.210	0.00500	0.200	0	105	80	120			
Cobalt	0.208	0.00500	0.200	0	104	80	120			
Lead	0.201	0.00100	0.200	0	100	80	120			
Molybdenum	0.193	0.00500	0.200	0	96.7	80	120			
Selenium	0.197	0.00500	0.200	0	98.7	80	120			
Thallium	0.214	0.00150	0.200	0	107	80	120			

Sample ID	LCSD-80206	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L
SampType:	LCSD	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 4:51:00 PM	Prep Date:	4/27/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.193	0.00250	0.200	0	96.6	80	120	0.281	15	
Arsenic	0.193	0.00500	0.200	0	96.7	80	120	0.648	15	
Barium	0.202	0.0100	0.200	0	101	80	120	2.53	15	
Cadmium	0.200	0.00100	0.200	0	100	80	120	0.490	15	
Calcium	4.86	0.300	5.00	0	97.1	80	120	1.85	15	
Chromium	0.207	0.00500	0.200	0	103	80	120	1.46	15	
Cobalt	0.205	0.00500	0.200	0	103	80	120	1.26	15	
Lead	0.198	0.00100	0.200	0	99.1	80	120	1.40	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170427A

Sample ID	LCSD-80206	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 4:51:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.190	0.00500	0.200	0	94.9	80	120	1.89	15	
Selenium	0.190	0.00500	0.200	0	95.0	80	120	3.84	15	
Thallium	0.207	0.00150	0.200	0	103	80	120	3.40	15	

Sample ID	1704253-03C SD	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 4:57:00 PM	Prep Date:	4/27/2017			
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	0.00340				0	10	
Barium	0.0349	0.0500	0	0.0358				2.74	10	
Cadmium	<0.00150	0.00500	0	0				0	10	
Calcium	339	1.50	0	357				4.96	10	
Chromium	<0.0100	0.0250	0	0				0	10	
Cobalt	<0.0150	0.0250	0	0				0	10	
Lead	0.00321	0.00500	0	0.00319				0.562	10	
Molybdenum	<0.0100	0.0250	0	0.00395				0	10	
Selenium	0.0104	0.0250	0	0.0129				21.4	10	R
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID	1704253-03C PDS	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 5:14:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.224	0.00250	0.200	0	112	80	120			
Arsenic	0.219	0.00500	0.200	0.00340	108	80	120			
Barium	0.266	0.0100	0.200	0.0358	115	80	120			
Cadmium	0.214	0.00100	0.200	0	107	80	120			
Calcium	372	0.300	5.00	357	302	80	120			S
Chromium	0.229	0.00500	0.200	0	115	80	120			
Cobalt	0.214	0.00500	0.200	0	107	80	120			
Lead	0.228	0.00100	0.200	0.00319	112	80	120			
Molybdenum	0.214	0.00500	0.200	0.00395	105	80	120			
Selenium	0.223	0.00500	0.200	0.0129	105	80	120			
Thallium	0.237	0.00150	0.200	0	118	80	120			

Sample ID	1704253-03C MS	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 5:16:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.219	0.00250	0.200	0	109	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170427A

Sample ID	1704253-03C MS	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 5:16:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.217	0.00500	0.200	0.00340	107	80	120			
Barium	0.265	0.0100	0.200	0.0358	114	80	120			
Cadmium	0.213	0.00100	0.200	0	106	80	120			
Calcium	388	0.300	5.00	357	633	80	120			S
Chromium	0.225	0.00500	0.200	0	112	80	120			
Cobalt	0.212	0.00500	0.200	0	106	80	120			
Lead	0.230	0.00100	0.200	0.00319	113	80	120			
Molybdenum	0.218	0.00500	0.200	0.00395	107	80	120			
Selenium	0.229	0.00500	0.200	0.0129	108	80	120			
Thallium	0.243	0.00150	0.200	0	121	80	120			S

Sample ID	1704253-03C MSD	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 5:17:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.210	0.00250	0.200	0	105	80	120	3.86	15	
Arsenic	0.210	0.00500	0.200	0.00340	103	80	120	3.51	15	
Barium	0.256	0.0100	0.200	0.0358	110	80	120	3.24	15	
Cadmium	0.205	0.00100	0.200	0	103	80	120	3.71	15	
Calcium	383	0.300	5.00	357	524	80	120	1.42	15	S
Chromium	0.220	0.00500	0.200	0	110	80	120	2.24	15	
Cobalt	0.205	0.00500	0.200	0	103	80	120	3.09	15	
Lead	0.222	0.00100	0.200	0.00319	109	80	120	3.60	15	
Molybdenum	0.211	0.00500	0.200	0.00395	103	80	120	3.64	15	
Selenium	0.217	0.00500	0.200	0.0129	102	80	120	5.55	15	
Thallium	0.231	0.00150	0.200	0	116	80	120	4.82	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170427A

Sample ID	ICV-170403	Batch ID:	R91666	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 10:57:00 AM	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	0.101	0.0100	0.100	0	101	90	110			
Cadmium	0.103	0.00100	0.100	0	103	90	110			
Calcium	2.52	0.300	2.50	0	101	90	110			
Chromium	0.106	0.00500	0.100	0	106	90	110			
Cobalt	0.104	0.00500	0.100	0	104	90	110			
Lead	0.101	0.00100	0.100	0	101	90	110			
Molybdenum	0.0958	0.00500	0.100	0	95.8	90	110			
Selenium	0.101	0.00500	0.100	0	101	90	110			
Thallium	0.100	0.00150	0.100	0	100	90	110			

Sample ID	LCVL-170403	Batch ID:	R91666	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 11:00:00 AM	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	0.00493	0.00500	0.00500	0	98.7	70	130			
Barium	0.00498	0.0100	0.00500	0	99.5	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	0.00511	0.00500	0.00500	0	102	70	130			
Cobalt	0.00504	0.00500	0.00500	0	101	70	130			
Lead	0.00105	0.00100	0.00100	0	105	70	130			
Molybdenum	0.00473	0.00500	0.00500	0	94.7	70	130			
Selenium	0.00515	0.00500	0.00500	0	103	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	LCVL4-170427	Batch ID:	R91666	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 4:36:00 PM	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	0.00488	0.00500	0.00500	0	97.5	70	130			
Barium	0.00531	0.0100	0.00500	0	106	70	130			
Cadmium	0.00104	0.00100	0.00100	0	104	70	130			
Calcium	0.0994	0.300	0.100	0	99.4	70	130			
Chromium	0.00508	0.00500	0.00500	0	102	70	130			
Cobalt	0.00514	0.00500	0.00500	0	103	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Molybdenum	0.00466	0.00500	0.00500	0	93.3	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170427A

Sample ID	LCVL4-170427	Batch ID:	R91666	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 4:36:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.00461	0.00500	0.00500	0	92.2	70	130			
Thallium	0.00106	0.00150	0.00100	0	106	70	130			

Sample ID	CCV4-170427	Batch ID:	R91666	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 4:44:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.199	0.00250	0.200	0	99.7	90	110			
Arsenic	0.201	0.00500	0.200	0	101	90	110			
Barium	0.210	0.0100	0.200	0	105	90	110			
Cadmium	0.207	0.00100	0.200	0	104	90	110			
Calcium	5.03	0.300	5.00	0	101	90	110			
Chromium	0.215	0.00500	0.200	0	108	90	110			
Cobalt	0.213	0.00500	0.200	0	107	90	110			
Lead	0.207	0.00100	0.200	0	103	90	110			
Molybdenum	0.196	0.00500	0.200	0	97.9	90	110			
Selenium	0.201	0.00500	0.200	0	101	90	110			
Thallium	0.220	0.00150	0.200	0	110	90	110			

Sample ID	CCV5-170427	Batch ID:	R91666	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 5:19:00 PM	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	0.200	0.00500	0.200	0	100	90	110			
Barium	0.207	0.0100	0.200	0	104	90	110			
Cadmium	0.200	0.00100	0.200	0	100	90	110			
Calcium	5.14	0.300	5.00	0	103	90	110			
Chromium	0.208	0.00500	0.200	0	104	90	110			
Cobalt	0.210	0.00500	0.200	0	105	90	110			
Lead	0.205	0.00100	0.200	0	102	90	110			
Molybdenum	0.191	0.00500	0.200	0	95.6	90	110			
Selenium	0.205	0.00500	0.200	0	103	90	110			
Thallium	0.215	0.00150	0.200	0	108	90	110			

Sample ID	LCVL5-170427	Batch ID:	R91666	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 5:23:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00198	0.00250	0.00200	0	99.0	70	130			
Arsenic	0.00482	0.00500	0.00500	0	96.3	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170427A

Sample ID	LCVL5-170427	Batch ID:	R91666	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170427A	Analysis Date:	4/27/2017 5:23:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	0.00512	0.0100	0.00500	0	102	70	130			
Cadmium	0.000996	0.00100	0.00100	0	99.6	70	130			
Calcium	0.101	0.300	0.100	0	101	70	130			
Chromium	0.00485	0.00500	0.00500	0	97.1	70	130			
Cobalt	0.00511	0.00500	0.00500	0	102	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Molybdenum	0.00464	0.00500	0.00500	0	92.7	70	130			
Selenium	0.00517	0.00500	0.00500	0	103	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170509A

The QC data in batch 80206 applies to the following samples: 1704272-01A, 1704272-02A, 1704272-03A

Sample ID	MB-80206	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L				
SampType:	MBLK	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 11:56:00 AM	Prep Date:	4/27/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron <0.0100 0.0300

Sample ID	LCS-80206	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCS	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 11:57:00 AM	Prep Date:	4/27/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.187 0.0300 0.200 0 93.5 80 120

Sample ID	LCSD-80206	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 11:59:00 AM	Prep Date:	4/27/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.194 0.0300 0.200 0 96.9 80 120 3.58 15

Sample ID	1704253-03C MS	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L				
SampType:	MS	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 12:13:00 PM	Prep Date:	4/27/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.904 0.0300 0.200 0.725 89.6 80 120

Sample ID	1704253-03C MSD	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L				
SampType:	MSD	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 12:15:00 PM	Prep Date:	4/27/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.937 0.0300 0.200 0.725 106 80 120 3.50 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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170509A

Sample ID	ICV-170509	Batch ID:	R91868	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 11:05:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0981	0.0300	0.100	0	98.1	90	110			

Sample ID	LCVL-170509	Batch ID:	R91868	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 11:09:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0226	0.0300	0.0200	0	113	70	130			

Sample ID	CCV1-170509	Batch ID:	R91868	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 11:48:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.205	0.0300	0.200	0	102	90	110			

Sample ID	LCVL1-170509	Batch ID:	R91868	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 11:52:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0242	0.0300	0.0200	0	121	70	130			

Sample ID	CCV2-170509	Batch ID:	R91868	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 12:29:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.208	0.0300	0.200	0	104	90	110			

Sample ID	LCVL2-170509	Batch ID:	R91868	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170509A	Analysis Date:	5/9/2017 12:37:00 PM	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			

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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170510A

The QC data in batch 80206 applies to the following samples: 1704272-01A, 1704272-02A, 1704272-03A

Sample ID	1704272-02A SD	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L				
SampType:	SD	Run ID:	ICP-MS5_170510A	Analysis Date:	5/10/2017 12:09:00 PM	Prep Date:	4/27/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.792	0.750	0	0.522				41.1	10	R

Sample ID	1704272-02A PDS	Batch ID:	80206	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS5_170510A	Analysis Date:	5/10/2017 12:19:00 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	1.34	0.150	1.00	0.522	81.7	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170510A

Sample ID	ICV-170510	Batch ID:	R91881		TestNo:	SW6020A		Units:	mg/L		
SampType:	ICV	Run ID:	ICP-MS5_170510A		Analysis Date:	5/10/2017 11:48:00 AM		Prep Date:			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0959	0.0300	0.100	0	95.9	90	110			

Sample ID	LCVL-170510	Batch ID:	R91881	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170510A	Analysis Date:	5/10/2017 11:52:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0219	0.0300	0.0200	0	109	70	130			

Sample ID	CCV1-170510	Batch ID:	R91881	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170510A	Analysis Date:	5/10/2017 12:28:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.193	0.0300	0.200	0	96.5	90	110			

Sample ID	LCVL1-170510	Batch ID:	R91881	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170510A	Analysis Date:	5/10/2017 12:40:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0224	0.0300	0.0200	0	112	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_170427A

The QC data in batch 80209 applies to the following samples: 1704272-01D, 1704272-02D, 1704272-03D

Sample ID	MB-80209	Batch ID:	80209	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC3_170427A	Analysis Date:	4/27/2017 9:29:21 AM	Prep Date:	4/27/2017			
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	LCSD-80209	Batch ID:	80209	TestNo:	E300	Units:	mg/L			
SampType:	LCSD	Run ID:	IC3_170427A	Analysis Date:	4/27/2017 10:10:38 AM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.0	1.00	10.00	0	100	90	110	0.439	20	
Fluoride	4.16	0.400	4.000	0	104	90	110	1.48	20	
Sulfate	29.7	3.00	30.00	0	99.2	90	110	0.218	20	

Sample ID	LCS-80209	Batch ID:	80209	TestNo:	E300	Units:	mg/L			
SampType:	LCS	Run ID:	IC3_170427A	Analysis Date:	4/27/2017 10:33:24 AM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.99	1.00	10.00	0	99.9	90	110			
Fluoride	4.10	0.400	4.000	0	102	90	110			
Sulfate	29.8	3.00	30.00	0	99.4	90	110			

Sample ID	1704272-02DMS	Batch ID:	80209	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC3_170427A	Analysis Date:	4/27/2017 2:02:12 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	310	10.0	200.0	111.1	99.4	90	110			
Fluoride	182	4.00	200.0	0	90.9	90	110			
Sulfate	775	30.0	200.0	576.3	99.3	90	110			

Sample ID	1704272-02DMSD	Batch ID:	80209	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC3_170427A	Analysis Date:	4/27/2017 2:25:47 PM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	309	10.0	200.0	111.1	98.9	90	110	0.313	20	
Fluoride	183	4.00	200.0	0	91.6	90	110	0.762	20	
Sulfate	779	30.0	200.0	576.3	101	90	110	0.525	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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_170427A

Sample ID	ICV-170427	Batch ID:	R91687		TestNo:	E300		Units:	mg/L		
SampType:	ICV	Run ID:	IC3_170427A		Analysis Date:	4/27/2017 8:36:56 AM		Prep Date:			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		25.1	1.00	25.00	0	100	90	110			
Fluoride		10.4	0.400	10.00	0	104	90	110			
Sulfate		74.4	3.00	75.00	0	99.2	90	110			

Sample ID	CCV1-170427	Batch ID:	R91687	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC3_170427A	Analysis Date:	4/27/2017 3:07:03 PM	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	3.77	0.400	4.000	0	94.3	90	110			
Sulfate	28.8	3.00	30.00	0	96.1	90	110			

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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170427A

The QC data in batch 80215 applies to the following samples: 1704272-01D, 1704272-02D, 1704272-03D

Sample ID	1704271-01D-DUP	Batch ID:	80215	TestNo:	M4500-H+ B	Units:	pH Units@18.6°C
SampType:	DUP	Run ID:	TITRATOR_170427A	Analysis Date:	4/27/2017 11:11:00 AM	Prep Date:	4/27/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		7.85	0	0	7.700		1.93 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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170427A

Sample ID	ICV-170427	Batch ID:	R91688	TestNo:	M4500-H+ B	Units:	pH Units@22.2°C			
SampType:	ICV	Run ID:	TITRATOR_170427A	Analysis Date:	4/27/2017 10:16:00 AM	Prep Date:	4/27/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	9.95	0	10.00	0	99.5	99	101			

Sample ID	CCV1-170427	Batch ID:	R91688	TestNo:	M4500-H+ B	Units:	pH Units@21.7°C			
SampType:	CCV	Run ID:	TITRATOR_170427A	Analysis Date:	4/27/2017 11:25:00 AM	Prep Date:	4/27/2017			
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

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: 1704272
Project: Luminant - A1 Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170501A

The QC data in batch 80266 applies to the following samples: 1704272-01D, 1704272-02D, 1704272-03D

Sample ID	MB-80266	Batch ID:	80266	TestNo:	M2540C	Units:	mg/L
SampType:	MBLK	Run ID:	WC_170501A	Analysis Date:	5/2/2017 8:49:00 AM	Prep Date:	5/1/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-80266	Batch ID:	80266	TestNo:	M2540C	Units:	mg/L
SampType:	LCS	Run ID:	WC_170501A	Analysis Date:	5/2/2017 8:49:00 AM	Prep Date:	5/1/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 746 10.0 745.6 0 100 90 113

Sample ID	1704279-04C-DUP	Batch ID:	80266	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_170501A	Analysis Date:	5/2/2017 8:49:00 AM	Prep Date:	5/1/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 1560 50.0 0 1515 2.61 5

Sample ID	1704305-02B-DUP	Batch ID:	80266	TestNo:	M2540C	Units:	mg/L
SampType:	DUP	Run ID:	WC_170501A	Analysis Date:	5/2/2017 8:49:00 AM	Prep Date:	5/1/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual

Total Dissolved Solids (Residue, Filtera 6520 50.0 0 6715 3.02 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: 20170351

This report contains the analytical results for the 3 sample(s) received under chain of custody by ESC Lab Sciences on 4/27/2017 10:09:14 AM. These samples are associated with your 1704272 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.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

Observations / Nonconformances

L905308



Client : DHL Analytical, Inc.
Client Project : 1704272
Lab Number : 20170351
Date Reported : 05/25/17
Date Received : 04/27/17
Page Number : 2 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20170351-01

Client ID : BMW-28

Date Sampled : 4/24/2017 2:15:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium	2.24 +/- 0.959	0.659	pCi/l				
Radium-226 SM 7500 Ra B M*	0.356 +/- 0.212	0.256	pCi/l		05/11/17	05/16/17	SD
Radium-228 EPA 904*	1.88 +/- 0.747	0.403	pCi/l		05/15/17	05/19/17	JR

Lab ID : 20170351-02

Client ID : BMW-26

Date Sampled : 4/24/2017 3:20:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium	1.77 +/- 1.42	0.986	pCi/l				
Radium-226 SM 7500 Ra B M*	0.169 +/- 0.239	0.363	pCi/l		05/11/17	05/16/17	SD
Radium-228 EPA 904*	1.60 +/- 1.18	0.623	pCi/l		05/15/17	05/19/17	JR

Lab ID : 20170351-03

Client ID : BMW-27

Date Sampled : 4/24/2017 4:30:00 PM

Matrix : NPW

Radiochemical Analyses

Combined Radium	1.53 +/- 0.885	0.828	pCi/l				
Radium-226 SM 7500 Ra B M*	-0.233 +/- 0.253	0.452	pCi/l		05/11/17	05/16/17	SD
Radium-228 EPA 904*	1.53 +/- 0.632	0.376	pCi/l		05/15/17	05/19/17	JR



Client : DHL Analytical, Inc.
Client Project : 1704272
Lab Number : 20170351
Date Reported : 05/25/17
Date Received : 04/27/17
Page Number : 3 of 3

QC Report

Parameter	Blank	LCS %REC	LCSD %REC RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC RPD	Batch ID
Radium-226	0.013	92.0		NC	1.300	87.0	86.0 1.9	R1223
Radium-228	-0.018	96.1		39.3	0.321	103.0	109.0 6.4	R3959

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: 1704272

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

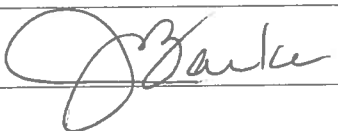
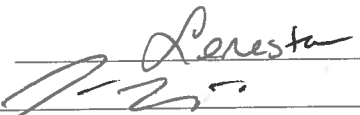
Acct #: DHLRRTX

26-Apr-17

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E904.0	SM7500Ra-B M				
BMW-28	Aqueous	-01B	04/24/17 02:15 PM	1LHDPEHNO3	1					
BMW-28	Aqueous	-01C	04/24/17 02:15 PM	500HDPEHNO3		1				
BMW-26	Aqueous	-02B	04/24/17 03:20 PM	1LHDPEHNO3	1					
BMW-26	Aqueous	-02C	04/24/17 03:20 PM	500HDPEHNO3		1				
BMW-27	Aqueous	-03B	04/24/17 04:30 PM	1LHDPEHNO3	1					
BMW-27	Aqueous	-03C	04/24/17 04:30 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

Relinquished by: 	Date/Time: 4/26/17 1730	Received by: 	Date/Time: 4/26/17 1730
Relinquished by: _____	_____	Received by: 	Date/Time: 4/27/17 1510

320176351

L905308

SAMPLE LOGIN

Date Received: 4/27/2017 10:09:1

Lab Number: 20170351

Due: 5/25/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170351-01 B	BMW-28	NPW	04/24/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170351-01 A	BMW-28	NPW	04/24/17	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170351-02 B	BMW-26	NPW	04/24/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170351-02 A	BMW-26	NPW	04/24/17	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170351-03 B	BMW-27	NPW	04/24/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170351-03 A	BMW-27	NPW	04/24/17	Plastic	500 ml	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						

CONTAINER INSPECTION

Coolers 1 Custody Seals Broken 0 Temperature: 16 C Ice Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken 0 Chain of Custody Record ✓ Labels in Tact ✓ Radiation Survey Complete N/A

Anomalles

Inspected By: [Signature] DATE 4/27/17

QA or Designee Review: Raymond Thomas DATE 4/27/17

Sample Custodian Review: [Signature] DATE 4/27/17

Project Notes:



June 22, 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 A-1

Order No.: 1705286

Dear Will Vienne:

DHL Analytical, Inc. received 3 sample(s) on 5/26/2017 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,

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: T104704211-17-19



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Subcontract Report 1705286	30

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 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 BRAYTON

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 25MAY17
ACTWGT: 51.00 LB
CAD: 6991003/SSF01802
OIMS: 23x16x13 IN

BILL THIRD PARTY

Part # 156297V-438 HITE EXP 08/18..

