2021 Annual Groundwater Monitoring and Corrective Action Report - Revision 1

Martin Lake Steam Electric Station PDP 5 - Rusk County, Texas

Prepared for:

Luminant Generation Company LLC

Prepared by:

Golder Associates USA Inc., Member of WSP

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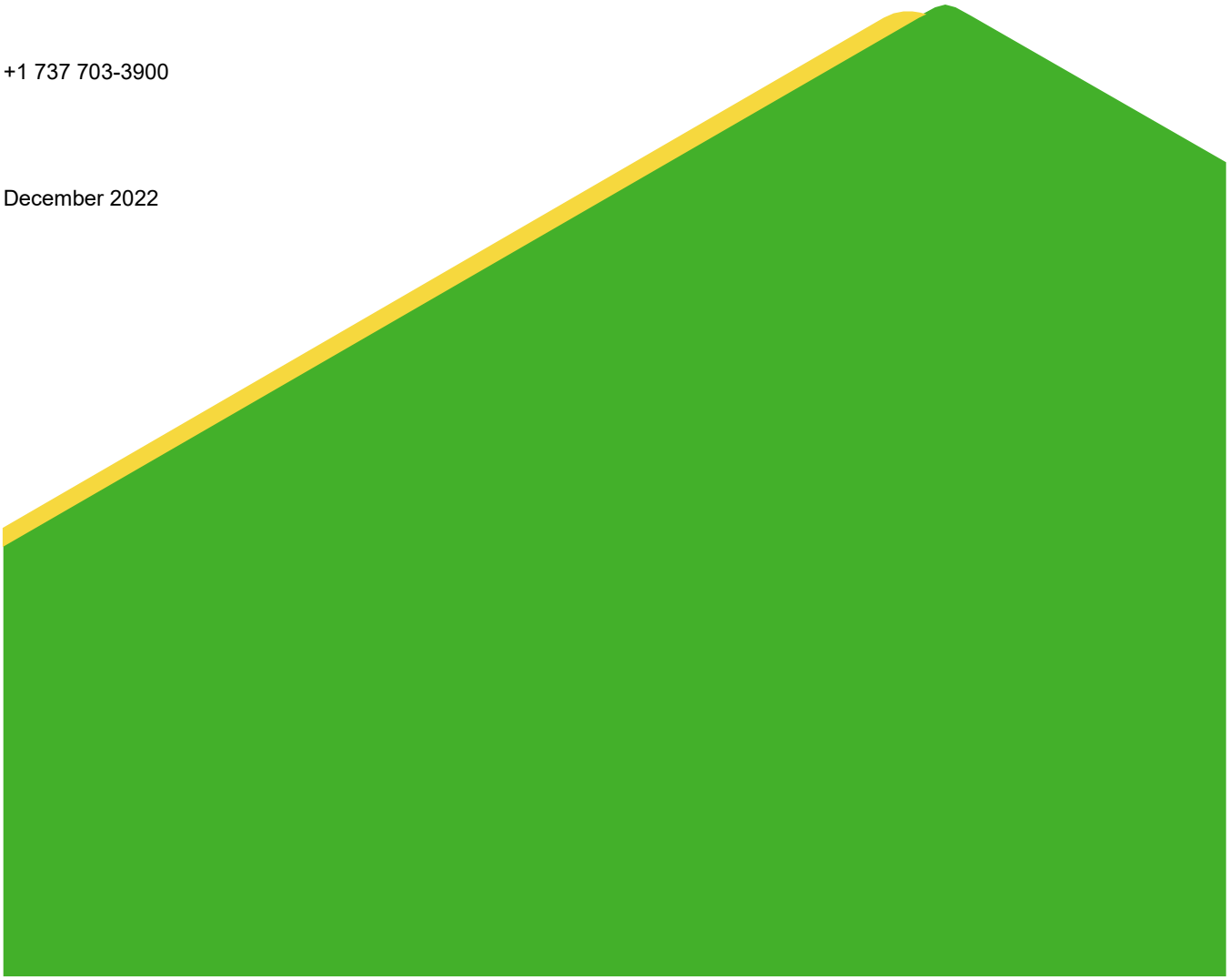
December 2022