TO

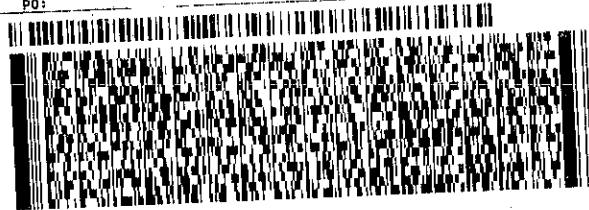
DHL
2300 DOUBLECREEK DR

ROUND ROCK TX 78664

(512) 388-8222

REF:

DEPT:



FedEx
Express



TRK# 7866 9344 9559
0201

FRI - 26 MAY 10:30A
PRIORITY OVERNIGHT

A8 BSMA

78664

TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 5/26/2017

Work Order Number 1705286

Received by JB

Checklist completed by [Signature] 5/26/2017
Signature DateReviewed by [Initials] 5/26/2017
Initials DateCarrier 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
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH<2 acceptable upon receipt?	Yes ☒	No ☐	NA ☐ LOT # 8086
	Adjusted? <u>NO</u>		Checked by <u>[Signature]</u>
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 A-1
Lab Order: 1705286

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 5/26/17. A total of 3 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 6/6/17 the matrix spike and matrix spike duplicate recoveries were below control limits for Boron. 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 this analyte. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 6/1/17 the matrix spike and matrix spike duplicate recoveries were slightly above control limits for Fluoride. 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 this analyte. No further corrective actions were taken.

CLIENT: Pastor, Behling & Wheeler
Project: Luminant A-1
Lab Order: 1705286**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1705286-01	BMW-27		05/25/17 09:35 AM	5/26/2017
1705286-02	BMW-26		05/25/17 10:35 AM	5/26/2017
1705286-03	BMW-28		05/25/17 11:40 AM	5/26/2017

LUMINANT

Lab Order: 1705286
Client: Pastor, Behling & Wheeler
Project: Luminant A-1

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1705286-01A	BMW-27	05/25/17 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/01/17 09:48 AM	80708
	BMW-27	05/25/17 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/01/17 09:48 AM	80708
	BMW-27	05/25/17 09:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/01/17 12:04 PM	80717
1705286-01D	BMW-27	05/25/17 09:35 AM	Aqueous	E300	Anion Preparation	06/01/17 08:11 AM	80700
	BMW-27	05/25/17 09:35 AM	Aqueous	E300	Anion Preparation	06/01/17 08:11 AM	80700
	BMW-27	05/25/17 09:35 AM	Aqueous	M4500-H+ B	pH Preparation	05/30/17 08:08 AM	80650
	BMW-27	05/25/17 09:35 AM	Aqueous	M2540C	TDS Preparation	05/30/17 02:39 PM	80666
1705286-02A	BMW-26	05/25/17 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/01/17 09:48 AM	80708
	BMW-26	05/25/17 10:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/01/17 09:48 AM	80708
	BMW-26	05/25/17 10:35 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/01/17 12:04 PM	80717
1705286-02D	BMW-26	05/25/17 10:35 AM	Aqueous	E300	Anion Preparation	06/01/17 08:11 AM	80700
	BMW-26	05/25/17 10:35 AM	Aqueous	E300	Anion Preparation	06/01/17 08:11 AM	80700
	BMW-26	05/25/17 10:35 AM	Aqueous	M4500-H+ B	pH Preparation	05/30/17 08:08 AM	80650
	BMW-26	05/25/17 10:35 AM	Aqueous	M2540C	TDS Preparation	05/30/17 02:39 PM	80666
1705286-03A	BMW-28	05/25/17 11:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/01/17 09:48 AM	80708
	BMW-28	05/25/17 11:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/01/17 09:48 AM	80708
	BMW-28	05/25/17 11:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/01/17 09:48 AM	80708
	BMW-28	05/25/17 11:40 AM	Aqueous	SW7470A	Mercury Aq Prep, Total	06/01/17 12:04 PM	80717
1705286-03D	BMW-28	05/25/17 11:40 AM	Aqueous	E300	Anion Preparation	06/01/17 08:11 AM	80700
	BMW-28	05/25/17 11:40 AM	Aqueous	E300	Anion Preparation	06/01/17 08:11 AM	80700
	BMW-28	05/25/17 11:40 AM	Aqueous	M4500-H+ B	pH Preparation	05/30/17 08:08 AM	80650
	BMW-28	05/25/17 11:40 AM	Aqueous	M2540C	TDS Preparation	05/30/17 02:39 PM	80666

Lab Order: 1705286
Client: Pastor, Behling & Wheeler
Project: Luminant A-1

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1705286-01A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	80717	1	06/02/17 11:38 AM	CETAC2_HG_170602 D
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80708	1	06/05/17 03:15 PM	ICP-MS5_170605B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80708	10	06/06/17 11:25 AM	ICP-MS5_170606A
1705286-01D	BMW-27	Aqueous	E300	Anions by IC method - Water	80700	1	06/01/17 10:23 AM	IC2_170601A
	BMW-27	Aqueous	E300	Anions by IC method - Water	80700	10	06/01/17 12:21 PM	IC2_170601A
	BMW-27	Aqueous	M4500-H+ B	pH	80650	1	05/30/17 09:04 AM	TITRATOR_170530A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	80666	1	05/31/17 08:53 AM	WC_170530C
1705286-02A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	80717	1	06/02/17 11:40 AM	CETAC2_HG_170602 D
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80708	10	06/06/17 11:26 AM	ICP-MS5_170606A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80708	1	06/05/17 03:16 PM	ICP-MS5_170605B
1705286-02D	BMW-26	Aqueous	E300	Anions by IC method - Water	80700	10	06/01/17 12:35 PM	IC2_170601A
	BMW-26	Aqueous	E300	Anions by IC method - Water	80700	1	06/01/17 10:37 AM	IC2_170601A
	BMW-26	Aqueous	M4500-H+ B	pH	80650	1	05/30/17 09:07 AM	TITRATOR_170530A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	80666	1	05/31/17 08:53 AM	WC_170530C
1705286-03A	BMW-28	Aqueous	SW7470A	Mercury Total: Aqueous	80717	1	06/02/17 11:42 AM	CETAC2_HG_170602 D
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80708	1	06/05/17 03:18 PM	ICP-MS5_170605B
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80708	10	06/06/17 11:28 AM	ICP-MS5_170606A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	80708	50	06/06/17 01:20 PM	ICP-MS5_170606A
1705286-03D	BMW-28	Aqueous	E300	Anions by IC method - Water	80700	1	06/01/17 10:52 AM	IC2_170601A
	BMW-28	Aqueous	E300	Anions by IC method - Water	80700	10	06/01/17 12:50 PM	IC2_170601A
	BMW-28	Aqueous	M4500-H+ B	pH	80650	1	05/30/17 09:08 AM	TITRATOR_170530A
	BMW-28	Aqueous	M2540C	Total Dissolved Solids	80666	1	05/31/17 08:53 AM	WC_170530C

DHL Analytical, Inc.

Date: 22-Jun-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant A-1
Project No: 5164-F
Lab Order: 1705286

Client Sample ID: BMW-27
Lab ID: 1705286-01
Collection Date: 05/25/17 09:35 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/05/17 03:15 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:15 PM
Barium	0.0266	0.00300	0.0100		mg/L	1	06/05/17 03:15 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/05/17 03:15 PM
Boron	0.331	0.100	0.300		mg/L	10	06/06/17 11:25 AM
Cadmium	0.000521	0.000300	0.00100	J	mg/L	1	06/05/17 03:15 PM
Calcium	122	1.00	3.00		mg/L	10	06/06/17 11:25 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:15 PM
Cobalt	0.200	0.00300	0.00500		mg/L	1	06/05/17 03:15 PM
Lead	0.000439	0.000300	0.00100	J	mg/L	1	06/05/17 03:15 PM
Lithium	0.0471	0.00500	0.0100		mg/L	1	06/05/17 03:15 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:15 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:15 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/05/17 03:15 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/02/17 11:38 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	124	3.00	10.0		mg/L	10	06/01/17 12:21 PM
Fluoride	1.61	0.100	0.400		mg/L	1	06/01/17 10:23 AM
Sulfate	1150	10.0	30.0		mg/L	10	06/01/17 12:21 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	6.81	0	0		pH Units@18.6°C	1	05/30/17 09:04 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2320	50.0	50.0		mg/L	1	05/31/17 08:53 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: 22-Jun-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant A-1
Project No: 5164-F
Lab Order: 1705286

Client Sample ID: BMW-26
Lab ID: 1705286-02
Collection Date: 05/25/17 10:35 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	06/05/17 03:16 PM
Arsenic	0.00347	0.00200	0.00500	J	mg/L	1	06/05/17 03:16 PM
Barium	0.0243	0.00300	0.0100		mg/L	1	06/05/17 03:16 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/05/17 03:16 PM
Boron	0.613	0.100	0.300		mg/L	10	06/06/17 11:26 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/05/17 03:16 PM
Calcium	178	1.00	3.00		mg/L	10	06/06/17 11:26 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:16 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/05/17 03:16 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	06/05/17 03:16 PM
Lithium	0.0951	0.00500	0.0100		mg/L	1	06/05/17 03:16 PM
Molybdenum	0.00302	0.00200	0.00500	J	mg/L	1	06/05/17 03:16 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:16 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/05/17 03:16 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/02/17 11:40 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	115	3.00	10.0		mg/L	10	06/01/17 12:35 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/01/17 10:37 AM
Sulfate	613	10.0	30.0		mg/L	10	06/01/17 12:35 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.52	0	0		pH Units@18.6°C	1	05/30/17 09:07 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	2110	50.0	50.0		mg/L	1	05/31/17 08:53 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: 22-Jun-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant A-1
Project No: 5164-F
Lab Order: 1705286

Client Sample ID: BMW-28
Lab ID: 1705286-03
Collection Date: 05/25/17 11:40 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: CVD			
Antimony	0.00119	0.000800	0.00250	J	mg/L	1	06/05/17 03:18 PM
Arsenic	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:18 PM
Barium	0.0468	0.00300	0.0100		mg/L	1	06/05/17 03:18 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	06/05/17 03:18 PM
Boron	1.23	0.100	0.300		mg/L	10	06/06/17 11:28 AM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	06/05/17 03:18 PM
Calcium	255	5.00	15.0		mg/L	50	06/06/17 01:20 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:18 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	06/05/17 03:18 PM
Lead	0.000427	0.000300	0.00100	J	mg/L	1	06/05/17 03:18 PM
Lithium	0.102	0.00500	0.0100		mg/L	1	06/05/17 03:18 PM
Molybdenum	0.00764	0.00200	0.00500		mg/L	1	06/05/17 03:18 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	06/05/17 03:18 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	06/05/17 03:18 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	06/02/17 11:42 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: AV			
Chloride	130	3.00	10.0		mg/L	10	06/01/17 12:50 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/01/17 10:52 AM
Sulfate	1410	10.0	30.0		mg/L	10	06/01/17 12:50 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.33	0	0		pH Units@18.9°C	1	05/30/17 09:08 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: AJH			
Total Dissolved Solids (Residue, Filterable)	3180	50.0	50.0		mg/L	1	05/31/17 08:53 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: 1705286

Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170602D

The QC data in batch 80717 applies to the following samples: 1705286-01A, 1705286-02A, 1705286-03A

Sample ID	MB-80717	Batch ID:	80717	TestNo:	SW7470A	Units:	mg/L				
SampType:	MBLK	Run ID:	CETAC2_HG_170602	Analysis Date:	6/2/2017 11:22:25 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-80717	Batch ID:	80717	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCS	Run ID:	CETAC2_HG_170602	Analysis Date:	6/2/2017 11:24:41 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00222 0.000200 0.00200 0 111 85 115

Sample ID	LCSD-80717	Batch ID:	80717	TestNo:	SW7470A	Units:	mg/L				
SampType:	LCSD	Run ID:	CETAC2_HG_170602	Analysis Date:	6/2/2017 11:26:56 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00218 0.000200 0.00200 0 109 85 115 1.82 15

Sample ID	1705300-21B SD	Batch ID:	80717	TestNo:	SW7470A	Units:	mg/L				
SampType:	SD	Run ID:	CETAC2_HG_170602	Analysis Date:	6/2/2017 11:49:38 AM	Prep Date:	6/1/2017				
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	1705300-21B PDS	Batch ID:	80717	TestNo:	SW7470A	Units:	mg/L				
SampType:	PDS	Run ID:	CETAC2_HG_170602	Analysis Date:	6/2/2017 11:51:54 AM	Prep Date:	6/1/2017				
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	1705300-21B MS	Batch ID:	80717	TestNo:	SW7470A	Units:	mg/L				
SampType:	MS	Run ID:	CETAC2_HG_170602	Analysis Date:	6/2/2017 11:54:10 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00204 0.000200 0.00200 0 102 80 120

Sample ID	1705300-21B MSD	Batch ID:	80717	TestNo:	SW7470A	Units:	mg/L				
SampType:	MSD	Run ID:	CETAC2_HG_170602	Analysis Date:	6/2/2017 11:56:27 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00204 0.000200 0.00200 0 102 80 120 0 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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170602D

Sample ID	ICV-170602	Batch ID:	R92273	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_170602	Analysis Date:	6/2/2017 10:50:36 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury	0.00404	0.000200	0.00400	0	101	90	110			

Sample ID	CCV1-170602			Batch ID:	R92273		TestNo:	SW7470A		Units:	mg/L		
SampType:	CCV			Run ID:	CETAC2_HG_170602		Analysis Date:	6/2/2017 11:17:51 AM		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			

Sample ID	CCV2-170602			Batch ID:	R92273		TestNo:	SW7470A		Units:	mg/L	
SampType:	CCV			Run ID:	CETAC2_HG_170602		Analysis Date:	6/2/2017 12:01:01 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Mercury	0.00208	0.000200	0.00200	0	104	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170605B

The QC data in batch 80708 applies to the following samples: 1705286-01A, 1705286-02A, 1705286-03A

Sample ID	MB-80708		Batch ID:	80708		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS5_170605B		Analysis Date:	6/5/2017 3:02:00 PM		Prep Date:	6/1/2017	
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	LCS-80708		Batch ID:	80708		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS5_170605B		Analysis Date:	6/5/2017 3:04:00 PM		Prep Date:	6/1/2017	
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
Arsenic	0.195	0.00500	0.200	0	97.6	80	120
Barium	0.194	0.0100	0.200	0	96.8	80	120
Beryllium	0.192	0.00100	0.200	0	96.0	80	120
Cadmium	0.193	0.00100	0.200	0	96.6	80	120
Calcium	5.08	0.300	5.00	0	102	80	120
Chromium	0.198	0.00500	0.200	0	98.9	80	120
Cobalt	0.203	0.00500	0.200	0	102	80	120
Lead	0.193	0.00100	0.200	0	96.5	80	120
Lithium	0.200	0.0100	0.200	0	99.9	80	120
Molybdenum	0.186	0.00500	0.200	0	93.0	80	120
Selenium	0.194	0.00500	0.200	0	97.2	80	120
Thallium	0.204	0.00150	0.200	0	102	80	120

Sample ID	LCSD-80708			Batch ID:	80708		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS5_170605B		Analysis Date:	6/5/2017 3:06:00 PM		Prep Date:	6/1/2017	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.196	0.00250	0.200	0	98.2	80	120	0.210	15
Arsenic	0.197	0.00500	0.200	0	98.4	80	120	0.865	15
Barium	0.193	0.0100	0.200	0	96.3	80	120	0.522	15
Beryllium	0.193	0.00100	0.200	0	96.3	80	120	0.282	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170605B

Sample ID	LCSD-80708	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 3:06:00 PM	Prep Date:	6/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Cadmium	0.193	0.00100	0.200	0	96.6	80	120	0.036	15
Calcium	5.19	0.300	5.00	0	104	80	120	2.23	15
Chromium	0.200	0.00500	0.200	0	99.8	80	120	0.880	15
Cobalt	0.203	0.00500	0.200	0	101	80	120	0.209	15
Lead	0.195	0.00100	0.200	0	97.4	80	120	0.963	15
Lithium	0.196	0.0100	0.200	0	98.0	80	120	1.92	15
Molybdenum	0.186	0.00500	0.200	0	93.1	80	120	0.035	15
Selenium	0.200	0.00500	0.200	0	100	80	120	2.84	15
Thallium	0.206	0.00150	0.200	0	103	80	120	0.935	15

Sample ID	1705303-01A SD	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L				
SampType:	SD	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 3:11:00 PM	Prep Date:	6/1/2017				
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	0.00287				0	10
Barium	0.0828	0.0500	0	0.0899				8.31	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				0	10
Lead	<0.00150	0.00500	0	0.00115				0	10
Lithium	<0.0250	0.0500	0	0.00764				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	1705303-01A PDS			Batch ID:	80708		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS			Run ID:	ICP-MS5_170605B		Analysis Date:	6/5/2017 3:29:00 PM		Prep Date:	6/1/2017	
Analyte	Result			RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.181	0.00250	0.200	0	90.6	80	120		
Arsenic	0.197	0.00500	0.200	0.00287	96.8	80	120		
Barium	0.281	0.0100	0.200	0.0899	95.6	80	120		
Beryllium	0.204	0.00100	0.200	0	102	80	120		
Cadmium	0.192	0.00100	0.200	0	96.0	80	120		
Chromium	0.205	0.00500	0.200	0	103	80	120		
Cobalt	0.200	0.00500	0.200	0	100	80	120		
Lead	0.196	0.00100	0.200	0.00115	97.4	80	120		
Lithium	0.202	0.0100	0.200	0.00764	97.1	80	120		
Molybdenum	0.185	0.00500	0.200	0	92.7	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170605B

Sample ID	1705303-01A PDS	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 3:29:00 PM	Prep Date:	6/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.189	0.00500	0.200	0	94.7	80	120			
Thallium	0.204	0.00150	0.200	0	102	80	120			

Sample ID	1705303-01A MS	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 3:30:00 PM	Prep Date:	6/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.192	0.00250	0.200	0	95.9	80	120			
Arsenic	0.193	0.00500	0.200	0.00287	95.1	80	120			
Barium	0.284	0.0100	0.200	0.0899	97.1	80	120			
Beryllium	0.196	0.00100	0.200	0	98.2	80	120			
Cadmium	0.189	0.00100	0.200	0	94.6	80	120			
Calcium	48.3	0.300	5.00	44.2	82.4	80	120			
Chromium	0.198	0.00500	0.200	0	98.8	80	120			
Cobalt	0.196	0.00500	0.200	0	97.9	80	120			
Lead	0.193	0.00100	0.200	0.00115	96.0	80	120			
Lithium	0.208	0.0100	0.200	0.00764	99.9	80	120			
Molybdenum	0.186	0.00500	0.200	0	93.2	80	120			
Selenium	0.187	0.00500	0.200	0	93.3	80	120			
Thallium	0.202	0.00150	0.200	0	101	80	120			

Sample ID	1705303-01A MSD	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 3:32:00 PM	Prep Date:	6/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.195	0.00250	0.200	0	97.3	80	120	1.37	15	
Arsenic	0.194	0.00500	0.200	0.00287	95.8	80	120	0.712	15	
Barium	0.288	0.0100	0.200	0.0899	99.0	80	120	1.30	15	
Beryllium	0.202	0.00100	0.200	0	101	80	120	2.57	15	
Cadmium	0.192	0.00100	0.200	0	95.8	80	120	1.24	15	
Calcium	48.5	0.300	5.00	44.2	87.4	80	120	0.517	15	
Chromium	0.200	0.00500	0.200	0	100	80	120	1.19	15	
Cobalt	0.197	0.00500	0.200	0	98.5	80	120	0.605	15	
Lead	0.195	0.00100	0.200	0.00115	97.1	80	120	1.05	15	
Lithium	0.206	0.0100	0.200	0.00764	99.2	80	120	0.736	15	
Molybdenum	0.189	0.00500	0.200	0	94.7	80	120	1.64	15	
Selenium	0.185	0.00500	0.200	0	92.6	80	120	0.674	15	
Thallium	0.203	0.00150	0.200	0	102	80	120	0.434	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170605B

Sample ID	ICV-170605	Batch ID:	R92293	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 11:42:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.102	0.00250	0.100	0	102	90	110			
Arsenic	0.102	0.00500	0.100	0	102	90	110			
Barium	0.100	0.0100	0.100	0	100	90	110			
Beryllium	0.101	0.00100	0.100	0	101	90	110			
Cadmium	0.100	0.00100	0.100	0	100	90	110			
Calcium	2.53	0.300	2.50	0	101	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	0.100	0.00100	0.100	0	100	90	110			
Lithium	0.0990	0.0100	0.100	0	99.0	90	110			
Molybdenum	0.0930	0.00500	0.100	0	93.0	90	110			
Selenium	0.103	0.00500	0.100	0	103	90	110			
Thallium	0.0979	0.00150	0.100	0	97.9	90	110			

Sample ID	LCVL-170605	Batch ID:	R92293	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 11:46:00 AM	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	0.00484	0.00500	0.00500	0	96.7	70	130			
Barium	0.00482	0.0100	0.00500	0	96.3	70	130			
Beryllium	0.000837	0.00100	0.00100	0	83.7	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Calcium	0.0957	0.300	0.100	0	95.7	70	130			
Chromium	0.00493	0.00500	0.00500	0	98.6	70	130			
Cobalt	0.00504	0.00500	0.00500	0	101	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0100	0.0100	0.0100	0	100	70	130			
Molybdenum	0.00484	0.00500	0.00500	0	96.8	70	130			
Selenium	0.00491	0.00500	0.00500	0	98.3	70	130			
Thallium	0.000958	0.00150	0.00100	0	95.8	70	130			

Sample ID	CCV4-170605	Batch ID:	R92293	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 2:33:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.195	0.00250	0.200	0	97.7	90	110			
Arsenic	0.200	0.00500	0.200	0	99.8	90	110			
Barium	0.193	0.0100	0.200	0	96.6	90	110			
Beryllium	0.194	0.00100	0.200	0	97.0	90	110			
Cadmium	0.194	0.00100	0.200	0	97.0	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170605B

Sample ID	CCV4-170605	Batch ID:	R92293	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 2:33:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	5.16	0.300	5.00	0	103	90	110			
Chromium	0.200	0.00500	0.200	0	100	90	110			
Cobalt	0.204	0.00500	0.200	0	102	90	110			
Lead	0.195	0.00100	0.200	0	97.7	90	110			
Lithium	0.198	0.0100	0.200	0	99.2	90	110			
Molybdenum	0.187	0.00500	0.200	0	93.5	90	110			
Selenium	0.201	0.00500	0.200	0	100	90	110			
Thallium	0.206	0.00150	0.200	0	103	90	110			

Sample ID	LCVL4-170605	Batch ID:	R92293	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 2:36:00 PM	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	0.00496	0.00500	0.00500	0	99.3	70	130			
Barium	0.00474	0.0100	0.00500	0	94.8	70	130			
Beryllium	0.00116	0.00100	0.00100	0	116	70	130			
Cadmium	0.000968	0.00100	0.00100	0	96.8	70	130			
Calcium	0.104	0.300	0.100	0	104	70	130			
Chromium	0.00516	0.00500	0.00500	0	103	70	130			
Cobalt	0.00493	0.00500	0.00500	0	98.6	70	130			
Lead	0.00105	0.00100	0.00100	0	105	70	130			
Lithium	0.0106	0.0100	0.0100	0	106	70	130			
Molybdenum	0.00451	0.00500	0.00500	0	90.2	70	130			
Selenium	0.00527	0.00500	0.00500	0	105	70	130			
Thallium	0.000962	0.00150	0.00100	0	96.2	70	130			

Sample ID	CCV5-170605	Batch ID:	R92293	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 3:34:00 PM	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	0.199	0.00500	0.200	0	99.7	90	110			
Barium	0.199	0.0100	0.200	0	99.5	90	110			
Beryllium	0.205	0.00100	0.200	0	103	90	110			
Cadmium	0.198	0.00100	0.200	0	99.0	90	110			
Calcium	5.13	0.300	5.00	0	103	90	110			
Chromium	0.201	0.00500	0.200	0	101	90	110			
Cobalt	0.208	0.00500	0.200	0	104	90	110			
Lead	0.196	0.00100	0.200	0	98.2	90	110			
Lithium	0.209	0.0100	0.200	0	104	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170605B

Sample ID	CCV5-170605	Batch ID:	R92293	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 3:34:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.192	0.00500	0.200	0	95.9	90	110			
Selenium	0.199	0.00500	0.200	0	99.5	90	110			
Thallium	0.208	0.00150	0.200	0	104	90	110			

Sample ID	LCVL5-170605	Batch ID:	R92293	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170605B	Analysis Date:	6/5/2017 3:37:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.00201	0.00250	0.00200	0	101	70	130			
Arsenic	0.00488	0.00500	0.00500	0	97.6	70	130			
Barium	0.00491	0.0100	0.00500	0	98.1	70	130			
Beryllium	0.00103	0.00100	0.00100	0	103	70	130			
Cadmium	0.000974	0.00100	0.00100	0	97.4	70	130			
Calcium	0.106	0.300	0.100	0	106	70	130			
Chromium	0.00504	0.00500	0.00500	0	101	70	130			
Cobalt	0.00502	0.00500	0.00500	0	100	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Lithium	0.0101	0.0100	0.0100	0	101	70	130			
Molybdenum	0.00462	0.00500	0.00500	0	92.3	70	130			
Selenium	0.00462	0.00500	0.00500	0	92.3	70	130			
Thallium	0.000974	0.00150	0.00100	0	97.4	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170606A

The QC data in batch 80708 applies to the following samples: 1705286-01A, 1705286-02A, 1705286-03A

Sample ID	MB-80708	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L				
SampType:	MBLK	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:16:00 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	<0.0100	0.0300									

Sample ID	LCS-80708	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCS	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:18:00 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.194	0.0300	0.200	0	97.1	80	120				

Sample ID	LCSD-80708	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:19:00 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.207	0.0300	0.200	0	103	80	120	6.35	15		

Sample ID	1705303-01A SD	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L				
SampType:	SD	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:23:00 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	<0.500	1.50	0	0.324					0	10	
Calcium	44.3	15.0	0	44.5					0.321	10	

Sample ID	1705303-01A PDS	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:39:00 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	2.16	0.300	2.00	0.325	91.7	80	120				
Calcium	92.0	3.00	50.0	44.5	95.1	80	120				

Sample ID	1705303-01A MS	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L				
SampType:	MS	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:41:00 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.459	0.300	0.200	0.325	67.4	80	120				S

Sample ID	1705303-01A MSD	Batch ID:	80708	TestNo:	SW6020A	Units:	mg/L				
SampType:	MSD	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:42:00 AM	Prep Date:	6/1/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.427	0.300	0.200	0.325	51.4	80	120	0.664	15		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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170606A

Sample ID	ICV-170606	Batch ID:	R92309	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 10:28:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0960	0.0300	0.100	0	96.0	90	110			
Calcium		2.44	0.300	2.50	0	97.8	90	110			

Sample ID	LCVL-170606	Batch ID:	R92309	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 10:32:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0252	0.0300	0.0200	0	126	70	130			
Calcium		0.120	0.300	0.100	0	120	70	130			

Sample ID	CCV1-170606	Batch ID:	R92309	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:06:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.208	0.0300	0.200	0	104	90	110			
Calcium	5.25	0.300	5.00	0	105	90	110			

Sample ID	LCVL1-170606	Batch ID:	R92309	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:12:00 AM	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		0.0861	0.300	0.100	0	86.1	70	130			

Sample ID	CCV2-170606	Batch ID:	R92309	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:44:00 AM	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		5.15	0.300	5.00	0	103	90	110			

Sample ID	LCVL2-170606	Batch ID:	R92309	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 11:51:00 AM	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		0.111	0.300	0.100	0	111	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170606A

Sample ID	CCV3-170606	Batch ID:	R92309	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170606A	Analysis Date:	6/6/2017 1:25:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.18	0.300	5.00	0	104	90	110			

Sample ID	LCVL3-170606			Batch ID:	R92309		TestNo:	SW6020A		Units:	mg/L			
SampType:	LCVL			Run ID:	ICP-MS5_170606A		Analysis Date:	6/6/2017 1:28:00 PM		Prep Date:				
Analyte	Result			RL	SPK value		Ref Val	%REC		LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.119			0.300	0.100		0	119		70	130			

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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_170601A

The QC data in batch 80700 applies to the following samples: 1705286-01D, 1705286-02D, 1705286-03D

Sample ID	MB-80700	Batch ID:	80700	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC2_170601A	Analysis Date:	6/1/2017 9:02:16 AM	Prep Date:	6/1/2017			
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	LCS-80700	Batch ID:	80700	TestNo:	E300	Units:	mg/L			
SampType:	LCS	Run ID:	IC2_170601A	Analysis Date:	6/1/2017 9:16:53 AM	Prep Date:	6/1/2017			
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	3.97	0.400	4.000	0	99.2	90	110			
Sulfate	30.1	3.00	30.00	0	100	90	110			

Sample ID	LCSD-80700	Batch ID:	80700	TestNo:	E300	Units:	mg/L			
SampType:	LCSD	Run ID:	IC2_170601A	Analysis Date:	6/1/2017 9:31:29 AM	Prep Date:	6/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.1	1.00	10.00	0	101	90	110	0.008	20	
Fluoride	4.04	0.400	4.000	0	101	90	110	1.81	20	
Sulfate	30.0	3.00	30.00	0	100	90	110	0.304	20	

Sample ID	1705316-01AMS	Batch ID:	80700	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC2_170601A	Analysis Date:	6/1/2017 11:51:55 AM	Prep Date:	6/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	327	10.0	200.0	108.2	109	90	110			
Fluoride	227	4.00	200.0	0	113	90	110			S
Sulfate	247	30.0	200.0	40.96	103	90	110			

Sample ID	1705316-01AMSD	Batch ID:	80700	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC2_170601A	Analysis Date:	6/1/2017 12:06:31 PM	Prep Date:	6/1/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	329	10.0	200.0	108.2	110	90	110	0.661	20	
Fluoride	228	4.00	200.0	0	114	90	110	0.658	20	S
Sulfate	247	30.0	200.0	40.96	103	90	110	0.185	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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_170601A

Sample ID	ICV-170601	Batch ID:	R92244	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC2_170601A	Analysis Date:	6/1/2017 8:20:07 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.6	1.00	25.00	0	102	90	110			
Fluoride	9.90	0.400	10.00	0	99.0	90	110			
Sulfate	76.6	3.00	75.00	0	102	90	110			

Sample ID	CCV1-170601	Batch ID:	R92244	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC2_170601A	Analysis Date:	6/1/2017 1:48:06 PM	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	4.17	0.400	4.000	0	104	90	110			
Sulfate	30.3	3.00	30.00	0	101	90	110			

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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170530A

The QC data in batch 80650 applies to the following samples: 1705286-01D, 1705286-02D, 1705286-03D

Sample ID	1705280-01D-DUP	Batch ID:	80650	TestNo:	M4500-H+ B	Units:	pH Units@18°C
SampType:	DUP	Run ID:	TITRATOR_170530A	Analysis Date:	5/30/2017 8:58:00 AM	Prep Date:	5/30/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		3.77	0	0	3.770		0 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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170530A

Sample ID	ICV-170530	Batch ID:	R92194	TestNo:	M4500-H+ B	Units:	pH Units@21.9°C				
SampType:	ICV	Run ID:	TITRATOR_170530A	Analysis Date:	5/30/2017 8:24:00 AM	Prep Date:	5/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH		9.92	0	10.00	0	99.2	99	101			

Sample ID	CCV1-170530			Batch ID:	R92194		TestNo:	M4500-H+ B		Units:	pH Units@21.6°C	
SampType:	CCV			Run ID:	TITRATOR_170530A		Analysis Date:	5/30/2017 9:09:00 AM		Prep Date:	5/30/2017	
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

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: 1705286
Project: Luminant A-1

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170530C

The QC data in batch 80666 applies to the following samples: 1705286-01D, 1705286-02D, 1705286-03D

Sample ID	MB-80666	Batch ID:	80666	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_170530C	Analysis Date:	5/31/2017 8:53:00 AM	Prep Date:	5/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-80666	Batch ID:	80666	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_170530C	Analysis Date:	5/31/2017 8:53:00 AM	Prep Date:	5/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 759 10.0 745.6 0 102 90 113

Sample ID	1705286-02D-DUP	Batch ID:	80666	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170530C	Analysis Date:	5/31/2017 8:53:00 AM	Prep Date:	5/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 2110 50.0 0 2115 0.474 5

Sample ID	1705300-09D-DUP	Batch ID:	80666	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170530C	Analysis Date:	5/31/2017 8:53:00 AM	Prep Date:	5/30/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 1230 50.0 0 1195 2.48 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: 20170479

This report contains the analytical results for the 3 sample(s) received under chain of custody by ESC Lab Sciences on 5/30/2017 11:30:35 AM. These samples are associated with your 1705286 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.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

Observations / Nonconformances

L913295

The following QC parameters are outside method control limits:

MSD %REC Radium-226 SDG# R1241

Client : DHL Analytical, Inc.
 Client Project : 1705286
 Lab Number : 20170479
 Date Reported : 06/21/17
 Date Received : 05/30/17
 Page Number : 2 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
Lab ID : 20170479-01							
Client ID : BMW-27							
Date Sampled : 5/25/2017 9:35:00 AM							
Matrix : NPW							
Radiochemical Analyses							
Combined Radium	1.45 +/- 0.74	0.787	pCi/l				
Radium-226 SM 7500 Ra B M*	0.073 +/- 0.233	0.443	pCi/l		06/15/17	06/20/17	SD
Radium-228 EPA 904*	1.38 +/- 0.507	0.344	pCi/l		06/09/17	06/15/17	JR
Lab ID : 20170479-02							
Client ID : BMW-26							
Date Sampled : 5/25/2017 10:35:00 AM							
Matrix : NPW							
Radiochemical Analyses							
Combined Radium	0.841 +/- 0.756	0.785	pCi/l				
Radium-226 SM 7500 Ra B M*	0.023 +/- 0.206	0.477	pCi/l		06/15/17	06/20/17	SD
Radium-228 EPA 904*	0.818 +/- 0.550	0.308	pCi/l		06/09/17	06/15/17	JR
Lab ID : 20170479-03							
Client ID : BMW-28							
Date Sampled : 5/25/2017 11:40:00 AM							
Matrix : NPW							
Radiochemical Analyses							
Combined Radium	1.70 +/- 1.30	1.14	pCi/l				
Radium-226 SM 7500 Ra B M*	0.534 +/- 0.566	0.739	pCi/l		06/15/17	06/20/17	SD
Radium-228 EPA 904*	1.17 +/- 0.736	0.403	pCi/l		06/09/17	06/15/17	JR

Client : DHL Analytical, Inc.
 Client Project : 1705286
 Lab Number : 20170479
 Date Reported : 06/21/17
 Date Received : 05/30/17
 Page Number : 3 of 3

QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.107	80.2			NC	0.544	125.0	131.0	4.4	R1241
Radium-228	-0.090	84.7			NC	0.065	93.5	103.0	9.1	R3969

Lab Approval:



Ron Eidson
Director of Radiochemistry

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

TEL: (512) 388-8222 FAX: (512) 388-8229

Work Order: 1705286

Subcontractor:

ESC Laboratory
311 North Aspen
Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515
FAX:
Acct #: DHLRRTX

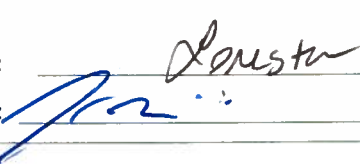
26-May-17

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests	
					E904.0	M7500Ra-B M
BMW-27	Aqueous	-01B	05/25/17 09:35 AM	1LHDPEHNO3	1	
BMW-27	Aqueous	-01C	05/25/17 09:35 AM	1LHDPEHNO3		1
BMW-26	Aqueous	-02B	05/25/17 10:35 AM	1LHDPEHNO3	1	
BMW-26	Aqueous	-02C	05/25/17 10:35 AM	1LHDPEHNO3		1
BMW-28	Aqueous	-03B	05/25/17 11:40 AM	1LHDPEHNO3	1	
BMW-28	Aqueous	-03C	05/25/17 11:40 AM	1LHDPEHNO3		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

20170479 L913295

Relinquished by: 	Date/Time: 5/24/17 1730	Received by: 	Date/Time: 5/24/17 1730
Relinquished by:		Received by:	5/30/17 1130

SAMPLE LOGIN

Date Received: 5/30/2017 11:30:3

Lab Number: 20170479

Due: 6/27/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170479-01 B	BMW-27	NPW	05/25/17	Plastic	1 L	HNO3, pH < 2	✓	Yes	Yes
20170479-01 A	BMW-27	NPW	05/25/17	Plastic	1 L	HNO3, pH < 2	✓	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170479-02 B	BMW-26	NPW	05/25/17	Plastic	1 L	HNO3, pH < 2	✓	Yes	Yes
20170479-02 A	BMW-26	NPW	05/25/17	Plastic	1 L	HNO3, pH < 2	✓	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						
20170479-03 B	BMW-28	NPW	05/25/17	Plastic	1 L	HNO3, pH < 2	✓	Yes	Yes
20170479-03 A	BMW-28	NPW	05/25/17	Plastic	1 L	HNO3, pH < 2	✓	Yes	Yes
Radium-226			SM 7500 Ra B M*						
Radium-228			EPA 904*						

CONTAINER INSPECTION

Coolers 1 Custody Seals Broken 0 Temperature: 16°C Ice Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken 0 Chain of Custody Record ✓ Labels in Tact ✓ Radiation Survey Complete N/A

Anomalies

Inspected By: [Signature] DATE 5/30/17
 QA or Designee Review: [Signature] DATE 05/30/17
 Sample Custodian Review: [Signature] DATE 5/30/17

Project Notes:



July 27, 2017

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

Order No.: 1706346

Dear Will Vienne:

DHL Analytical, Inc. received 3 sample(s) on 6/30/2017 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,

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

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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Nº 75768
CHAIN-OF-CUSTODY

CLIENT: Pastor, Behling & Wheeler, LLC.
ADDRESS: 5416 Plaza Drive, Texasburg, TX
PHONE: 903-794-0625 FAX/E-MAIL: _____
DATA REPORTED TO: Will Vienna
ADDITIONAL REPORT COPIES TO: _____

DATE: 6-29-17 PAGE 1 OF 1
PO #: 5164-B DHL WORK ORDER #: 1706376
 PROJECT LOCATION OR NAME: Beckville mine
 CLIENT PROJECT #: 5164-B COLLECTOR: Keith Storch

[illegible]

RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE/TIME 6/29/17 1535	RECEIVED BY: (Signature) <i>[Signature]</i>
RELINQUISHED BY: (Signature) <i>[Signature]</i>	DATE/TIME 6.30.17 9:30	RECEIVED BY: (Signature) <i>[Signature]</i>

TURN AROUND TIME
 RUSH ☐ CALL FIRST
 1 DAY ☐ CALL FIRST
 2 DAY ☐
 NORMAL ☒
 OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 1.1 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@pbwilo.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

2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 786643843
UNITED STATES US

DIMS: 24x14x15 IN

BILL SENDER

TO **LAB RECEIVING**
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222

INV:
PO:

REF:

DEPT:



FedEx
Express



J171117021401W

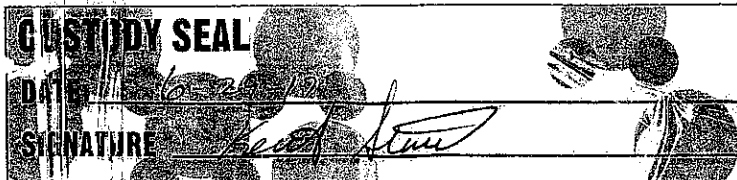
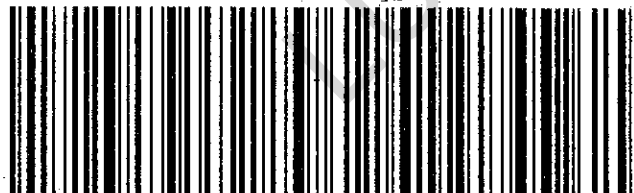
TRK# 8022 5110 8391
0200

FRI - 30 JUN 3:00P
STANDARD OVERNIGHT

A8 BSMA

78664

TX-US AUS



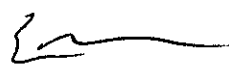
Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 6/30/2017

Work Order Number 1706346

Received by JT

Checklist completed by: 

6/30/2017

Signature

Date

Reviewed by 

6/30/2017

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 ☐	1.1 °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? <u>no</u>		Checked by <u>EL</u>
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: Beckville Mine
Lab Order: 1706346

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 6/30/17. A total of 3 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 7/13/17 the matrix spike and matrix spike duplicate recoveries were out of control limits for 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 7/13/17 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.

ANIONS ANALYSIS

For Anions analysis performed on 7/12/17 the matrix spike recovery (1706346-03 MS) was above control limits for Sulfate. This is 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 this analyte. No further corrective actions were taken.

TDS ANALYSIS

For TDS analysis all samples were analyzed one day outside of HoldTime due to log-in error. All TDS results are flagged with a "C" to designate this.