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DOCUMENT REVISION RECORD

Issue No.	Date	Details of Revisions
Revision 0	January 31, 2022	Original Document
Revision 1	December 2022	Added laboratory analytical reports, groundwater potentiometric surface maps, and professional seals to figures where applicable

ACRONYMS AND ABBREVIATIONS

CCR	Coal Combustion Residuals
C.F.R.	Code of Federal Regulations
GWPS	Groundwater Protection Standard
MCL	Maximum Concentration Level
mg/L	Milligrams per Liter
MLSES	Martin Lake Steam Electric Station
NA	Not Applicable
PDP	Permanent Disposal Pond
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
T.A.C.	Texas Administrative Code
USEPA	United States Environmental Protection Agency

EXECUTIVE SUMMARY

Golder Associates USA Inc. (Golder), Member of WSP, has prepared this report on behalf of Luminant Generation Company LLC (Luminant) to satisfy the 2021 annual groundwater monitoring and corrective action reporting requirements of 40 C.F.R. Part 257 and 30 T.A.C. Chapter 352 for the Permanent Disposal Pond 5 (PDP 5) (the "CCR unit") at the Martin Lake Steam Electric Station (MLSES) in Rusk County, Texas. The CCR unit and CCR monitoring well network are shown on Figure 1.

At the beginning and end of the 2021 reporting period, the CCR unit was operating under a Detection Monitoring Program as described in § 257.94. The Detection Monitoring Program for PDP 5 was established in September 2017. Statistically significant increases (SSIs) above background prediction limits were identified for several Appendix III parameters as part of the 2017 through 2020 Detection Monitoring events; however, Alternate Source Demonstrations were completed that indicated that a source other than the CCR unit caused the SSIs. During 2021, SSIs were also identified for Appendix III constituents, which included boron in well PDP-25, calcium in well PDP-23, and chloride in well MW-19. Alternate sources for the SSIs identified in the 2021 sample data are being evaluated in accordance with § 257.94. If an alternate source is not identified to be the cause of the 2021 SSIs, an Assessment Monitoring Program will be established in accordance with § 257.94(e)(2).

1.0 INTRODUCTION

The CCR Rule (40 C.F.R. 257 Subpart D - *Standards for the Receipt of Coal Combustion Residuals in Landfills and Surface Impoundments*) has been promulgated by the United States Environmental Protection Agency (USEPA) to regulate the management and disposal of CCRs as solid waste under Resource Conservation and Recovery Act (RCRA) Subtitle D. TCEQ has adopted portions of the federal CCR rule at 30 T.A.C. Chapter 352 (Texas CCR Rule), and USEPA published its final approval of the Texas CCR rule on June 28, 2021. *See* 86 Fed. Reg. 33,892 (June 28, 2021). The Texas CCR Rule became effective on July 28, 2021, and it adopts and incorporates by reference the requirements for the annual groundwater monitoring report located at 40 C.F.R. § 257.90. *See* 30 T.A.C. § 352.901. It further adopts and incorporates by reference the Federal CCR Program requirements for detection and assessment monitoring in 30 T.A.C. §352.941 and 30 T.A.C. §352.951, respectively. Pursuant to 30 T.A.C. § 352.902, this report will be submitted to TCEQ for review no later than 30 days after the report has been placed in the facility's operating record. For existing CCR landfills and surface impoundments, the CCR Rule requires that the owner or operator 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. Per § 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.

(6) A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit. At a minimum, the summary must specify all of the following:

(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in § 257.94 or the assessment monitoring program in § 257.95;

(iii) If it was determined that there was a statistically significant increase over background for one or more constituents listed in Appendix III to this part pursuant to § 257.94(e):

(A) Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and

(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.

(iv) If it was determined that there was a SSL above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to § 257.95(g) include all of the following:

(A) Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase;

(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;

(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and

(D) Provide the date when the assessment of corrective measures was completed for the CCR unit.

(v) Whether a remedy was selected pursuant to § 257.97 during the current annual reporting period, and if so, the date of remedy selection; and

(vi) Whether remedial activities were initiated or are ongoing pursuant to § 257.98 during the current annual reporting period.

2.0 MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

The PDP 5 CCR Unit is currently in a Detection Monitoring Program. Golder collected the initial Detection Monitoring Program groundwater samples from the PDP 5 CCR monitoring well network in September 2017. Subsequent Detection Monitoring Program groundwater samples have been collected on a semi-annual basis since that time. Statistical analysis of the sample data is performed in accordance with the Statistical Analysis Plan for the Site (Golder 2022) and the USEPA Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities-Unified Guidance (USEPA 2009) to identify SSIs of Appendix III parameters over background concentrations. The Detection Monitoring Program sampling dates and parameters are summarized in the following table:

Detection Monitoring Program Summary

Sampling Dates	Parameters	SSIs	Assessment Monitoring Program Established
September 2017 February 2018 (re-samples)	Appendix III	Yes	No (Alternate Source Demonstration Completed)
June 2018 September 2018 November 2018 (re-samples)	Appendix III	Yes	No (Alternate Source Demonstration Completed)
May 2019 November 2019	Appendix III	Yes	No (Alternate Source Demonstration Completed)
May 2020 September 2020	Appendix III	Yes	No (Alternate Source Demonstration Completed)
June 2021 October 2021	Appendix III	Yes	No (Alternate Source Is Being Assessed)

The statistical background values and Appendix III analytical data are presented in Tables 1 and 2, respectively. SSIs of Appendix III parameters were identified for the 2017 through 2020 sampling events. An initial Alternate Source Demonstration was completed in 2018, which indicated that a source other than the CCR unit caused the SSIs observed in the 2017 sample data and 2018 re-sample data. Similarly, Alternate Source Demonstrations were completed in 2019 through 2021 based on the 2018 through 2020 sample data. As a result, PDP 5 has remained in the Detection Monitoring Program. A summary of the Alternate Source Demonstration based on the

2020 sample data is presented in Attachment 1 as required by § 257.94(e)(2).

Detection Monitoring Program groundwater samples were collected from the CCR groundwater monitoring network on a semi-annual basis in 2021, as required by the CCR Rule. The first 2021 semi-annual Detection Monitoring Program sampling event was conducted in June 2021. The second 2021 semi-annual Detection Monitoring Program sampling event was conducted in October 2021. The 2021 laboratory analytical reports are provided in Attachment 1. The analytical data from the 2021 semi-annual Detection Monitoring Program sampling events were evaluated using procedures described in the Statistical Analysis Plan (Golder 2022) to identify SSIs of Appendix III parameters over background concentrations. SSIs of Appendix III parameters over background concentrations were identified for several constituents for which SSIs had previously been attributed to alternate sources. Alternate sources for the SSIs identified in the 2021 sample data are being evaluated in accordance with § 257.94. If an alternate source is not identified to be the cause of the SSI, an Assessment Monitoring Program will be established in accordance with § 257.94(e)(2).

3.0 KEY ACTIONS COMPLETED IN 2021

Semi-annual Detection Monitoring Program groundwater monitoring events were completed in June and October 2021. The number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and the analytical results for the groundwater samples are summarized in Table 2. A map showing the CCR unit and monitoring wells is provided as Figure 1. No CCR wells were installed or decommissioned in 2021.

PDP 5 was constructed in 2010 on top of and immediately adjacent to closed and capped former pre-CCR Rule coal ash surface impoundments that began operation in 1979. PDP 5 extends significantly above natural grade and represents a localized topographic high relative to the surrounding area. Based on this configuration, there are no upgradient monitoring wells at PDP 5. Water elevations measured in the CCR wells during the 2021 semi-annual groundwater sampling events were used to develop groundwater potentiometric surface maps, which are presented in (Attachment 2), which confirm that groundwater flows radially outward from the topographic high at PDP 5.