CLIENT: Pastor, Behling & Wheeler
Project: Beckville Mine
Lab Order: 1706346**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1706346-01	BMW-26		06/29/17 01:45 PM	6/30/2017
1706346-02	BMW-27		06/29/17 02:50 PM	6/30/2017
1706346-03	BMW-28		06/29/17 12:20 PM	6/30/2017

LUMINANT

Lab Order: 1706346
Client: Pastor, Behling & Wheeler
Project: Beckville Mine

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1706346-01A	BMW-26	06/29/17 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-26	06/29/17 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-26	06/29/17 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-26	06/29/17 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-26	06/29/17 01:45 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	07/03/17 10:50 AM	81248
1706346-01B	BMW-26	06/29/17 01:45 PM	Aqueous	E300	Anion Preparation	07/12/17 08:57 AM	81368
	BMW-26	06/29/17 01:45 PM	Aqueous	E300	Anion Preparation	07/12/17 08:57 AM	81368
	BMW-26	06/29/17 01:45 PM	Aqueous	M4500-H+ B	pH Preparation	07/07/17 12:30 PM	81316
	BMW-26	06/29/17 01:45 PM	Aqueous	M2540C	TDS Preparation	07/07/17 10:30 AM	81315
1706346-02A	BMW-27	06/29/17 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-27	06/29/17 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-27	06/29/17 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-27	06/29/17 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-27	06/29/17 02:50 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-27	06/29/17 02:50 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	07/03/17 10:50 AM	81248
1706346-02B	BMW-27	06/29/17 02:50 PM	Aqueous	E300	Anion Preparation	07/12/17 08:57 AM	81368
	BMW-27	06/29/17 02:50 PM	Aqueous	E300	Anion Preparation	07/12/17 08:57 AM	81368
	BMW-27	06/29/17 02:50 PM	Aqueous	M4500-H+ B	pH Preparation	07/07/17 12:30 PM	81316
	BMW-27	06/29/17 02:50 PM	Aqueous	M2540C	TDS Preparation	07/07/17 10:30 AM	81315
1706346-03A	BMW-28	06/29/17 12:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-28	06/29/17 12:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-28	06/29/17 12:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-28	06/29/17 12:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	07/11/17 08:11 AM	81348
	BMW-28	06/29/17 12:20 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	07/03/17 10:50 AM	81248
1706346-03B	BMW-28	06/29/17 12:20 PM	Aqueous	E300	Anion Preparation	07/12/17 08:57 AM	81368
	BMW-28	06/29/17 12:20 PM	Aqueous	E300	Anion Preparation	07/12/17 08:57 AM	81368
	BMW-28	06/29/17 12:20 PM	Aqueous	M4500-H+ B	pH Preparation	07/07/17 12:30 PM	81316
	BMW-28	06/29/17 12:20 PM	Aqueous	M2540C	TDS Preparation	07/07/17 10:30 AM	81315

Lab Order: 1706346
Client: Pastor, Behling & Wheeler
Project: Beckville Mine

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1706346-01A	BMW-26	Aqueous	SW7470A	Mercury Total: Aqueous	81248	1	07/05/17 10:51 AM	CETAC2_HG_170705 B
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/12/17 02:11 PM	ICP-MS5_170712B
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	50	07/13/17 11:20 AM	ICP-MS5_170713A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/13/17 12:41 PM	ICP-MS5_170713A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/14/17 12:29 PM	ICP-MS5_170714B
1706346-01B	BMW-26	Aqueous	E300	Anions by IC method - Water	81368	10	07/12/17 01:27 PM	IC3_170712A
	BMW-26	Aqueous	E300	Anions by IC method - Water	81368	1	07/13/17 12:44 AM	IC3_170712A
	BMW-26	Aqueous	M4500-H+ B	pH	81316	1	07/07/17 01:55 PM	TITRATOR_170707B
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	81315	1	07/10/17 08:50 AM	WC_170707B
1706346-02A	BMW-27	Aqueous	SW7470A	Mercury Total: Aqueous	81248	1	07/05/17 10:53 AM	CETAC2_HG_170705 B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/14/17 12:31 PM	ICP-MS5_170714B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/12/17 03:15 PM	ICP-MS5_170712B
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	10	07/13/17 11:49 AM	ICP-MS5_170713A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/13/17 12:42 PM	ICP-MS5_170713A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	100	07/13/17 12:11 PM	ICP-MS5_170713A
1706346-02B	BMW-27	Aqueous	E300	Anions by IC method - Water	81368	10	07/12/17 01:48 PM	IC3_170712A
	BMW-27	Aqueous	E300	Anions by IC method - Water	81368	1	07/13/17 01:05 AM	IC3_170712A
	BMW-27	Aqueous	M4500-H+ B	pH	81316	1	07/07/17 01:58 PM	TITRATOR_170707B
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	81315	1	07/10/17 08:50 AM	WC_170707B
1706346-03A	BMW-28	Aqueous	SW7470A	Mercury Total: Aqueous	81248	1	07/05/17 10:56 AM	CETAC2_HG_170705 B
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/12/17 01:53 PM	ICP-MS5_170712B
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	50	07/13/17 11:03 AM	ICP-MS5_170713A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/13/17 12:30 PM	ICP-MS5_170713A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81348	1	07/14/17 12:25 PM	ICP-MS5_170714B
1706346-03B	BMW-28	Aqueous	E300	Anions by IC method - Water	81368	10	07/12/17 02:09 PM	IC3_170712A
	BMW-28	Aqueous	E300	Anions by IC method - Water	81368	1	07/13/17 01:25 AM	IC3_170712A

Lab Order: 1706346
Client: Pastor, Behling & Wheeler
Project: Beckville Mine

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1706346-03B	BMW-28	Aqueous	M4500-H+ B	pH	81316	1	07/07/17 02:01 PM	TITRATOR_170707B
	BMW-28	Aqueous	M2540C	Total Dissolved Solids	81315	1	07/10/17 08:50 AM	WC_170707B

LUMINANT

DHL Analytical, Inc.

Date: 27-Jul-17

CLIENT: Pastor, Behling & Wheeler
Project: Beckville Mine
Project No: 5164-B
Lab Order: 1706346

Client Sample ID: BMW-26
Lab ID: 1706346-01
Collection Date: 06/29/17 01:45 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	07/12/17 02:11 PM
Arsenic	0.0328	0.00200	0.00500		mg/L	1	07/12/17 02:11 PM
Barium	0.0352	0.00300	0.0100		mg/L	1	07/12/17 02:11 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	07/13/17 12:41 PM
Boron	0.507	0.0100	0.0300		mg/L	1	07/13/17 12:41 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	07/12/17 02:11 PM
Calcium	233	5.00	15.0		mg/L	50	07/13/17 11:20 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	07/12/17 02:11 PM
Cobalt	<0.00300	0.00300	0.00500		mg/L	1	07/12/17 02:11 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	07/12/17 02:11 PM
Lithium	0.0985	0.00500	0.0100		mg/L	1	07/14/17 12:29 PM
Molybdenum	0.00257	0.00200	0.00500	J	mg/L	1	07/12/17 02:11 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	07/12/17 02:11 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	07/12/17 02:11 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	07/05/17 10:51 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: JL			
Chloride	111	3.00	10.0		mg/L	10	07/12/17 01:27 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	07/13/17 12:44 AM
Sulfate	604	10.0	30.0		mg/L	10	07/12/17 01:27 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.03	0	0		pH Units@20°C	1	07/07/17 01:55 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: PT			
Total Dissolved Solids (Residue, Filterable)	1700	50.0	50.0	C	mg/L	1	07/10/17 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: 27-Jul-17

CLIENT: Pastor, Behling & Wheeler
Project: Beckville Mine
Project No: 5164-B
Lab Order: 1706346

Client Sample ID: BMW-27
Lab ID: 1706346-02
Collection Date: 06/29/17 02:50 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	07/12/17 03:15 PM
Arsenic	0.00593	0.00200	0.00500		mg/L	1	07/12/17 03:15 PM
Barium	0.0307	0.00300	0.0100		mg/L	1	07/12/17 03:15 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	07/13/17 12:42 PM
Boron	0.390	0.0100	0.0300		mg/L	1	07/13/17 12:42 PM
Cadmium	0.000851	0.000300	0.00100	J	mg/L	1	07/12/17 03:15 PM
Calcium	144	10.0	30.0		mg/L	100	07/13/17 12:11 PM
Chromium	0.00266	0.00200	0.00500	J	mg/L	1	07/12/17 03:15 PM
Cobalt	0.225	0.00300	0.00500		mg/L	1	07/12/17 03:15 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	07/12/17 03:15 PM
Lithium	0.0480	0.00500	0.0100		mg/L	1	07/14/17 12:31 PM
Molybdenum	<0.00200	0.00200	0.00500		mg/L	1	07/12/17 03:15 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	07/12/17 03:15 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	07/12/17 03:15 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	07/05/17 10:53 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: JL			
Chloride	129	3.00	10.0		mg/L	10	07/12/17 01:48 PM
Fluoride	0.717	0.100	0.400		mg/L	1	07/13/17 01:05 AM
Sulfate	1180	10.0	30.0		mg/L	10	07/12/17 01:48 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	6.11	0	0		pH Units@20°C	1	07/07/17 01:58 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: PT			
Total Dissolved Solids (Residue, Filterable)	2080	50.0	50.0	C	mg/L	1	07/10/17 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: 27-Jul-17

CLIENT: Pastor, Behling & Wheeler
Project: Beckville Mine
Project No: 5164-B
Lab Order: 1706346

Client Sample ID: BMW-28
Lab ID: 1706346-03
Collection Date: 06/29/17 12:20 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	07/12/17 01:53 PM
Arsenic	0.00253	0.00200	0.00500	J	mg/L	1	07/12/17 01:53 PM
Barium	0.0549	0.00300	0.0100		mg/L	1	07/12/17 01:53 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	07/13/17 12:30 PM
Boron	1.21	0.0100	0.0300		mg/L	1	07/13/17 12:30 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	07/12/17 01:53 PM
Calcium	269	5.00	15.0		mg/L	50	07/13/17 11:03 AM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	07/12/17 01:53 PM
Cobalt	0.00840	0.00300	0.00500		mg/L	1	07/12/17 01:53 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	07/12/17 01:53 PM
Lithium	0.104	0.00500	0.0100		mg/L	1	07/14/17 12:25 PM
Molybdenum	0.00754	0.00200	0.00500		mg/L	1	07/12/17 01:53 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	07/12/17 01:53 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	07/12/17 01:53 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	07/05/17 10:56 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: JL			
Chloride	130	3.00	10.0		mg/L	10	07/12/17 02:09 PM
Fluoride	0.137	0.100	0.400	J	mg/L	1	07/13/17 01:25 AM
Sulfate	1450	10.0	30.0		mg/L	10	07/12/17 02:09 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.13	0	0		pH Units@20.1°C	1	07/07/17 02:01 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: PT			
Total Dissolved Solids (Residue, Filterable)	2950	50.0	50.0	C	mg/L	1	07/10/17 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		

CLIENT: Pastor, Behling & Wheeler
Work Order: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT**RunID: CETAC2_HG_170705B**

The QC data in batch 81248 applies to the following samples: 1706346-01A, 1706346-02A, 1706346-03A

Sample ID	MB-81248		Batch ID:	81248		TestNo:	SW7470A		Units:	mg/L	
SampType:	MBLK		Run ID:	CETAC2_HG_170705		Analysis Date:	7/5/2017 10:19:46 AM		Prep Date:	7/3/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-81248			Batch ID:	81248		TestNo:	SW7470A		Units:	mg/L	
SampType:	LCS			Run ID:	CETAC2_HG_170705		Analysis Date:	7/5/2017 10:22:02 AM		Prep Date:	7/3/2017	
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	LCSD-81248	Batch ID:	81248	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_170705	Analysis Date:	7/5/2017 10:24:18 AM	Prep Date:	7/3/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00200 0.000200 0.00200 0 100 85 115 6.76 15

Sample ID	1706287-35D SD	Batch ID:	81248	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_170705	Analysis Date:	7/5/2017 10:31:06 AM	Prep Date:	7/3/2017			
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	1706287-35D PDS	Batch ID:	81248	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_170705	Analysis Date:	7/5/2017 10:33:21 AM	Prep Date:	7/3/2017			
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	1706287-35D MS	Batch ID:	81248	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_170705	Analysis Date:	7/5/2017 10:35:37 AM	Prep Date:	7/3/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00189 0.000200 0.00200 0 94.5 80 120

Sample ID	1706287-35D MSD	Batch ID:	81248	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_170705	Analysis Date:	7/5/2017 10:37:53 AM	Prep Date:	7/3/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Mercury 0.00200 0.000200 0.00200 0 100 80 120 5.66 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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170705B

Sample ID	ICV-170705	Batch ID:	R92871	TestNo:	SW7470A	Units:	mg/L				
SampType:	ICV	Run ID:	CETAC2_HG_170705	Analysis Date:	7/5/2017 9:02:30 AM	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			

Sample ID	CCV2-170705	Batch ID:	R92871	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_170705	Analysis Date:	7/5/2017 10:15:12 AM	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	90	110			

Sample ID	CCV3-170705		Batch ID:	R92871		TestNo:	SW7470A		Units:	mg/L	
SampType:	CCV		Run ID:	CETAC2_HG_170705		Analysis Date:	7/5/2017 10:58:18 AM		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			

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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170712B

The QC data in batch 81348 applies to the following samples: 1706346-01A, 1706346-02A, 1706346-03A

Sample ID	MB-81348		Batch ID:	81348		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS5_170712B		Analysis Date:	7/12/2017 1:46:00 PM		Prep Date:	7/11/2017	
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
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	LCS-81348		Batch ID:	81348		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS5_170712B		Analysis Date:	7/12/2017 1:48:00 PM		Prep Date:	7/11/2017	
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	0.200	0.00500	0.200	0	100	80	120
Barium	0.202	0.0100	0.200	0	101	80	120
Cadmium	0.204	0.00100	0.200	0	102	80	120
Chromium	0.204	0.00500	0.200	0	102	80	120
Cobalt	0.203	0.00500	0.200	0	101	80	120
Lead	0.195	0.00100	0.200	0	97.3	80	120
Molybdenum	0.198	0.00500	0.200	0	98.8	80	120
Selenium	0.199	0.00500	0.200	0	99.5	80	120
Thallium	0.193	0.00150	0.200	0	96.4	80	120

Sample ID	LCSD-81348	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS5_170712B	Analysis Date:	7/12/2017 1:50:00 PM	Prep Date:	7/11/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.199	0.00250	0.200	0	99.5	80	120	0.525	15
Arsenic	0.199	0.00500	0.200	0	99.5	80	120	0.591	15
Barium	0.200	0.0100	0.200	0	100	80	120	0.879	15
Cadmium	0.202	0.00100	0.200	0	101	80	120	1.09	15
Chromium	0.201	0.00500	0.200	0	100	80	120	1.35	15
Cobalt	0.201	0.00500	0.200	0	101	80	120	0.906	15
Lead	0.194	0.00100	0.200	0	97.2	80	120	0.102	15
Molybdenum	0.196	0.00500	0.200	0	98.0	80	120	0.806	15
Selenium	0.196	0.00500	0.200	0	97.8	80	120	1.76	15
Thallium	0.194	0.00150	0.200	0	96.9	80	120	0.491	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170712B

Sample ID	1706346-03A SD			Batch ID:	81348		TestNo:	SW6020A		Units:	mg/L	
SampType:	SD			Run ID:	ICP-MS5_170712B		Analysis Date:	7/12/2017 1:55:00 PM		Prep Date:	7/11/2017	
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	0.00253				0	10	
Barium	0.0530	0.0500	0	0.0549				3.50	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	0.00840				0	10	
Lead	<0.00150	0.00500	0	0				0	10	
Molybdenum	<0.0100	0.0250	0	0.00754				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID	1706346-03A PDS		Batch ID:	81348		TestNo:	SW6020A		Units:	mg/L	
SampType:	PDS		Run ID:	ICP-MS5_170712B		Analysis Date:	7/12/2017 2:13:00 PM		Prep Date:	7/11/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.186	0.00250	0.200	0	93.2	80	120			
Arsenic	0.203	0.00500	0.200	0.00253	100	80	120			
Barium	0.248	0.0100	0.200	0.0549	96.5	80	120			
Cadmium	0.191	0.00100	0.200	0	95.7	80	120			
Chromium	0.205	0.00500	0.200	0	102	80	120			
Cobalt	0.205	0.00500	0.200	0.00840	98.5	80	120			
Lead	0.201	0.00100	0.200	0	100	80	120			
Molybdenum	0.195	0.00500	0.200	0.00754	93.8	80	120			
Selenium	0.201	0.00500	0.200	0	100	80	120			
Thallium	0.199	0.00150	0.200	0	99.4	80	120			

Sample ID	1706346-03A MS	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L				
SampType:	MS	Run ID:	ICP-MS5_170712B	Analysis Date:	7/12/2017 2:15:00 PM	Prep Date:	7/11/2017				
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	0.202	0.00500	0.200	0.00253	99.6	80	120			
Barium	0.263	0.0100	0.200	0.0549	104	80	120			
Cadmium	0.197	0.00100	0.200	0	98.3	80	120			
Chromium	0.197	0.00500	0.200	0	98.7	80	120			
Cobalt	0.203	0.00500	0.200	0.00840	97.3	80	120			
Lead	0.200	0.00100	0.200	0	99.8	80	120			
Molybdenum	0.208	0.00500	0.200	0.00754	100	80	120			
Selenium	0.200	0.00500	0.200	0	99.8	80	120			
Thallium	0.200	0.00150	0.200	0	100	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170712B

Sample ID	1706346-03A MSD	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS5_170712B	Analysis Date:	7/12/2017 2:16:00 PM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.210	0.00250	0.200	0	105	80	120	1.52	15	
Arsenic	0.203	0.00500	0.200	0.00253	100	80	120	0.740	15	
Barium	0.268	0.0100	0.200	0.0549	106	80	120	1.56	15	
Cadmium	0.201	0.00100	0.200	0	100	80	120	2.15	15	
Chromium	0.201	0.00500	0.200	0	100	80	120	1.64	15	
Cobalt	0.205	0.00500	0.200	0.00840	98.4	80	120	1.12	15	
Lead	0.203	0.00100	0.200	0	101	80	120	1.56	15	
Molybdenum	0.212	0.00500	0.200	0.00754	102	80	120	1.73	15	
Selenium	0.199	0.00500	0.200	0	99.3	80	120	0.513	15	
Thallium	0.203	0.00150	0.200	0	101	80	120	1.28	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170712B

Sample ID	ICV-170712	Batch ID:	R93017	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS5_170712B	Analysis Date:	7/12/2017 10:26:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.102	0.00250	0.100	0	102	90	110			
Arsenic	0.0996	0.00500	0.100	0	99.6	90	110			
Barium	0.0984	0.0100	0.100	0	98.4	90	110			
Cadmium	0.101	0.00100	0.100	0	101	90	110			
Chromium	0.104	0.00500	0.100	0	104	90	110			
Cobalt	0.102	0.00500	0.100	0	102	90	110			
Lead	0.0956	0.00100	0.100	0	95.6	90	110			
Molybdenum	0.0946	0.00500	0.100	0	94.6	90	110			
Selenium	0.0976	0.00500	0.100	0	97.6	90	110			
Thallium	0.0943	0.00150	0.100	0	94.3	90	110			

Sample ID	LCVL-170712	Batch ID:	R93017	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170712B	Analysis Date:	7/12/2017 10:32:00 AM	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	0.00503	0.00500	0.00500	0	101	70	130			
Barium	0.00505	0.0100	0.00500	0	101	70	130			
Cadmium	0.00101	0.00100	0.00100	0	101	70	130			
Chromium	0.00525	0.00500	0.00500	0	105	70	130			
Cobalt	0.00514	0.00500	0.00500	0	103	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Molybdenum	0.00476	0.00500	0.00500	0	95.2	70	130			
Selenium	0.00450	0.00500	0.00500	0	90.0	70	130			
Thallium	0.000992	0.00150	0.00100	0	99.2	70	130			

Sample ID	CCV5-170712	Batch ID:	R93017	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170712B	Analysis Date:	7/12/2017 1:30:00 PM	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	0.202	0.00500	0.200	0	101	90	110			
Barium	0.205	0.0100	0.200	0	102	90	110			
Cadmium	0.207	0.00100	0.200	0	104	90	110			
Chromium	0.208	0.00500	0.200	0	104	90	110			
Cobalt	0.205	0.00500	0.200	0	102	90	110			
Lead	0.197	0.00100	0.200	0	98.7	90	110			
Molybdenum	0.200	0.00500	0.200	0	100	90	110			
Selenium	0.201	0.00500	0.200	0	101	90	110			
Thallium	0.198	0.00150	0.200	0	98.8	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170712B

Sample ID	LCVL5-170712	Batch ID:	R93017	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170712B	Analysis Date:	7/12/2017 1:35:00 PM	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	0.00507	0.00500	0.00500	0	101	70	130			
Barium	0.00500	0.0100	0.00500	0	99.9	70	130			
Cadmium	0.000996	0.00100	0.00100	0	99.6	70	130			
Chromium	0.00513	0.00500	0.00500	0	103	70	130			
Cobalt	0.00506	0.00500	0.00500	0	101	70	130			
Lead	0.00100	0.00100	0.00100	0	100	70	130			
Molybdenum	0.00486	0.00500	0.00500	0	97.1	70	130			
Selenium	0.00505	0.00500	0.00500	0	101	70	130			
Thallium	0.000989	0.00150	0.00100	0	98.9	70	130			

Sample ID	CCV6-170712			Batch ID:	R93017		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV			Run ID:	ICP-MS5_170712B		Analysis Date:	7/12/2017 2:18:00 PM		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	0.206	0.00500	0.200	0	103	90	110			
Barium	0.213	0.0100	0.200	0	107	90	110			
Cadmium	0.211	0.00100	0.200	0	106	90	110			
Chromium	0.214	0.00500	0.200	0	107	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	0.204	0.00500	0.200	0	102	90	110			
Selenium	0.208	0.00500	0.200	0	104	90	110			
Thallium	0.205	0.00150	0.200	0	103	90	110			

Sample ID	LCVL6-170712	Batch ID:	R93017	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170712B	Analysis Date:	7/12/2017 3:11:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00217	0.00250	0.00200	0	108	70	130			
Arsenic	0.00508	0.00500	0.00500	0	102	70	130			
Barium	0.00557	0.0100	0.00500	0	111	70	130			
Cadmium	0.00112	0.00100	0.00100	0	112	70	130			
Chromium	0.00525	0.00500	0.00500	0	105	70	130			
Cobalt	0.00531	0.00500	0.00500	0	106	70	130			
Lead	0.00106	0.00100	0.00100	0	106	70	130			
Molybdenum	0.00518	0.00500	0.00500	0	104	70	130			
Selenium	0.00596	0.00500	0.00500	0	119	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170712B