An Alternate Source Demonstration was completed in March 2021, which documented that a source other than PDP 5 caused the SSIs detected over background levels during the 2020 Detection Monitoring Program sampling events, as required by § 257.94(e)(2). A copy of the 2021 Alternate Source Demonstration is provided in Attachment 3.

4.0 PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

No problems were encountered with the CCR groundwater monitoring program in 2021.

5.0 KEY ACTIVITIES PLANNED FOR 2022

The following key activities are planned for 2022:

- Luminant submitted a registration application to TCEQ under the Texas CCR Rule for the Martin Lake PDP 5 on January 24, 2022.

- Continue the Detection Monitoring Program in accordance with applicable provisions of 40 C.F.R. §257.95 and 30 T.A.C. §352.941.

- If an alternate source is identified to be the cause of the SSIs observed in 2021, which are described in this report, a written demonstration will be completed within 90 days of SSI determination and included in the following Annual Groundwater Monitoring and Corrective Action Report.

- If an alternate source is not identified to be the cause of the SSIs, an Assessment Monitoring Program will be established.

6.0 REFERENCES

Golder, 2022. Statistical Analysis Plan – Revision No. 1, Martin Lake Steam Electric Station – Permanent Disposal Pond 5, Rusk County, Texas.

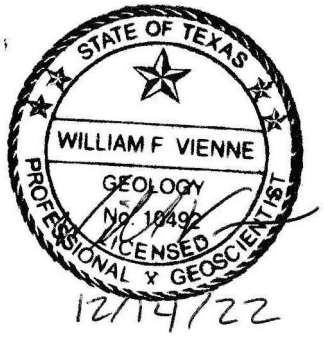
USEPA, 2009. Unified Guidance Document: Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, EPA 530/R-09-007, March.