Sample ID	CCV7-170712			Batch ID:	R93017		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV			Run ID:	ICP-MS5_170712B		Analysis Date:	7/12/2017 3:38:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.201	0.00250	0.200	0	101	90	110			
Arsenic	0.206	0.00500	0.200	0	103	90	110			
Barium	0.205	0.0100	0.200	0	102	90	110			
Cadmium	0.203	0.00100	0.200	0	101	90	110			
Chromium	0.213	0.00500	0.200	0	106	90	110			
Cobalt	0.214	0.00500	0.200	0	107	90	110			
Lead	0.204	0.00100	0.200	0	102	90	110			
Molybdenum	0.194	0.00500	0.200	0	96.8	90	110			
Selenium	0.211	0.00500	0.200	0	105	90	110			
Thallium	0.202	0.00150	0.200	0	101	90	110			

Sample ID	LCVL7-170712			Batch ID:	R93017		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCVL			Run ID:	ICP-MS5_170712B		Analysis Date:	7/12/2017 3:41:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.00201	0.00250	0.00200	0	101	70	130			
Arsenic	0.00485	0.00500	0.00500	0	97.0	70	130			
Barium	0.00506	0.0100	0.00500	0	101	70	130			
Cadmium	0.00103	0.00100	0.00100	0	103	70	130			
Chromium	0.00448	0.00500	0.00500	0	89.5	70	130			
Cobalt	0.00526	0.00500	0.00500	0	105	70	130			
Lead	0.00102	0.00100	0.00100	0	102	70	130			
Molybdenum	0.00474	0.00500	0.00500	0	94.9	70	130			
Selenium	0.00478	0.00500	0.00500	0	95.7	70	130			
Thallium	0.00100	0.00150	0.00100	0	100	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170713A

The QC data in batch 81348 applies to the following samples: 1706346-01A, 1706346-02A, 1706346-03A

Sample ID	MB-81348		Batch ID:	81348		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS5_170713A		Analysis Date:	7/13/2017 10:56:00 AM		Prep Date:	7/11/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	<0.000300	0.00100								
Boron	<0.0100	0.0300								
Calcium	<0.100	0.300								
Lithium	<0.00500	0.0100								

Sample ID	LCS-81348	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCS	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 10:57:00 AM	Prep Date:	7/11/2017			
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			
Boron	0.201	0.0300	0.200	0	101	80	120			
Calcium	5.09	0.300	5.00	0	102	80	120			
Lithium	0.203	0.0100	0.200	0	101	80	120			

Sample ID	LCSD-81348	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCSD	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 10:59:00 AM	Prep Date:	7/11/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.200	0.00100	0.200	0	100	80	120	0.782	15	
Boron	0.200	0.0300	0.200	0	100	80	120	0.325	15	
Calcium	5.14	0.300	5.00	0	103	80	120	0.877	15	
Lithium	0.209	0.0100	0.200	0	104	80	120	2.91	15	

Sample ID	1706346-03A SD	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 11:04:00 AM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	271	75.0	0	269				0.778	10	

Sample ID	1706346-03A PDS	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L				
SampType:	PDS	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 11:22:00 AM	Prep Date:	7/11/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	512	15.0	250	269	97.0	80	120			

Sample ID	1706346-03A MS	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 11:24:00 AM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.207	0.0500	0.200	0	104	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170713A

Sample ID	1706346-03A MS	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 11:24:00 AM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	1.62	1.50	0.200	1.28	170	80	120			S
Calcium	267	15.0	5.00	269	-41.9	80	120			S
Lithium	0.342	0.500	0.200	0	171	80	120			S

Sample ID	1706346-03A MSD	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 11:26:00 AM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.204	0.0500	0.200	0	102	80	120	1.34	15	
Boron	1.82	1.50	0.200	1.28	269	80	120	11.6	15	S
Calcium	276	15.0	5.00	269	147	80	120	3.47	15	S
Lithium	0.384	0.500	0.200	0	192	80	120	11.7	15	S

Sample ID	1706346-03A SD	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 12:32:00 PM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	<0.00150	0.00500	0	0				0	10	
Boron	1.37	0.150	0	1.21				12.2	10	R

Sample ID	1706346-03A PDS	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 12:44:00 PM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.208	0.00100	0.200	0	104	80	120			
Boron	1.39	0.0300	0.200	1.21	88.0	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170713A

Sample ID	ICV-170713		Batch ID:	R93025		TestNo:	SW6020A		Units:	mg/L	
SampType:	ICV		Run ID:	ICP-MS5_170713A		Analysis Date:	7/13/2017 10:28:00 AM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.100	0.0100	0.100	0	100	90	110			
Beryllium	0.0998	0.00100	0.100	0	99.8	90	110			
Boron	0.103	0.0300	0.100	0	103	90	110			
Calcium	2.59	0.300	2.50	0	104	90	110			
Chromium	0.103	0.00500	0.100	0	103	90	110			
Lead	0.0960	0.00100	0.100	0	96.0	90	110			
Lithium	0.104	0.0100	0.100	0	104	90	110			

Sample ID	LCVL-170713		Batch ID:	R93025		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCVL		Run ID:	ICP-MS5_170713A		Analysis Date:	7/13/2017 10:31:00 AM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.00495	0.0100	0.00500	0	98.9	70	130			
Beryllium	0.00113	0.00100	0.00100	0	113	70	130			
Boron	0.0209	0.0300	0.0200	0	105	70	130			
Calcium	0.0984	0.300	0.100	0	98.4	70	130			
Chromium	0.00515	0.00500	0.00500	0	103	70	130			
Lead	0.00100	0.00100	0.00100	0	100	70	130			
Lithium	0.0111	0.0100	0.0100	0	111	70	130			

Sample ID	CCV1-170713		Batch ID:	R93025		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS5_170713A		Analysis Date:	7/13/2017 11:30:00 AM		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	0.199	0.0300	0.200	0	99.5	90	110			
Calcium	5.16	0.300	5.00	0	103	90	110			
Lithium	0.210	0.0100	0.200	0	105	90	110			

Sample ID	LCVL1-170713	Batch ID:	R93025	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 11:36:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Beryllium	0.00120	0.00100	0.00100	0	120	70	130			
Boron	0.0246	0.0300	0.0200	0	123	70	130			
Calcium	0.100	0.300	0.100	0	100	70	130			
Lithium	0.0113	0.0100	0.0100	0	113	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170713A

Sample ID	CCV2-170713	Batch ID:	R93025	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 11:57:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	5.23	0.300	5.00	0	105	90	110			

Sample ID	LCVL2-170713	Batch ID:	R93025	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 12:04:00 PM	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			

Sample ID	CCV3-170713	Batch ID:	R93025	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 12:14:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.206	0.00100	0.200	0	103	90	110			
Boron	0.213	0.0300	0.200	0	107	90	110			
Calcium	5.20	0.300	5.00	0	104	90	110			

Sample ID	LCVL3-170713	Batch ID:	R93025	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 12:22:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.000902	0.00100	0.00100	0	90.2	70	130			
Boron	0.0192	0.0300	0.0200	0	96.1	70	130			
Calcium	0.104	0.300	0.100	0	104	70	130			

Sample ID	CCV4-170713	Batch ID:	R93025	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 12:59:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.218	0.00100	0.200	0	109	90	110			
Boron	0.212	0.0300	0.200	0	106	90	110			

Sample ID	LCVL4-170713	Batch ID:	R93025	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS5_170713A	Analysis Date:	7/13/2017 1:29:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Beryllium	0.00110	0.00100	0.00100	0	110	70	130			
Boron	0.0209	0.0300	0.0200	0	104	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170714B

The QC data in batch 81348 applies to the following samples: 1706346-01A, 1706346-02A, 1706346-03A

Sample ID	1706346-03A SD	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS5_170714B	Analysis Date:	7/14/2017 12:27:00 PM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lithium	0.106	0.0500	0	0.104				2.02	10

Sample ID	1706346-03A PDS	Batch ID:	81348	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS5_170714B	Analysis Date:	7/14/2017 12:32:00 PM	Prep Date:	7/11/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Lithium	0.292	0.0100	0.200	0.104	94.1	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_170714B

Sample ID	ICV-170714	Batch ID:	R93056	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS5_170714B	Analysis Date:	7/14/2017 10:33:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium	0.0932	0.0100	0.100	0	93.2	90	110			

Sample ID	CCV3-170714	Batch ID:	R93056	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170714B	Analysis Date:	7/14/2017 12:16:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium		0.191	0.0100	0.200	0	95.3	90	110			

Sample ID	LCVL3-170714	Batch ID:	R93056	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170714B	Analysis Date:	7/14/2017 12:21:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium		0.00995	0.0100	0.0100	0	99.5	70	130			

Sample ID	CCV4-170714	Batch ID:	R93056	TestNo:	SW6020A	Units:	mg/L				
SampType:	CCV	Run ID:	ICP-MS5_170714B	Analysis Date:	7/14/2017 12:34:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium		0.200	0.0100	0.200	0	99.8	90	110			

Sample ID	LCVL4-170714	Batch ID:	R93056	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS5_170714B	Analysis Date:	7/14/2017 12:43:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lithium		0.00923	0.0100	0.0100	0	92.3	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_170712A

The QC data in batch 81368 applies to the following samples: 1706346-01B, 1706346-02B, 1706346-03B

Sample ID	MB-81368	Batch ID:	81368	TestNo:	E300	Units:	mg/L				
SampType:	MBLK	Run ID:	IC3_170712A	Analysis Date:	7/12/2017 10:49:18 AM	Prep Date:	7/12/2017				
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	LCS-81368	Batch ID:	81368	TestNo:	E300	Units:	mg/L				
SampType:	LCS	Run ID:	IC3_170712A	Analysis Date:	7/12/2017 11:12:47 AM	Prep Date:	7/12/2017				
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	4.19	0.400	4.000	0	105	90	110				
Sulfate	30.1	3.00	30.00	0	100	90	110				

Sample ID	LCSD-81368	Batch ID:	81368	TestNo:	E300	Units:	mg/L				
SampType:	LCSD	Run ID:	IC3_170712A	Analysis Date:	7/12/2017 11:33:27 AM	Prep Date:	7/12/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	10.3	1.00	10.00	0	103	90	110	2.71	20		
Fluoride	4.17	0.400	4.000	0	104	90	110	0.526	20		
Sulfate	30.2	3.00	30.00	0	101	90	110	0.465	20		

Sample ID	1706346-01BMS	Batch ID:	81368	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC3_170712A	Analysis Date:	7/12/2017 12:02:17 PM	Prep Date:	7/12/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	326	10.0	200.0	111.1	108	90	110				
Fluoride	197	4.00	200.0	0	98.7	90	110				
Sulfate	811	30.0	200.0	604.1	104	90	110				

Sample ID	1706346-01BMSD	Batch ID:	81368	TestNo:	E300	Units:	mg/L				
SampType:	MSD	Run ID:	IC3_170712A	Analysis Date:	7/12/2017 12:25:49 PM	Prep Date:	7/12/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	325	10.0	200.0	111.1	107	90	110	0.553	20		
Fluoride	197	4.00	200.0	0	98.6	90	110	0.112	20		
Sulfate	805	30.0	200.0	604.1	100	90	110	0.814	20		

Sample ID	1706346-03BMS	Batch ID:	81368	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC3_170712A	Analysis Date:	7/12/2017 12:46:28 PM	Prep Date:	7/12/2017				
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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_170712A

Sample ID	1706346-03BMS	Batch ID:	81368	TestNo:	E300	Units:	mg/L				
SampType:	MS	Run ID:	IC3_170712A	Analysis Date: 7/12/2017 12:46:28 PM			Prep Date:	7/12/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		343	10.0	200.0	130.3	106	90	110			
Fluoride		199	4.00	200.0	0	99.3	90	110			
Sulfate		1710	30.0	200.0	1449	131	90	110			S

Sample ID	1706346-03BMSD	Batch ID:	81368	TestNo:	E300	Units:	mg/L				
SampType:	MSD	Run ID:	IC3_170712A	Analysis Date:	7/12/2017 1:07:08 PM	Prep Date:	7/12/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		336	10.0	200.0	130.3	103	90	110	2.02	20	
Fluoride		195	4.00	200.0	0	97.5	90	110	1.84	20	
Sulfate		1650	30.0	200.0	1449	98.5	90	110	3.86	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: IC3_170712A

Sample ID	ICV-170712	Batch ID:	R93020	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC3_170712A	Analysis Date:	7/12/2017 10:00:05 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	25.9	1.00	25.00	0	103	90	110			
Fluoride	10.0	0.400	10.00	0	100	90	110			
Sulfate	75.9	3.00	75.00	0	101	90	110			

Sample ID	CCV1-170712	Batch ID:	R93020		TestNo:	E300		Units:	mg/L		
SampType:	CCV	Run ID:	IC3_170712A		Analysis Date:	7/12/2017 6:53:52 PM		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	3.92	0.400	4.000	0	98.0	90	110			
Sulfate	29.5	3.00	30.00	0	98.5	90	110			

Sample ID	CCV2-170712	Batch ID:	R93020		TestNo:	E300		Units:	mg/L		
SampType:	CCV	Run ID:	IC3_170712A		Analysis Date:	7/12/2017 11:21:58 PM		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	3.96	0.400	4.000	0	99.1	90	110			
Sulfate	29.8	3.00	30.00	0	99.2	90	110			

Sample ID	CCV3-170712	Batch ID:	R93020	TestNo:	E300	Units:	mg/L				
SampType:	CCV	Run ID:	IC3_170712A	Analysis Date:	7/13/2017 2:07:01 AM	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	3.97	0.400	4.000	0	99.3	90	110			
Sulfate	29.9	3.00	30.00	0	99.5	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170707B

The QC data in batch 81316 applies to the following samples: 1706346-01B, 1706346-02B, 1706346-03B

Sample ID	1706346-01B-DUP	Batch ID:	81316	TestNo:	M4500-H+ B	Units:	pH Units@19.8°C
SampType:	DUP	Run ID:	TITRATOR_170707B	Analysis Date:	7/7/2017 1:57:00 PM	Prep Date:	7/7/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.08	0	0	7.030				0.709	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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170707B

Sample ID	ICV-170707	Batch ID:	R92940	TestNo:	M4500-H+ B	Units:	pH Units@21.1°C			
SampType:	ICV	Run ID:	TITRATOR_170707B	Analysis Date:	7/7/2017 1:52:00 PM	Prep Date:	7/7/2017			
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	CCV-170707	Batch ID:	R92940	TestNo:	M4500-H+ B	Units:	pH Units@21.2°C			
SampType:	CCV	Run ID:	TITRATOR_170707B	Analysis Date:	7/7/2017 2:05:00 PM	Prep Date:	7/7/2017			
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			

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: 1706346
Project: Beckville Mine

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170707B

The QC data in batch 81315 applies to the following samples: 1706346-01B, 1706346-02B, 1706346-03B

Sample ID	MB-81315	Batch ID:	81315	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_170707B	Analysis Date:	7/10/2017 8:50:00 AM	Prep Date:	7/7/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-81315	Batch ID:	81315	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_170707B	Analysis Date:	7/10/2017 8:50:00 AM	Prep Date:	7/7/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 733 10.0 745.6 0 98.3 90 113

Sample ID	1706346-01B-DUP	Batch ID:	81315	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170707B	Analysis Date:	7/10/2017 8:50:00 AM	Prep Date:	7/7/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 1650 50.0 0 1695 2.99 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: 20170619

This report contains the analytical results for the 3 sample(s) received under chain of custody by ESC Lab Sciences on 7/5/2017 4:18:40 PM. These samples are associated with your 1706346 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.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

Observations / Nonconformances

L920390



Client : DHL Analytical, Inc.
 Client Project : 1706346
 Lab Number : 20170619
 Date Reported : 07/26/17
 Date Received : 07/05/17
 Page Number : 2 of 3

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst

Lab ID : 20170619-01
Client ID : BMW-26
Date Sampled : 6/29/2017 1:45:00 AM
Matrix : NPW

Radiochemical Analyses

Combined Radium	0.401 +/- 0.788	0.533	pCi/l				
Radium-226 SM 7500 Ra B M*	0.198 +/- 0.111	0.099	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	0.203 +/- 0.677	0.434	pCi/l		07/17/17	07/24/17	JR

Lab ID : 20170619-02
Client ID : BMW-27
Date Sampled : 6/29/2017 2:50:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium	0.607 +/- 0.759	0.592	pCi/l				
Radium-226 SM 7500 Ra B M*	0.303 +/- 0.131	0.110	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	0.304 +/- 0.628	0.482	pCi/l		07/17/17	07/24/17	JR

Lab ID : 20170619-03
Client ID : BMW-28
Date Sampled : 6/29/2017 12:20:00 PM
Matrix : NPW

Radiochemical Analyses

Combined Radium	0.489 +/- 2.47	1.53	pCi/l				
Radium-226 SM 7500 Ra B M*	0.489 +/- 0.160	0.090	pCi/l		07/14/17	07/19/17	SD
Radium-228 EPA 904*	-1.09 +/- 2.31	1.44	pCi/l		07/17/17	07/24/17	JR

Client : DHL Analytical, Inc.
 Client Project : 1706346
 Lab Number : 20170619
 Date Reported : 07/26/17
 Date Received : 07/05/17
 Page Number : 3 of 3

QC Report

Parameter	Blank	LCS %REC	LCSD %REC	RPD	DUP RPD	RER, NAD or DER	MS %REC	MSD %REC	RPD	Batch ID
Radium-226	0.006	112.0			NC	0.145	118.0	111.0	5.8	R1255
Radium-228	-0.796	94.7			NC	0.416	91.6	79.1	14.3	R3982

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: 1706346

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Subcontractor:

ESC Laboratory

311 North Aspen

Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515

FAX:

Acct #: DHLRRTX

30-Jun-17

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E903.1	E904.0				
BMW-26	Aqueous	-01C	06/29/17 01:40 PM	1LHDPEHNO3		1				
BMW-26	Aqueous	-01D	06/29/17 01:40 PM	1LHDPEHNO3	1					
BMW-27	Aqueous	-02C	06/29/17 02:50 PM	1LHDPEHNO3		1				
BMW-27	Aqueous	-02D	06/29/17 02:50 PM	1LHDPEHNO3	1					
BMW-28	Aqueous	-03C	06/29/17 12:20 PM	1LHDPEHNO3		1				
BMW-28	Aqueous	-03D	06/29/17 12:20 PM	1LHDPEHNO3	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

Relinquished by: 	Date/Time: 6/30/17 17:30	Received by: 	Date/Time: 6/30/17 17:30
Relinquished by: _____	_____	Received by: 	7/5/17 16:18

20170619

SAMPLE LOGIN

Date Received: 7/5/2017 4:18:40

Lab Number: 20170619

Due: 8/2/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170619-01 B	BMW-26	NPW	06/29/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170619-01 A	BMW-26	NPW	06/29/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170619-02 B	BMW-27	NPW	06/29/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170619-02 A	BMW-27	NPW	06/29/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						
20170619-03 B	BMW-28	NPW	06/29/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
20170619-03 A	BMW-28	NPW	06/29/17	Plastic	1 L	HNO3, pH < 2	☒	Yes	Yes
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						

CONTAINER INSPECTION

Coolers 1 Custody Seals Broken ☒ Temperature: 16°C Ice Radiation Survey: <300 cpm

SAMPLE INSPECTION

Sample Seal Broken ☒ Chain of Custody Record ☒ Labels in Tact ☒ Radiation Survey Complete ☒

Anomalies Sample -01 has a time of 1345 on bottles but 1340 on CoC - Correct time 1:45 confirmed by customer email 7/7/17

Inspected By: [Signature] DATE 7/5/17

QA or Designee Review: Raymond Thomas DATE 07/05/17

Sample Custodian Review: [Signature] DATE 7/5/17

Project Notes:



August 30, 2017

Will Vienne
Pastor, Behling & Wheeler
2201 Double Creek Dr #4004
Round Rock, Texas 78664
TEL: (512) 671-3434
FAX (512) 671-3446
RE: A-1 Landfill (Luminant)

Order No.: 1708050

Dear Will Vienne:

DHL Analytical, Inc. received 1 sample(s) on 8/3/2017 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,

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: T104704211-17-19



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ORIGIN ID:TXKA (903) 794-0625
ALEX GONZALES
PASTOR BEHLING & WHEELER, LLC
5415 PLAZA DRIVE

TEXARKANA, TX 75503
UNITED STATES US

SHIP DATE: 02AUG17
ACTWGT: 15.00 LB
CAD: 2026420/NET3920
DIMS: 14x12x12 IN

BILL SENDER

TO RECEIVING DEPARTMENT
DHL ANALYTICAL
2300 DOUBLE CREEK DRIVE

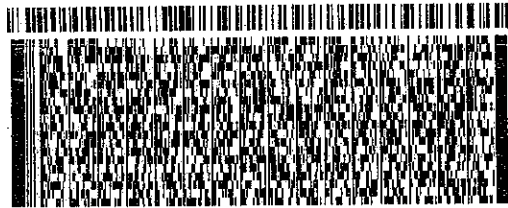
ROUND ROCK TX 78664

(512) 398-8222

REF: 2240A

INV
PO-

DEPT



FedEx
Express



4173310023814

THU - 03 AUG 3:00P

STANDARD OVERNIGHT

TRK#
0201

7797 9222 0228

XH BSMA

78664

TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 8/3/2017

Work Order Number 1708050

Received by EL

Checklist completed by: [Signature] 8/3/2017
Signature Date

Reviewed by: [Initials] 8/3/2017
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 ☐ 0.4 °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 EL
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: A-1 Landfill (Luminant)
Lab Order: 1708050

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 sample was received and log-in performed on 8/3/17. A total of 1 sample was received. The sample arrived in good condition and was properly packaged.

METALS ANALYSIS

For Metals analysis the matrix spike, matrix spike duplicate and PDS had low responses for the internal standard Bismuth. The associated analyte (Lead) was within control limits for these QC samples. No further corrective actions were taken.

For Metals analysis performed on 8/8/17 and 8/9/17 the matrix spike and matrix spike duplicate recoveries were out of control limits for a total of four analytes. 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.

DHL Analytical, Inc.

Date: 30-Aug-17

CLIENT: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)
Lab Order: 1708050

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1708050-01	BMW-28		08/01/17 12:40 PM	8/3/2017

LUMINANT

Lab Order: 1708050
Client: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1708050-01A	BMW-28	08/01/17 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/07/17 08:56 AM	81807
	BMW-28	08/01/17 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/07/17 08:56 AM	81807
	BMW-28	08/01/17 12:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	08/07/17 08:56 AM	81807
	BMW-28	08/01/17 12:40 PM	Aqueous	SW7470A	Mercury Aq Prep, Total	08/04/17 01:48 PM	81795
1708050-01D	BMW-28	08/01/17 12:40 PM	Aqueous	E300	Anion Preparation	08/15/17 09:00 AM	81971
	BMW-28	08/01/17 12:40 PM	Aqueous	E300	Anion Preparation	08/15/17 09:00 AM	81971
	BMW-28	08/01/17 12:40 PM	Aqueous	E300	Anion Preparation	08/15/17 09:00 AM	81971
	BMW-28	08/01/17 12:40 PM	Aqueous	M4500-H+ B	pH Preparation	08/04/17 08:50 AM	81786
	BMW-28	08/01/17 12:40 PM	Aqueous	M2540C	TDS Preparation	08/07/17 01:19 PM	81830

Lab Order: 1708050
Client: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1708050-01A	BMW-28	Aqueous	SW7470A	Mercury Total: Aqueous	81795	1	08/07/17 10:54 AM	CETAC2_HG_170807 A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81807	5	08/09/17 01:40 PM	ICP-MS4_170809C
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81807	50	08/09/17 01:21 PM	ICP-MS4_170809C
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	81807	1	08/08/17 02:43 PM	ICP-MS4_170808B
1708050-01D	BMW-28	Aqueous	E300	Anions by IC method - Water	81971	1	08/15/17 02:49 PM	IC4_170815A
	BMW-28	Aqueous	E300	Anions by IC method - Water	81971	10	08/15/17 02:37 PM	IC4_170815A
	BMW-28	Aqueous	E300	Anions by IC method - Water	81971	100	08/15/17 02:25 PM	IC4_170815A
	BMW-28	Aqueous	M4500-H+ B	pH	81786	1	08/04/17 10:56 AM	TITRATOR_170804A
	BMW-28	Aqueous	M2540C	Total Dissolved Solids	81830	1	08/08/17 08:15 AM	WC_170807C

DHL Analytical, Inc.

Date: 30-Aug-17

CLIENT: Pastor, Behling & Wheeler
Project: A-1 Landfill (Luminant)
Project No: 2240
Lab Order: 1708050

Client Sample ID: BMW-28
Lab ID: 1708050-01
Collection Date: 08/01/17 12:40 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: SP			
Antimony	<0.000800	0.000800	0.00250		mg/L	1	08/08/17 02:43 PM
Arsenic	0.00570	0.00200	0.00500		mg/L	1	08/08/17 02:43 PM
Barium	0.0524	0.00300	0.0100		mg/L	1	08/08/17 02:43 PM
Beryllium	<0.000300	0.000300	0.00100		mg/L	1	08/08/17 02:43 PM
Boron	1.17	0.0500	0.150		mg/L	5	08/09/17 01:40 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	08/08/17 02:43 PM
Calcium	260	5.00	15.0		mg/L	50	08/09/17 01:21 PM
Chromium	<0.00200	0.00200	0.00500		mg/L	1	08/08/17 02:43 PM
Cobalt	0.0115	0.00300	0.00500		mg/L	1	08/08/17 02:43 PM
Lead	<0.000300	0.000300	0.00100		mg/L	1	08/08/17 02:43 PM
Lithium	0.114	0.0250	0.0500		mg/L	5	08/09/17 01:40 PM
Molybdenum	0.00707	0.00200	0.00500		mg/L	1	08/08/17 02:43 PM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	08/08/17 02:43 PM
Thallium	<0.000500	0.000500	0.00150		mg/L	1	08/08/17 02:43 PM
MERCURY TOTAL: AQUEOUS		SW7470A		Analyst: AH			
Mercury	<0.0000800	0.0000800	0.000200		mg/L	1	08/07/17 10:54 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: JL			
Chloride	132	3.00	10.0		mg/L	10	08/15/17 02:37 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	08/15/17 02:49 PM
Sulfate	1460	100	300		mg/L	100	08/15/17 02:25 PM
PH		M4500-H+ B		Analyst: BTJ			
pH	7.02	0	0		pH Units@16.6°C	1	08/04/17 10:56 AM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: BTJ			
Total Dissolved Solids (Residue, Filterable)	2780	50.0	50.0		mg/L	1	08/08/17 08:15 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: 1708050

Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170807A

The QC data in batch 81795 applies to the following samples: 1708050-01A

Sample ID	MB-81795	Batch ID:	81795	TestNo:	SW7470A	Units:	mg/L			
SampType:	MBLK	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 9:53:41 AM	Prep Date:	8/4/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury <0.0000800 0.000200

Sample ID	LCS-81795	Batch ID:	81795	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCS	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 9:58:13 AM	Prep Date:	8/4/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00212 0.000200 0.00200 0 106 85 115

Sample ID	LCSD-81795	Batch ID:	81795	TestNo:	SW7470A	Units:	mg/L			
SampType:	LCSD	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 10:00:29 AM	Prep Date:	8/4/2017			
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 8.35 15

Sample ID	1707273-08A SD	Batch ID:	81795	TestNo:	SW7470A	Units:	mg/L			
SampType:	SD	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 10:20:52 AM	Prep Date:	8/4/2017			
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	1707273-08A PDS	Batch ID:	81795	TestNo:	SW7470A	Units:	mg/L			
SampType:	PDS	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 10:23:08 AM	Prep Date:	8/4/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00233 0.000200 0.00250 0 93.2 85 115

Sample ID	1707273-08A MS	Batch ID:	81795	TestNo:	SW7470A	Units:	mg/L			
SampType:	MS	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 10:25:24 AM	Prep Date:	8/4/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00188 0.000200 0.00200 0 94.0 80 120

Sample ID	1707273-08A MSD	Batch ID:	81795	TestNo:	SW7470A	Units:	mg/L			
SampType:	MSD	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 10:27:40 AM	Prep Date:	8/4/2017			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual

Mercury 0.00186 0.000200 0.00200 0 93.0 80 120 1.07 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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: CETAC2_HG_170807A

Sample ID	ICV-170807	Batch ID:	R93507		TestNo:	SW7470A		Units:	mg/L		
SampType:	ICV	Run ID:	CETAC2_HG_170807A		Analysis Date:	8/7/2017 9:49:07 AM		Prep Date:			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury		0.00394	0.000200	0.00400	0	98.5	90	110			

Sample ID	CCV1-170807	Batch ID:	R93507	TestNo:	SW7470A	Units:	mg/L			
SampType:	CCV	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 10:34:30 AM	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			

Sample ID	CCV2-170807	Batch ID:	R93507	TestNo:	SW7470A	Units:	mg/L				
SampType:	CCV	Run ID:	CETAC2_HG_170807A	Analysis Date:	8/7/2017 10:57:18 AM	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			

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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170808B

The QC data in batch 81807 applies to the following samples: 1708050-01A

Sample ID MB-81807	Batch ID: 81807	TestNo: SW6020A	Units: mg/L
SampType: MBLK	Run ID: ICP-MS4_170808B	Analysis Date: 8/8/2017 1:52:00 PM	Prep Date: 8/7/2017

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								
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 LCS-81807	Batch ID: 81807	TestNo: SW6020A	Units: mg/L
SampType: LCS	Run ID: ICP-MS4_170808B	Analysis Date: 8/8/2017 1:54:00 PM	Prep Date: 8/7/2017

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	0.201	0.00500	0.200	0	101	80	120			
Barium	0.197	0.0100	0.200	0	98.5	80	120			
Beryllium	0.215	0.00100	0.200	0	108	80	120			
Cadmium	0.204	0.00100	0.200	0	102	80	120			
Chromium	0.208	0.00500	0.200	0	104	80	120			
Cobalt	0.204	0.00500	0.200	0	102	80	120			
Lead	0.198	0.00100	0.200	0	98.8	80	120			
Molybdenum	0.198	0.00500	0.200	0	98.9	80	120			
Selenium	0.207	0.00500	0.200	0	103	80	120			
Thallium	0.197	0.00150	0.200	0	98.4	80	120			

Sample ID LCSD-81807	Batch ID: 81807	TestNo: SW6020A	Units: mg/L
SampType: LCSD	Run ID: ICP-MS4_170808B	Analysis Date: 8/8/2017 1:56:00 PM	Prep Date: 8/7/2017

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.202	0.00250	0.200	0	101	80	120	0.977	15	
Arsenic	0.200	0.00500	0.200	0	99.9	80	120	0.821	15	
Barium	0.196	0.0100	0.200	0	97.9	80	120	0.532	15	
Beryllium	0.217	0.00100	0.200	0	108	80	120	0.773	15	
Cadmium	0.201	0.00100	0.200	0	100	80	120	1.60	15	
Chromium	0.206	0.00500	0.200	0	103	80	120	0.853	15	
Cobalt	0.202	0.00500	0.200	0	101	80	120	1.19	15	
Lead	0.195	0.00100	0.200	0	97.4	80	120	1.50	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170808B

Sample ID	LCSD-81807	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 1:56:00 PM	Prep Date:	8/7/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Molybdenum	0.194	0.00500	0.200	0	96.9	80	120	1.97	15	
Selenium	0.206	0.00500	0.200	0	103	80	120	0.396	15	
Thallium	0.194	0.00150	0.200	0	96.9	80	120	1.47	15	

Sample ID	1708021-07A SD	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 2:03:00 PM	Prep Date:	8/7/2017			
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	0.0423	0.0500	0	0.0412				2.71	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	0.00660				0	10	
Lead	0.00245	0.00500	0	0.00254				3.80	10	
Molybdenum	<0.0100	0.0250	0	0.00672				0	10	
Selenium	<0.0100	0.0250	0	0				0	10	
Thallium	<0.00250	0.00750	0	0				0	10	

Sample ID	1708021-07A PDS	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 2:22:00 PM	Prep Date:	8/7/2017			
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	0.219	0.00500	0.200	0	109	80	120			
Barium	0.252	0.0100	0.200	0.0412	105	80	120			
Beryllium	0.176	0.00100	0.200	0	87.9	80	120			
Cadmium	0.188	0.00100	0.200	0	93.9	80	120			
Chromium	0.211	0.00500	0.200	0	105	80	120			
Cobalt	0.216	0.00500	0.200	0.00660	105	80	120			
Lead	0.221	0.00100	0.200	0.00254	109	80	120			
Molybdenum	0.222	0.00500	0.200	0.00672	108	80	120			
Selenium	0.216	0.00500	0.200	0	108	80	120			
Thallium	0.219	0.00150	0.200	0	110	80	120			

Sample ID	1708021-07A MS	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 2:24:00 PM	Prep Date:	8/7/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	0.198	0.00250	0.200	0	99.1	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170808B

Sample ID	1708021-07A MS	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 2:24:00 PM	Prep Date:	8/7/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	0.206	0.00500	0.200	0	103	80	120			
Barium	0.239	0.0100	0.200	0.0412	99.1	80	120			
Beryllium	0.165	0.00100	0.200	0	82.7	80	120			
Cadmium	0.174	0.00100	0.200	0	86.9	80	120			
Chromium	0.189	0.00500	0.200	0	94.6	80	120			
Cobalt	0.198	0.00500	0.200	0.00660	95.7	80	120			
Lead	0.204	0.00100	0.200	0.00254	101	80	120			
Molybdenum	0.209	0.00500	0.200	0.00672	101	80	120			
Selenium	0.201	0.00500	0.200	0	101	80	120			
Thallium	0.204	0.00150	0.200	0	102	80	120			

Sample ID	1708021-07A MSD	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L				
SampType:	MSD	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 2:26:00 PM	Prep Date:	8/7/2017				
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	0.779	15	S
Arsenic		0.209	0.00500	0.200	0	104	80	120	1.08	15	
Barium		0.239	0.0100	0.200	0.0412	98.7	80	120	0.366	15	
Beryllium		0.156	0.00100	0.200	0	78.2	80	120	5.55	15	
Cadmium		0.174	0.00100	0.200	0	86.8	80	120	0.037	15	
Chromium		0.193	0.00500	0.200	0	96.4	80	120	1.85	15	
Cobalt		0.200	0.00500	0.200	0.00660	96.7	80	120	1.04	15	
Lead		0.207	0.00100	0.200	0.00254	102	80	120	1.31	15	
Molybdenum		0.210	0.00500	0.200	0.00672	102	80	120	0.326	15	
Selenium		0.203	0.00500	0.200	0	101	80	120	0.785	15	
Thallium		0.207	0.00150	0.200	0	104	80	120	1.74	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170808B

Sample ID	ICV-170808	Batch ID:	R93550	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 10:59:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.102	0.00250	0.100	0	102	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	0.103	0.00100	0.100	0	103	90	110			
Cadmium	0.101	0.00100	0.100	0	101	90	110			
Chromium	0.105	0.00500	0.100	0	105	90	110			
Cobalt	0.102	0.00500	0.100	0	102	90	110			
Lead	0.0988	0.00100	0.100	0	98.8	90	110			
Molybdenum	0.0988	0.00500	0.100	0	98.8	90	110			
Selenium	0.102	0.00500	0.100	0	102	90	110			
Thallium	0.0963	0.00150	0.100	0	96.3	90	110			

Sample ID	LCVL-170808	Batch ID:	R93550	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 11:04:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00225	0.00250	0.00200	0	113	70	130			
Arsenic	0.00557	0.00500	0.00500	0	111	70	130			
Barium	0.00540	0.0100	0.00500	0	108	70	130			
Beryllium	0.00105	0.00100	0.00100	0	105	70	130			
Cadmium	0.00107	0.00100	0.00100	0	107	70	130			
Chromium	0.00555	0.00500	0.00500	0	111	70	130			
Cobalt	0.00548	0.00500	0.00500	0	110	70	130			
Lead	0.00107	0.00100	0.00100	0	107	70	130			
Molybdenum	0.00552	0.00500	0.00500	0	110	70	130			
Selenium	0.00561	0.00500	0.00500	0	112	70	130			
Thallium	0.00104	0.00150	0.00100	0	104	70	130			

Sample ID	CCV3-170808			Batch ID:	R93550		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV			Run ID:	ICP-MS4_170808B		Analysis Date:	8/8/2017 12:52:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.196	0.00250	0.200	0	97.9	90	110			
Arsenic	0.200	0.00500	0.200	0	99.8	90	110			
Barium	0.196	0.0100	0.200	0	98.2	90	110			
Beryllium	0.215	0.00100	0.200	0	107	90	110			
Cadmium	0.201	0.00100	0.200	0	101	90	110			
Chromium	0.206	0.00500	0.200	0	103	90	110			
Cobalt	0.203	0.00500	0.200	0	102	90	110			
Lead	0.196	0.00100	0.200	0	97.9	90	110			
Molybdenum	0.198	0.00500	0.200	0	98.9	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170808B

Sample ID	CCV3-170808	Batch ID:	R93550	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 12:52:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Selenium	0.204	0.00500	0.200	0	102	90	110			
Thallium	0.194	0.00150	0.200	0	97.0	90	110			

Sample ID	LCVL3-170808	Batch ID:	R93550	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 1:01:00 PM	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	0.00530	0.00500	0.00500	0	106	70	130			
Barium	0.00524	0.0100	0.00500	0	105	70	130			
Beryllium	0.00105	0.00100	0.00100	0	105	70	130			
Cadmium	0.00112	0.00100	0.00100	0	112	70	130			
Chromium	0.00559	0.00500	0.00500	0	112	70	130			
Cobalt	0.00537	0.00500	0.00500	0	107	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Molybdenum	0.00513	0.00500	0.00500	0	103	70	130			
Selenium	0.00548	0.00500	0.00500	0	110	70	130			
Thallium	0.00101	0.00150	0.00100	0	101	70	130			

Sample ID	CCV4-170808	Batch ID:	R93550	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 2:28:00 PM	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	0.203	0.00500	0.200	0	101	90	110			
Barium	0.198	0.0100	0.200	0	98.8	90	110			
Beryllium	0.189	0.00100	0.200	0	94.5	90	110			
Cadmium	0.197	0.00100	0.200	0	98.3	90	110			
Chromium	0.204	0.00500	0.200	0	102	90	110			
Cobalt	0.199	0.00500	0.200	0	99.4	90	110			
Lead	0.195	0.00100	0.200	0	97.6	90	110			
Molybdenum	0.193	0.00500	0.200	0	96.5	90	110			
Selenium	0.205	0.00500	0.200	0	103	90	110			
Thallium	0.193	0.00150	0.200	0	96.7	90	110			

Sample ID	LCVL4-170808	Batch ID:	R93550	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 2:33:00 PM	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		0.00510	0.00500	0.00500	0	102	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170808B

Sample ID	LCVL4-170808	Batch ID:	R93550	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 2:33:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Barium	0.00518	0.0100	0.00500	0	104	70	130			
Beryllium	0.00107	0.00100	0.00100	0	107	70	130			
Cadmium	0.00110	0.00100	0.00100	0	110	70	130			
Chromium	0.00541	0.00500	0.00500	0	108	70	130			
Cobalt	0.00518	0.00500	0.00500	0	104	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Molybdenum	0.00511	0.00500	0.00500	0	102	70	130			
Selenium	0.00585	0.00500	0.00500	0	117	70	130			
Thallium	0.00102	0.00150	0.00100	0	102	70	130			

Sample ID	CCV5-170808			Batch ID:	R93550		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV			Run ID:	ICP-MS4_170808B		Analysis Date:	8/8/2017 3:01:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Antimony	0.205	0.00250	0.200	0	103	90	110			
Arsenic	0.208	0.00500	0.200	0	104	90	110			
Barium	0.209	0.0100	0.200	0	105	90	110			
Beryllium	0.188	0.00100	0.200	0	94.0	90	110			
Cadmium	0.203	0.00100	0.200	0	102	90	110			
Chromium	0.212	0.00500	0.200	0	106	90	110			
Cobalt	0.202	0.00500	0.200	0	101	90	110			
Lead	0.203	0.00100	0.200	0	102	90	110			
Molybdenum	0.199	0.00500	0.200	0	99.5	90	110			
Selenium	0.213	0.00500	0.200	0	107	90	110			
Thallium	0.201	0.00150	0.200	0	101	90	110			

Sample ID	LCVL5-170808	Batch ID:	R93550	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170808B	Analysis Date:	8/8/2017 3:10:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Antimony	0.00222	0.00250	0.00200	0	111	70	130			
Arsenic	0.00530	0.00500	0.00500	0	106	70	130			
Barium	0.00569	0.0100	0.00500	0	114	70	130			
Beryllium	0.000723	0.00100	0.00100	0	72.3	70	130			
Cadmium	0.00111	0.00100	0.00100	0	111	70	130			
Chromium	0.00563	0.00500	0.00500	0	113	70	130			
Cobalt	0.00526	0.00500	0.00500	0	105	70	130			
Lead	0.00103	0.00100	0.00100	0	103	70	130			
Molybdenum	0.00501	0.00500	0.00500	0	100	70	130			
Selenium	0.00577	0.00500	0.00500	0	115	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170809C

The QC data in batch 81807 applies to the following samples: 1708050-01A

Sample ID	MB-81807		Batch ID:	81807		TestNo:	SW6020A		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4_170809C		Analysis Date:	8/9/2017 12:24:00 PM		Prep Date:	8/7/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	<0.0100	0.0300								
Calcium	<0.100	0.300								
Lithium	<0.00500	0.0100								

Sample ID	LCS-81807			Batch ID:	81807		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCS			Run ID:	ICP-MS4_170809C		Analysis Date:	8/9/2017 12:26:00 PM		Prep Date:	8/7/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	0.219	0.0300	0.200	0	110	80	120			
Calcium	4.62	0.300	5.00	0	92.4	80	120			
Lithium	0.216	0.0100	0.200	0	108	80	120			

Sample ID	LCSD-81807			Batch ID:	81807		TestNo:	SW6020A		Units:	mg/L	
SampType:	LCSD			Run ID:	ICP-MS4_170809C		Analysis Date:	8/9/2017 12:28:00 PM		Prep Date:	8/7/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	0.210	0.0300	0.200	0	105	80	120	4.48	15	
Calcium	4.54	0.300	5.00	0	90.9	80	120	1.69	15	
Lithium	0.214	0.0100	0.200	0	107	80	120	0.844	15	

Sample ID	1708021-07A SD	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 12:38:00 PM	Prep Date:	8/7/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	<5.00	15.0	0	2.49				0	10	
Calcium	534	150	0	520				2.68	10	
Lithium	<2.50	5.00	0	0				0	10	

Sample ID	1708021-07A PDS			Batch ID:	81807			TestNo:	SW6020A			Units:	mg/L		
SampType:	PDS			Run ID:	ICP-MS4_170809C			Analysis Date:	8/9/2017 12:58:00 PM			Prep Date:	8/7/2017		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		

Boron	24.8	3.00	20.0	2.49	111	80	120			
Calcium	1020	30.0	500	520	101	80	120			
Lithium	23.9	1.00	20.0	0	119	80	120			

Sample ID	1708021-07A MS	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:00:00 PM	Prep Date:	8/7/2017			
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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170809C

Sample ID	1708021-07A MS	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:00:00 PM	Prep Date:	8/7/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	2.51	3.00	0.200	2.49	12.5	80	120			S
Calcium	509	30.0	5.00	520	-226	80	120			S
Lithium	0.524	1.00	0.200	0	262	80	120			S

Sample ID	1708021-07A MSD	Batch ID:	81807	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:02:00 PM	Prep Date:	8/7/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	2.75	3.00	0.200	2.49	132	80	120	9.11	15	S
Calcium	517	30.0	5.00	520	-54.7	80	120	1.67	15	S
Lithium	0.519	1.00	0.200	0	260	80	120	0.844	15	S

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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170809C

Sample ID	ICV-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L				
SampType:	ICV	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 9:52:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.104	0.0300	0.100	0	104	90	110			
Calcium		2.30	0.300	2.50	0	92.1	90	110			
Lithium		0.101	0.0100	0.100	0	101	90	110			

Sample ID	LCVL-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 9:57:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0209	0.0300	0.0200	0	104	70	130			
Calcium	0.106	0.300	0.100	0	106	70	130			
Lithium	0.0112	0.0100	0.0100	0	112	70	130			

Sample ID	CCV3-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 12:14:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.211	0.0300	0.200	0	105	90	110			
Calcium	4.73	0.300	5.00	0	94.7	90	110			
Lithium	0.211	0.0100	0.200	0	105	90	110			

Sample ID	LCVL3-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 12:20:00 PM	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			
Calcium	0.107	0.300	0.100	0	107	70	130			
Lithium	0.0112	0.0100	0.0100	0	112	70	130			

Sample ID	CCV4-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:04:00 PM	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	4.73	0.300	5.00	0	94.7	90	110			
Lithium	0.213	0.0100	0.200	0	106	90	110			

Sample ID	LCVL4-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:09:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0220	0.0300	0.0200	0	110	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170809C

Sample ID	LCVL4-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:09:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	0.104	0.300	0.100	0	104	70	130			
Lithium	0.0112	0.0100	0.0100	0	112	70	130			

Sample ID	CCV5-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:31:00 PM	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	4.74	0.300	5.00	0	94.7	90	110			
Lithium	0.208	0.0100	0.200	0	104	90	110			

Sample ID	LCVL5-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:36:00 PM	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			
Calcium	0.0997	0.300	0.100	0	99.7	70	130			
Lithium	0.0118	0.0100	0.0100	0	118	70	130			

Sample ID	CCV6-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:48:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.219	0.0300	0.200	0	110	90	110			
Lithium	0.212	0.0100	0.200	0	106	90	110			

Sample ID	LCVL6-170809	Batch ID:	R93568	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCVL	Run ID:	ICP-MS4_170809C	Analysis Date:	8/9/2017 1:54:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0249	0.0300	0.0200	0	125	70	130			
Lithium	0.0107	0.0100	0.0100	0	107	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_170815A

The QC data in batch 81971 applies to the following samples: 1708050-01D

Sample ID	MB-81971		Batch ID:	81971		TestNo:	E300		Units:	mg/L	
SampType:	MBLK		Run ID:	IC4_170815A		Analysis Date:	8/15/2017 10:16:39 AM		Prep Date:	8/15/2017	
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	LCS-81971		Batch ID:	81971		TestNo:	E300		Units:	mg/L	
SampType:	LCS		Run ID:	IC4_170815A		Analysis Date:	8/15/2017 10:28:39 AM		Prep Date:	8/15/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.32	1.00	10.00	0	93.2	90	110			
Fluoride	3.72	0.400	4.000	0	93.0	90	110			
Sulfate	28.3	3.00	30.00	0	94.3	90	110			

Sample ID	LCSD-81971		Batch ID:	81971		TestNo:	E300		Units:	mg/L	
SampType:	LCSD		Run ID:	IC4_170815A		Analysis Date:	8/15/2017 10:40:39 AM		Prep Date:	8/15/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.34	1.00	10.00	0	93.4	90	110	0.124	20	
Fluoride	3.74	0.400	4.000	0	93.6	90	110	0.589	20	
Sulfate	28.2	3.00	30.00	0	94.1	90	110	0.211	20	

Sample ID	1708120-07CMS	Batch ID:	81971	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC4_170815A	Analysis Date:	8/15/2017 11:25:28 AM	Prep Date:	8/15/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2120	100	2000	115.3	100	90	110			
Fluoride	1990	40.0	2000	0	99.5	90	110			
Sulfate	1930	300	2000	0	96.7	90	110			

Sample ID	1708120-07CMSD		Batch ID:	81971		TestNo:	E300		Units:	mg/L	
SampType:	MSD		Run ID:	IC4_170815A		Analysis Date:	8/15/2017 11:37:28 AM		Prep Date:	8/15/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2120	100	2000	115.3	100	90	110	0.345	20	
Fluoride	2000	40.0	2000	0	100	90	110	0.428	20	
Sulfate	1950	300	2000	0	97.5	90	110	0.736	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_170815A

Sample ID	ICV-170815	Batch ID:	R93690		TestNo:	E300		Units:	mg/L		
SampType:	ICV	Run ID:	IC4_170815A		Analysis Date:	8/15/2017 9:52:39 AM		Prep Date:			
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		24.3	1.00	25.00	0	97.3	90	110			
Fluoride		9.66	0.400	10.00	0	96.6	90	110			
Sulfate		73.2	3.00	75.00	0	97.6	90	110			

Sample ID	CCV1-170815	Batch ID:	R93690	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_170815A	Analysis Date:	8/15/2017 2:01:28 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.50	1.00	10.00	0	95.0	90	110			
Fluoride	3.84	0.400	4.000	0	95.9	90	110			
Sulfate	28.9	3.00	30.00	0	96.4	90	110			

Sample ID	CCV2-170815	Batch ID:	R93690	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_170815A	Analysis Date:	8/15/2017 3:49:28 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.60	1.00	10.00	0	96.0	90	110			
Fluoride	3.84	0.400	4.000	0	95.9	90	110			
Sulfate	29.3	3.00	30.00	0	97.8	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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170804A

The QC data in batch 81786 applies to the following samples: 1708050-01D

Sample ID	1708050-01D-DUP	Batch ID:	81786	TestNo:	M4500-H+ B	Units:	pH Units@16.6°C
SampType:	DUP	Run ID:	TITRATOR_170804A	Analysis Date:	8/4/2017 10:58:00 AM	Prep Date:	8/4/2017
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit HighLimit %RPD RPDLimit Qual
pH		6.99	0	0	7.020		0.428 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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_170804A

Sample ID	ICV-170804		Batch ID:	R93511		TestNo:	M4500-H+ B		Units:	pH Units@20.8°C	
SampType:	ICV		Run ID:	TITRATOR_170804A		Analysis Date:	8/4/2017 9:58:00 AM		Prep Date:	8/4/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

pH	9.95	0	10.00	0	99.5	99	101			

Sample ID	CCV1-170804			Batch ID:	R93511		TestNo:	M4500-H+ B		Units:	pH Units@20.6°C	
SampType:	CCV			Run ID:	TITRATOR_170804A		Analysis Date:	8/4/2017 10:59:00 AM		Prep Date:	8/4/2017	
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	CCV1-170804			Batch ID:	R93511		TestNo:	M4500-H+ B		Units:	pH Units@21.3°C	
SampType:	CCV			Run ID:	TITRATOR_170804A		Analysis Date:	8/4/2017 2:31:00 PM		Prep Date:	8/4/2017	
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			

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: 1708050
Project: A-1 Landfill (Luminant)

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170807C

The QC data in batch 81830 applies to the following samples: 1708050-01D

Sample ID	MB-81830	Batch ID:	81830	TestNo:	M2540C	Units:	mg/L				
SampType:	MBLK	Run ID:	WC_170807C	Analysis Date:	8/8/2017 8:15:00 AM	Prep Date:	8/7/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-81830	Batch ID:	81830	TestNo:	M2540C	Units:	mg/L				
SampType:	LCS	Run ID:	WC_170807C	Analysis Date:	8/8/2017 8:15:00 AM	Prep Date:	8/7/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 772 10.0 745.6 0 104 90 113

Sample ID	1708046-02B-DUP	Batch ID:	81830	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170807C	Analysis Date:	8/8/2017 8:15:00 AM	Prep Date:	8/7/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 2960 50.0 0 2990 1.18 5

Sample ID	1708063-02B-DUP	Batch ID:	81830	TestNo:	M2540C	Units:	mg/L				
SampType:	DUP	Run ID:	WC_170807C	Analysis Date:	8/8/2017 8:15:00 AM	Prep Date:	8/7/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 47900 1000 0 48300 0.832 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: 20170734

This report contains the analytical results for the 1 sample(s) received under chain of custody by ESC Lab Sciences on 8/7/2017 11:47:14 AM. These samples are associated with your 1708050 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.

DL for Radiochemistry = MDA

DL for Metals and Wet Chemistry = MDL

DL for Drinking Water = SDWA

Observations / Nonconformances

L927427



Client : DHL Analytical, Inc.
Client Project : 1708050
Lab Number : 20170734
Date Reported : 08/29/17
Date Received : 08/07/17
Page Number : 2 of 2

Analytical Report

Method	Result	DL	Units	Qual	Prep Date	Analysis Date	Analyst
Lab ID : 20170734-01							
Client ID : BMW-28							
Date Sampled : 8/1/2017 12:40:00 PM							
Matrix : NPW							

Radiochemical Analyses

Combined Radium		2.97 +/- 0.896	0.961	pCi/l			
Radium-226	SM 7500 Ra B M*	0.536 +/- 0.309	0.306	pCi/l	08/16/17	08/18/17	RE
Radium-228	EPA 904*	2.43 +/- 0.587	0.655	pCi/l	08/17/17	08/23/17	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	0.048	116.0			NC	1.140	104.0	112.0	6.9	R1268
Radium-228	0.323	95.6			NC	0.378	73.9	74.0	0.1	R3992

Lab Approval:

Ron Eidson
Director of Radiochemistry

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

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

TEL: (512) 388-8222

FAX: (512) 388-8229

Work Order: 1708050

Subcontractor:

ESC Laboratory
311 North Aspen
Broken Arrow, Oklahoma 74012

TEL: (918) 251-2515
FAX:
Acct #: DHLRRTX

03-Aug-17

Sample Id	Matrix	DHL#	Date Collected	Bottle Type	Requested Tests					
					E903.1	E904.0				
BMW-28	Aqueous	-01B	08/01/17 12:40 PM	1LHDPEHNO3		1				
BMW-28	Aqueous	-01C	08/01/17 12:40 PM	1LHDPEHNO3	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

Relinquished by: <u>Em</u>	Date/Time: <u>8/3/17 17:30</u>	Received by: <u>L SO</u>	Date/Time: <u>8/3/17 17:30</u>
Relinquished by: _____	_____	Received by: <u>[Signature]</u>	Date/Time: <u>8/7/17 11:47</u>

20170734 L927427

SAMPLE LOGIN

Date Received: 8/7/2017 11:47:14

Lab Number: 20170734

Due: 9/5/2017

Sample Number	Client Sample ID	Matrix	Date Sampled	Container Type	Container Size	Preservation	Preserved Upon Receipt	Custody Seal	Seal Intact
20170734-01 B	BMW-28	NPW	08/01/17	Plastic	1 L	HNO3, pH < 2	☒	No	No
20170734-01 A	BMW-28	NPW	08/01/17	Plastic	1 L	HNO3, pH < 2	☒	No	No
	Radium-226		SM 7500 Ra B M*						
	Radium-228		EPA 904*						

CONTAINER INSPECTION

Coolers 1 Custody Seals Broken ☒ Temperature: 16 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 8/7/17
 QA or Designee Review: [Signature] DATE 08/07/17
 Sample Custodian Review: [Signature] DATE 8/7/17

Project Notes:

□

□

□

Appendix B

Laboratory Analytical Reports – Detection Monitoring Data

□

□



October 05, 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 - A - 1 - Landfill

Order No.: 1709268

Dear Will Vienne:

DHL Analytical, Inc. received 11 sample(s) on 9/27/2017 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,

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: T104704211-17-19



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LUMINANT

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

DATE: 9-26-17 PAGE 1 OF 1
PO #: 5347-C **DHL WORK ORDER #:** 1709268
PROJECT LOCATION OR NAME: LUMINANT- A-1-LANDFILL
CLIENT PROJECT #: 5347-C **COLLECTOR:** J. BRAYTON

[illegible]

RELINQUISHED BY: (Signature)		DATE/TIME	RECEIVED BY: (Signature)	TURN AROUND TIME RUSH ☐ CALL FIRST 1 DAY ☐ CALL FIRST 2 DAY ☐ NORMAL ☒ OTHER ☐	LABORATORY USE ONLY: RECEIVING TEMP: 9.0 THERM #: 78 CUSTODY SEALS: ☐ BROKEN ☐ INTACT ☒ NOT USED CARRIER: ☐ LONE STAR ☒ FEDEX ☐ UPS ☐ OTHER ☐ COURIER DELIVERY ☐ HAND DELIVERED
RELINQUISHED BY: (Signature)		DATE/TIME	RECEIVED BY: (Signature)		
RELINQUISHED BY: (Signature)		DATE/TIME	RECEIVED BY: (Signature)		
☐ DHL DISPOSAL @ \$5.00 each ☐ Return		3			

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

ORIGIN ID:GGGA (512) 671-3434
J BRAYTON

2201 DOUBLE CREEK DR STE
STE 4004
ROUND ROCK, TX 78664
UNITED STATES US

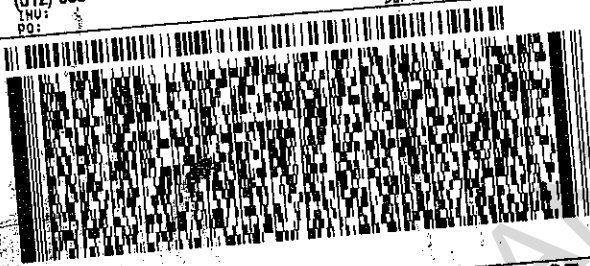
SHIP DATE: 26SEP17
ACTWGT: 57.50 LB
CAD: 0069941677SSFE1822
DIMS: 26x15x14 IN
BILL THIRD PARTY

Part # 156297-435 R179 EXP 08/18

TO DHL ANALYTICAL
DHL ANALYTICAL
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664

(512) 388-8222
REF: DEPT:



FedEx
Express



117211700180101

TRK# 7878 6747 3640
0201

WED - 27 SEP 10:30A
PRIORITY OVERNIGHT

XH BSMA

78664
TX-US AUS



Sample Receipt Checklist

Client Name Pastor, Behling & Wheeler

Date Received: 9/27/2017

Work Order Number 1709268

Received by EL

Checklist completed by: [Signature] 9/27/2017
Signature Date

Reviewed by: [Signature] 9/27/2017
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 ☐ 4.0 °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 EL

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 - A - 1 - Landfill
Lab Order: 1709268

CASE NARRATIVE

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

Method SW6020A - Metals Analysis

Method E300 - Anions Analysis

Method M2540C - TDS Analysis

LOG IN

The samples were received and log-in performed on 9/27/17. A total of 11 samples were received. The samples arrived in good condition and were properly packaged.

METALS ANALYSIS

For Metals analysis performed on 9/29/17 the matrix spike and matrix spike duplicate recoveries were above control limits for 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 this analyte. No further corrective actions were taken.

For Metals analysis performed on 9/29/17 the PDS recovery was slightly below control limits for Boron. This is flagged accordingly. The serial dilution was within control limits for this analyte. No further corrective actions were taken.

For Metals analysis performed on 9/29/17 LCVL2-170929 was above control limits for Boron. This is flagged accordingly. The associated CCV2-170929 was within control limits for this analyte. No further corrective actions were taken.

ANIONS ANALYSIS

For Anions analysis performed on 10/2/17 (batch 82623) the matrix spike duplicate recovery (1709268-07 MSD) was out of control limits for all analytes. In addition, the matrix spike and matrix spike duplicate (batch 82623) (1709268-07 MS/MSD) had the RPD above control limits for Chloride. This was due to instrument malfunction. 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 - A - 1 - Landfill
Lab Order: 1709268

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1709268-01	BMW-27		09/25/17 12:05 PM	9/27/2017
1709268-02	BMW-26		09/25/17 12:55 PM	9/27/2017
1709268-03	BMW-11AR		09/25/17 01:45 PM	9/27/2017
1709268-04	BMW-19		09/25/17 02:40 PM	9/27/2017
1709268-05	BMW-18		09/25/17 03:35 PM	9/27/2017
1709268-06	BMW-28		09/25/17 04:20 PM	9/27/2017
1709268-07	BMW-24		09/26/17 08:45 AM	9/27/2017
1709268-08	BMW-23		09/26/17 09:45 AM	9/27/2017
1709268-09	BMW-22		09/26/17 10:45 AM	9/27/2017
1709268-10	BMW-21		09/26/17 11:25 AM	9/27/2017
1709268-11	BMW-20		09/26/17 12:15 PM	9/27/2017

Lab Order: 1709268
Client: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1709268-01A	BMW-27	09/25/17 12:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
	BMW-27	09/25/17 12:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-01B	BMW-27	09/25/17 12:05 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-27	09/25/17 12:05 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-27	09/25/17 12:05 PM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-02A	BMW-26	09/25/17 12:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
	BMW-26	09/25/17 12:55 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-02B	BMW-26	09/25/17 12:55 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-26	09/25/17 12:55 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-26	09/25/17 12:55 PM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-03A	BMW-11AR	09/25/17 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
	BMW-11AR	09/25/17 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-03B	BMW-11AR	09/25/17 01:45 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-11AR	09/25/17 01:45 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-11AR	09/25/17 01:45 PM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-04A	BMW-19	09/25/17 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
	BMW-19	09/25/17 02:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-04B	BMW-19	09/25/17 02:40 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-19	09/25/17 02:40 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-19	09/25/17 02:40 PM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-05A	BMW-18	09/25/17 03:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-05B	BMW-18	09/25/17 03:35 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-18	09/25/17 03:35 PM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-06A	BMW-28	09/25/17 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
	BMW-28	09/25/17 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-06B	BMW-28	09/25/17 04:20 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-28	09/25/17 04:20 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-28	09/25/17 04:20 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596

Lab Order: 1709268
Client: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1709268-06B	BMW-28	09/25/17 04:20 PM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-07A	BMW-24	09/26/17 08:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-07B	BMW-24	09/26/17 08:45 AM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-24	09/26/17 08:45 AM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-24	09/26/17 08:45 AM	Aqueous	E300	Anion Preparation	10/02/17 09:38 AM	82623
	BMW-24	09/26/17 08:45 AM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-08A	BMW-23	09/26/17 09:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-08B	BMW-23	09/26/17 09:45 AM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-23	09/26/17 09:45 AM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-23	09/26/17 09:45 AM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-09A	BMW-22	09/26/17 10:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-09B	BMW-22	09/26/17 10:45 AM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-22	09/26/17 10:45 AM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-22	09/26/17 10:45 AM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-10A	BMW-21	09/26/17 11:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-10B	BMW-21	09/26/17 11:25 AM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-21	09/26/17 11:25 AM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-21	09/26/17 11:25 AM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593
1709268-11A	BMW-20	09/26/17 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
	BMW-20	09/26/17 12:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	09/28/17 08:11 AM	82581
1709268-11B	BMW-20	09/26/17 12:15 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-20	09/26/17 12:15 PM	Aqueous	E300	Anion Preparation	09/29/17 09:10 AM	82596
	BMW-20	09/26/17 12:15 PM	Aqueous	M2540C	TDS Preparation	09/28/17 10:37 AM	82593

Lab Order: 1709268
Client: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1709268-01A	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	5	09/29/17 01:52 PM	ICP-MS4_170929A
	BMW-27	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	100	09/29/17 11:55 AM	ICP-MS4_170929A
1709268-01B	BMW-27	Aqueous	E300	Anions by IC method - Water	82596	10	09/29/17 03:28 PM	IC4_170929A
	BMW-27	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 06:52 PM	IC4_170929A
	BMW-27	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-02A	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	50	09/29/17 11:57 AM	ICP-MS4_170929A
	BMW-26	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	5	09/29/17 01:54 PM	ICP-MS4_170929A
1709268-02B	BMW-26	Aqueous	E300	Anions by IC method - Water	82596	10	09/29/17 03:40 PM	IC4_170929A
	BMW-26	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 07:04 PM	IC4_170929A
	BMW-26	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-03A	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	5	09/29/17 01:56 PM	ICP-MS4_170929A
	BMW-11AR	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	100	09/29/17 11:59 AM	ICP-MS4_170929A
1709268-03B	BMW-11AR	Aqueous	E300	Anions by IC method - Water	82596	10	09/29/17 03:52 PM	IC4_170929A
	BMW-11AR	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 06:04 PM	IC4_170929A
	BMW-11AR	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-04A	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	100	09/29/17 12:01 PM	ICP-MS4_170929A
	BMW-19	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	5	09/29/17 01:58 PM	ICP-MS4_170929A
1709268-04B	BMW-19	Aqueous	E300	Anions by IC method - Water	82596	100	09/29/17 11:58 AM	IC4_170929A
	BMW-19	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 06:16 PM	IC4_170929A
	BMW-19	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-05A	BMW-18	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	1	09/29/17 12:03 PM	ICP-MS4_170929A
1709268-05B	BMW-18	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 01:10 PM	IC4_170929A
	BMW-18	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-06A	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	50	09/29/17 02:00 PM	ICP-MS4_170929A
	BMW-28	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	10	09/29/17 12:05 PM	ICP-MS4_170929A
1709268-06B	BMW-28	Aqueous	E300	Anions by IC method - Water	82596	100	09/29/17 04:04 PM	IC4_170929A
	BMW-28	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 07:52 PM	IC4_170929A
	BMW-28	Aqueous	E300	Anions by IC method - Water	82596	10	09/29/17 05:04 PM	IC4_170929A

Lab Order: 1709268
Client: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1709268-06B	BMW-28	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-07A	BMW-24	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	10	09/29/17 12:06 PM	ICP-MS4_170929A
1709268-07B	BMW-24	Aqueous	E300	Anions by IC method - Water	82596	100	09/29/17 12:34 PM	IC4_170929A
	BMW-24	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 06:40 PM	IC4_170929A
	BMW-24	Aqueous	E300	Anions by IC method - Water	82623	10	10/02/17 06:11 PM	IC4_171002A
	BMW-24	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-08A	BMW-23	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	10	09/29/17 12:08 PM	ICP-MS4_170929A
1709268-08B	BMW-23	Aqueous	E300	Anions by IC method - Water	82596	10	09/29/17 04:16 PM	IC4_170929A
	BMW-23	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 07:16 PM	IC4_170929A
	BMW-23	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-09A	BMW-22	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	10	09/29/17 12:10 PM	ICP-MS4_170929A
1709268-09B	BMW-22	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 07:28 PM	IC4_170929A
	BMW-22	Aqueous	E300	Anions by IC method - Water	82596	10	09/29/17 04:28 PM	IC4_170929A
	BMW-22	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-10A	BMW-21	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	10	09/29/17 12:52 PM	ICP-MS4_170929A
1709268-10B	BMW-21	Aqueous	E300	Anions by IC method - Water	82596	10	09/29/17 04:40 PM	IC4_170929A
	BMW-21	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 07:40 PM	IC4_170929A
	BMW-21	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A
1709268-11A	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	10	09/29/17 12:54 PM	ICP-MS4_170929A
	BMW-20	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	82581	1	09/29/17 02:02 PM	ICP-MS4_170929A
1709268-11B	BMW-20	Aqueous	E300	Anions by IC method - Water	82596	10	09/29/17 04:52 PM	IC4_170929A
	BMW-20	Aqueous	E300	Anions by IC method - Water	82596	1	09/29/17 06:28 PM	IC4_170929A
	BMW-20	Aqueous	M2540C	Total Dissolved Solids	82593	1	09/29/17 09:50 AM	WC_170928A

DHL Analytical, Inc.

Date: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-27
Lab ID: 1709268-01
Collection Date: 09/25/17 12:05 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	0.336	0.0500	0.150		mg/L	5	09/29/17 01:52 PM
Calcium	128	10.0	30.0		mg/L	100	09/29/17 11:55 AM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	126	3.00	10.0		mg/L	10	09/29/17 03:28 PM
Fluoride	0.254	0.100	0.400	J	mg/L	1	09/29/17 06:52 PM
Sulfate	1160	10.0	30.0		mg/L	10	09/29/17 03:28 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	2110	50.0	50.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-26
Lab ID: 1709268-02
Collection Date: 09/25/17 12:55 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	0.514	0.0500	0.150		mg/L	5	09/29/17 01:54 PM
Calcium	71.0	5.00	15.0		mg/L	50	09/29/17 11:57 AM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	112	3.00	10.0		mg/L	10	09/29/17 03:40 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 07:04 PM
Sulfate	606	10.0	30.0		mg/L	10	09/29/17 03:40 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	1510	50.0	50.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-11AR
Lab ID: 1709268-03
Collection Date: 09/25/17 01:45 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A		Analyst: RO			
Boron	0.448	0.0500	0.150		mg/L	5	09/29/17 01:56 PM
Calcium	199	10.0	30.0		mg/L	100	09/29/17 11:59 AM
ANIONS BY IC METHOD - WATER		E300		Analyst: JL			
Chloride	15.2	0.300	1.00		mg/L	1	09/29/17 06:04 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 06:04 PM
Sulfate	561	10.0	30.0		mg/L	10	09/29/17 03:52 PM
TOTAL DISSOLVED SOLIDS		M2540C		Analyst: JW			
Total Dissolved Solids (Residue, Filterable)	1620	50.0	50.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-19
Lab ID: 1709268-04
Collection Date: 09/25/17 02:40 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	0.481	0.0500	0.150		mg/L	5	09/29/17 01:58 PM
Calcium	496	10.0	30.0		mg/L	100	09/29/17 12:01 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	6.11	0.300	1.00		mg/L	1	09/29/17 06:16 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 06:16 PM
Sulfate	2360	100	300		mg/L	100	09/29/17 11:58 AM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	3670	50.0	50.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-18
Lab ID: 1709268-05
Collection Date: 09/25/17 03:35 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	0.437	0.0100	0.0300		mg/L	1	09/29/17 12:03 PM
Calcium	6.49	0.100	0.300		mg/L	1	09/29/17 12:03 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	16.9	0.300	1.00		mg/L	1	09/29/17 01:10 PM
Fluoride	0.128	0.100	0.400	J	mg/L	1	09/29/17 01:10 PM
Sulfate	87.2	1.00	3.00		mg/L	1	09/29/17 01:10 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	476	10.0	10.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-28
Lab ID: 1709268-06
Collection Date: 09/25/17 04:20 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	1.35	0.100	0.300		mg/L	10	09/29/17 12:05 PM
Calcium	262	5.00	15.0		mg/L	50	09/29/17 02:00 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	130	3.00	10.0		mg/L	10	09/29/17 05:04 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 07:52 PM
Sulfate	1430	10.0	30.0		mg/L	10	09/29/17 05:04 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	3060	50.0	50.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-24
Lab ID: 1709268-07
Collection Date: 09/26/17 08:45 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	0.656	0.100	0.300		mg/L	10	09/29/17 12:06 PM
Calcium	66.8	1.00	3.00		mg/L	10	09/29/17 12:06 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	229	30.0	100		mg/L	100	09/29/17 12:34 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 06:40 PM
Sulfate	242	10.0	30.0		mg/L	10	10/02/17 06:11 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	940	10.0	10.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-23
Lab ID: 1709268-08
Collection Date: 09/26/17 09:45 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	1.46	0.100	0.300		mg/L	10	09/29/17 12:08 PM
Calcium	99.6	1.00	3.00		mg/L	10	09/29/17 12:08 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	223	3.00	10.0		mg/L	10	09/29/17 04:16 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 07:16 PM
Sulfate	482	10.0	30.0		mg/L	10	09/29/17 04:16 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	1550	50.0	50.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-22
Lab ID: 1709268-09
Collection Date: 09/26/17 10:45 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	3.53	0.100	0.300		mg/L	10	09/29/17 12:10 PM
Calcium	209	1.00	3.00		mg/L	10	09/29/17 12:10 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	270	3.00	10.0		mg/L	10	09/29/17 04:28 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 07:28 PM
Sulfate	860	10.0	30.0		mg/L	10	09/29/17 04:28 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	2250	50.0	50.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-21
Lab ID: 1709268-10
Collection Date: 09/26/17 11:25 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	1.02	0.100	0.300		mg/L	10	09/29/17 12:52 PM
Calcium	138	1.00	3.00		mg/L	10	09/29/17 12:52 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	364	3.00	10.0		mg/L	10	09/29/17 04:40 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 07:40 PM
Sulfate	417	10.0	30.0		mg/L	10	09/29/17 04:40 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	1850	50.0	50.0		mg/L	1	09/29/17 09:50 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: 05-Oct-17

CLIENT: Pastor, Behling & Wheeler
Project: Luminant - A - 1 - Landfill
Project No: 5347-C
Lab Order: 1709268

Client Sample ID: BMW-20
Lab ID: 1709268-11
Collection Date: 09/26/17 12:15 PM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW6020A					Analyst: RO
Boron	0.0973	0.0100	0.0300		mg/L	1	09/29/17 02:02 PM
Calcium	116	1.00	3.00		mg/L	10	09/29/17 12:54 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: JL
Chloride	33.5	0.300	1.00		mg/L	1	09/29/17 06:28 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	09/29/17 06:28 PM
Sulfate	472	10.0	30.0		mg/L	10	09/29/17 04:52 PM
TOTAL DISSOLVED SOLIDS		M2540C					Analyst: JW
Total Dissolved Solids (Residue, Filterable)	986	10.0	10.0		mg/L	1	09/29/17 09:50 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		

CLIENT: Pastor, Behling & Wheeler

Work Order: 1709268

Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170929A

The QC data in batch 82581 applies to the following samples: 1709268-01A, 1709268-02A, 1709268-03A, 1709268-04A, 1709268-05A, 1709268-06A, 1709268-07A, 1709268-08A, 1709268-09A, 1709268-10A, 1709268-11A

Sample ID	MB-82581	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	MBLK	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 11:41:00 AM	Prep Date:	9/28/2017			
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	LCS-82581	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCS	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 11:43:00 AM	Prep Date:	9/28/2017			
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 5.20 0.300 5.00 0 104 80 120

Sample ID	LCSD-82581	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	LCSD	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 11:45:00 AM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.215 0.0300 0.200 0 107 80 120 2.69 15

Calcium 5.25 0.300 5.00 0 105 80 120 1.09 15

Sample ID	1709266-02A SD	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 11:53:00 AM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.727 0.150 0 0.687 5.63 10

Sample ID	1709266-02A PDS	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 12:12:00 PM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.834 0.0300 0.200 0.687 73.4 80 120 S

Sample ID	1709266-02A MS	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	MS	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 12:16:00 PM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron 0.863 0.0300 0.200 0.687 87.9 80 120

Calcium 238 0.300 5.00 232 124 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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170929A

Sample ID	1709266-02A MSD	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	MSD	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 12:20:00 PM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.889	0.0300	0.200	0.687	101	80	120	2.94	15	
Calcium	243	0.300	5.00	232	220	80	120	2.01	15	S

Sample ID	1709266-02A SD	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	SD	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 1:50:00 PM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	241	75.0	0	234				2.67	10	

Sample ID	1709266-02A PDS	Batch ID:	82581	TestNo:	SW6020A	Units:	mg/L			
SampType:	PDS	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 2:09:00 PM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Calcium	501	15.0	250	234	107	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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170929A

Sample ID	ICV-170929	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L			
SampType:	ICV	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 10:28:00 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.105	0.0300	0.100	0	105	90	110			
Calcium	2.49	0.300	2.50	0	99.5	90	110			

Sample ID	LCVL-170929	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 10:36:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0236	0.0300	0.0200	0	118	70	130			
Calcium		0.0944	0.300	0.100	0	94.4	70	130			

Sample ID	CCV2-170929	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 11:28:00 AM	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			
Calcium	4.95	0.300	5.00	0	99.0	90	110			

Sample ID	LCVL2-170929	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 11:32:00 AM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron		0.0301	0.0300	0.0200	0	151	70	130			S
Calcium		0.104	0.300	0.100	0	104	70	130			

Sample ID	CCV3-170929	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 12:26:00 PM	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			
Calcium	4.84	0.300	5.00	0	96.7	90	110			

Sample ID	LCVL3-170929	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 12:45:00 PM	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		0.0945	0.300	0.100	0	94.5	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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_170929A

Sample ID	CCV4-170920	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L			
SampType:	CCV	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 1:13:00 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.207	0.0300	0.200	0	104	90	110			
Calcium	4.94	0.300	5.00	0	98.8	90	110			

Sample ID	LCVL4-170920	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 1:34:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0230	0.0300	0.0200	0	115	70	130			
Calcium	0.0930	0.300	0.100	0	93.0	70	130			

Sample ID	CCV5-170929			Batch ID:	R94460		TestNo:	SW6020A		Units:	mg/L	
SampType:	CCV			Run ID:	ICP-MS4_170929A		Analysis Date:	9/29/2017 2:11:00 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Boron	0.206	0.0300	0.200	0	103	90	110			
Calcium	4.90	0.300	5.00	0	98.1	90	110			

Sample ID	LCVL5-170929	Batch ID:	R94460	TestNo:	SW6020A	Units:	mg/L				
SampType:	LCVL	Run ID:	ICP-MS4_170929A	Analysis Date:	9/29/2017 2:15:00 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Boron	0.0242	0.0300	0.0200	0	121	70	130			
Calcium	0.0955	0.300	0.100	0	95.5	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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_170929A

The QC data in batch 82596 applies to the following samples: 1709268-01B, 1709268-02B, 1709268-03B, 1709268-04B, 1709268-05B, 1709268-06B, 1709268-07B, 1709268-08B, 1709268-09B, 1709268-10B, 1709268-11B

Sample ID	MB-82596	Batch ID:	82596	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 10:44:27 AM	Prep Date:	9/29/2017			
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	LCS-82596	Batch ID:	82596	TestNo:	E300	Units:	mg/L			
SampType:	LCS	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 10:56:27 AM	Prep Date:	9/29/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.46	1.00	10.00	0	94.6	90	110			
Fluoride	3.85	0.400	4.000	0	96.3	90	110			
Sulfate	28.5	3.00	30.00	0	95.0	90	110			

Sample ID	LCSD-82596	Batch ID:	82596	TestNo:	E300	Units:	mg/L			
SampType:	LCSD	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 11:08:27 AM	Prep Date:	9/29/2017			
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	1.98	20	
Fluoride	3.91	0.400	4.000	0	97.8	90	110	1.52	20	
Sulfate	29.0	3.00	30.00	0	96.8	90	110	1.89	20	

Sample ID	1709268-04BMS	Batch ID:	82596	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 12:10:02 PM	Prep Date:	9/29/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2050	100	2000	0	103	90	110			
Fluoride	2000	40.0	2000	0	100	90	110			
Sulfate	4330	300	2000	2365	98.2	90	110			

Sample ID	1709268-04BMSD	Batch ID:	82596	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 12:22:02 PM	Prep Date:	9/29/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	2060	100	2000	0	103	90	110	0.260	20	
Fluoride	2010	40.0	2000	0	100	90	110	0.275	20	
Sulfate	4300	300	2000	2365	96.9	90	110	0.584	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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_170929A

Sample ID	1709268-07BMS	Batch ID:	82596	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 12:46:02 PM	Prep Date:	9/29/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2270	100	2000	229.0	102	90	110			
Fluoride	2010	40.0	2000	0	101	90	110			
Sulfate	2230	300	2000	272.9	97.9	90	110			

Sample ID	1709268-07BMSD	Batch ID:	82596	TestNo:	E300	Units:	mg/L				
SampType:	MSD	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 12:58:02 PM	Prep Date:	9/29/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		2270	100	2000	229.0	102	90	110	0.073	20	
Fluoride		2020	40.0	2000	0	101	90	110	0.275	20	
Sulfate		2230	300	2000	272.9	97.9	90	110	0.045	20	

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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_170929A

Sample ID	ICV-170929	Batch ID:	R94480	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 10:20:27 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	24.8	1.00	25.00	0	99.2	90	110			
Fluoride	9.85	0.400	10.00	0	98.5	90	110			
Sulfate	75.4	3.00	75.00	0	101	90	110			

Sample ID	CCV1-170929		Batch ID:	R94480		TestNo:	E300		Units:	mg/L	
SampType:	CCV		Run ID:	IC4_170929A		Analysis Date:	9/29/2017 2:58:02 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.48	1.00	10.00	0	94.8	90	110			
Fluoride	3.93	0.400	4.000	0	98.1	90	110			
Sulfate	28.6	3.00	30.00	0	95.3	90	110			

Sample ID	CCV2-170929			Batch ID:	R94480		TestNo:	E300		Units:	mg/L	
SampType:	CCV			Run ID:	IC4_170929A		Analysis Date:	9/29/2017 5:40:55 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	

Chloride	9.55	1.00	10.00	0	95.5	90	110			
Fluoride	4.01	0.400	4.000	0	100	90	110			
Sulfate	28.9	3.00	30.00	0	96.5	90	110			

Sample ID	CCV3-170929	Batch ID:	R94480	TestNo:	E300	Units:	mg/L			
SampType:	CCV	Run ID:	IC4_170929A	Analysis Date:	9/29/2017 8:28:55 PM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.77	1.00	10.00	0	97.7	90	110			
Fluoride	4.07	0.400	4.000	0	102	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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_171002A

The QC data in batch 82623 applies to the following samples: 1709268-07B

Sample ID	MB-82623	Batch ID:	82623	TestNo:	E300	Units:	mg/L			
SampType:	MBLK	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 10:36:27 AM	Prep Date:	10/2/2017			
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	LCS-82623	Batch ID:	82623	TestNo:	E300	Units:	mg/L			
SampType:	LCS	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 10:48:27 AM	Prep Date:	10/2/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.60	1.00	10.00	0	96.0	90	110			
Fluoride	3.92	0.400	4.000	0	97.9	90	110			
Sulfate	28.8	3.00	30.00	0	95.9	90	110			

Sample ID	LCSD-82623	Batch ID:	82623	TestNo:	E300	Units:	mg/L			
SampType:	LCSD	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 11:00:27 AM	Prep Date:	10/2/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.60	1.00	10.00	0	96.0	90	110	0.030	20	
Fluoride	3.89	0.400	4.000	0	97.2	90	110	0.697	20	
Sulfate	28.8	3.00	30.00	0	96.0	90	110	0.090	20	

Sample ID	1709238-01CMS	Batch ID:	82623	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 4:23:23 PM	Prep Date:	10/2/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	314	10.0	200.0	110.6	102	90	110			
Fluoride	204	4.00	200.0	0	102	90	110			
Sulfate	347	30.0	200.0	143.9	101	90	110			

Sample ID	1709238-01CMSD	Batch ID:	82623	TestNo:	E300	Units:	mg/L			
SampType:	MSD	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 4:35:23 PM	Prep Date:	10/2/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	313	10.0	200.0	110.6	101	90	110	0.073	20	
Fluoride	204	4.00	200.0	0	102	90	110	0.230	20	
Sulfate	348	30.0	200.0	143.9	102	90	110	0.206	20	

Sample ID	1709268-07BMS	Batch ID:	82623	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 6:23:23 PM	Prep Date:	9/29/2017			
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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_171002A

Sample ID	1709268-07BMS	Batch ID:	82623	TestNo:	E300	Units:	mg/L			
SampType:	MS	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 6:23:23 PM	Prep Date:	9/29/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	406	10.0	200.0	207.7	99.0	90	110			
Fluoride	205	4.00	200.0	0	102	90	110			
Sulfate	455	30.0	200.0	241.9	107	90	110			

Sample ID	1709268-07BMSD	Batch ID:	82623	TestNo:	E300	Units:	mg/L				
SampType:	MSD	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 6:35:23 PM	Prep Date:	9/29/2017				
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		5.39	10.0	200.0	207.7	-101	90	110	195	20	SR
Fluoride		<1.00	4.00	200.0	0	0	90	110	0	20	S
Sulfate		<10.0	30.0	200.0	241.9	-121	90	110	0	20	S

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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_171002A

Sample ID	ICV-171002	Batch ID:	R94486	TestNo:	E300	Units:	mg/L			
SampType:	ICV	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 10:12:27 AM	Prep Date:				
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	24.2	1.00	25.00	0	96.9	90	110			
Fluoride	9.67	0.400	10.00	0	96.7	90	110			
Sulfate	73.8	3.00	75.00	0	98.4	90	110			

Sample ID	CCV1-171002		Batch ID:	R94486		TestNo:	E300		Units:	mg/L	
SampType:	CCV		Run ID:	IC4_171002A		Analysis Date:	10/2/2017 3:20:13 PM		Prep Date:		
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.74	1.00	10.00	0	97.4	90	110			
Fluoride	4.03	0.400	4.000	0	101	90	110			
Sulfate	29.3	3.00	30.00	0	97.8	90	110			

Sample ID	CCV2-171002	Batch ID:	R94486	TestNo:	E300	Units:	mg/L				
SampType:	CCV	Run ID:	IC4_171002A	Analysis Date:	10/2/2017 7:35:23 PM	Prep Date:					
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride	9.80	1.00	10.00	0	98.0	90	110			
Fluoride	4.05	0.400	4.000	0	101	90	110			
Sulfate	29.6	3.00	30.00	0	98.6	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: 1709268
Project: Luminant - A - 1 - Landfill

ANALYTICAL QC SUMMARY REPORT

RunID: WC_170928A

The QC data in batch 82593 applies to the following samples: 1709268-01B, 1709268-02B, 1709268-03B, 1709268-04B, 1709268-05B, 1709268-06B, 1709268-07B, 1709268-08B, 1709268-09B, 1709268-10B, 1709268-11B

Sample ID	MB-82593	Batch ID:	82593	TestNo:	M2540C	Units:	mg/L			
SampType:	MBLK	Run ID:	WC_170928A	Analysis Date:	9/29/2017 9:50:00 AM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera <10.0 10.0

Sample ID	LCS-82593		Batch ID:	82593		TestNo:	M2540C		Units:	mg/L	
SampType:	LCS		Run ID:	WC_170928A		Analysis Date:	9/29/2017 9:50:00 AM		Prep Date:	9/28/2017	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 746 10.0 745.6 0 100 90 113

Sample ID	1709268-02B-DUP	Batch ID:	82593	TestNo:	M2540C	Units:	mg/L			
SampType:	DUP	Run ID:	WC_170928A	Analysis Date:	9/29/2017 9:50:00 AM	Prep Date:	9/28/2017			
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 1500 50.0 0 1505 0.333 5

Sample ID: 1709156-05B-DUP	Batch ID: 82593	TestNo: M2540C	Units: mg/L							
SampType: DUP	Run ID: WC_170928A	Analysis Date: 9/29/2017 9:50:00 AM	Prep Date: 9/28/2017							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Total Dissolved Solids (Residue, Filtera 8240 200 0 8540 3.58 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