Signature Page

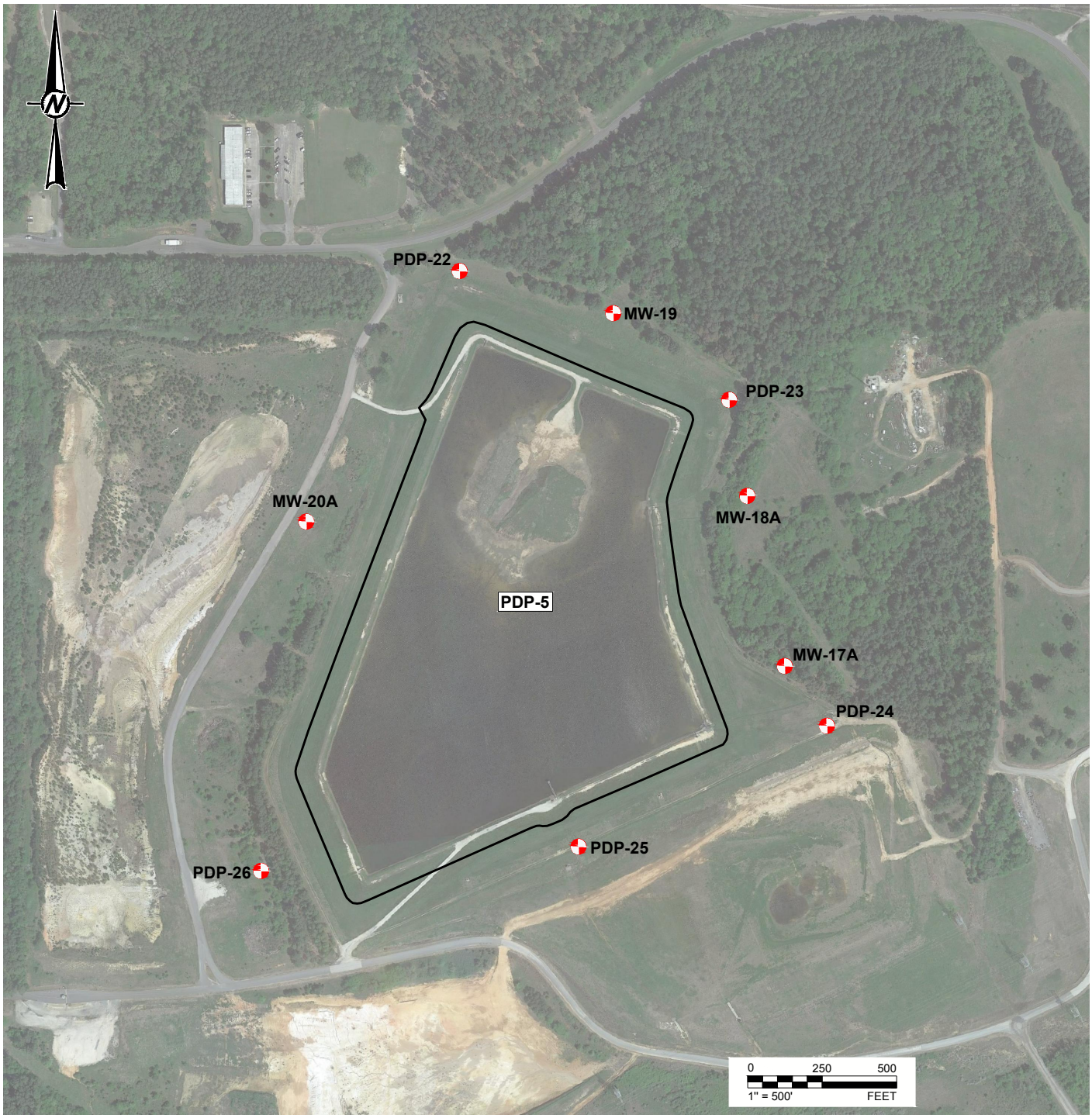
Golder Associates Inc., Member of WSP

Patrick J. Behling
Principal Engineer

William F. Vienne
Senior Hydrogeologist



FIGURES



LEGEND

CCR MONITORING WELL

EXTERIOR TOE OF PDP-5 BERMS

STATE OF TEXAS
WILLIAM F VIENNE
GEOLOGY
No. 10492
LICENSED
PROFESSIONAL GEOSCIENTIST
11/16/2022

REFERENCE(S)

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 4/9/19.

CLIENT
LUMINANT

PROJECT
MARTIN LAKE STEAM ELECTRIC STATION
TATUM, TEXAS

TITLE
PDP-5 DETAILED SITE PLAN

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2022-01-19
DESIGNED	AJD
PREPARED	AJD
REVIEWED	WFV
APPROVED	WFV

PROJECT NO.	CONTROL	REV.	FIGURE
19122262		0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

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TABLES

Table 1
Statistical Background Values
MLSES - PDP 5

Sample Location	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Flouride (mg/L)	field pH (s.u.)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
MW-17A	0.538	6.73	10.4	0.4	2.5 9.19	51.9	170
MW-18A	0.20	3.1	10.4	0.4	4.88 7.92	9.1	157
MW-19	0.782	237	57.7	0.512	4.6 8.08	672	1,380
MW-20A	0.213	25.7	12.3	0.954	3.06 8.76	148	381
PDP-22	0.411	306	32.7	1.07	4.08 8.63	216	1,780
PDP-23	0.0678	2	7.52	0.4	3.38 8.45	3.27	143
PDP-24	4.92	45.9	22.6	1.03	1.33 9.97	533	894
PDP-25	0.136	41.3	197	0.4	4.65 7.93	118	705
PDP-26	0.111	4.74	14.6	0.577	5.35 7.57	64.6	438

TABLE 2
APPENDIX III ANALYTICAL RESULTS
MLSES PDP 5

Sample Location	Date Sampled	B	Ca	Cl	F	field pH	SO_4	TDS
MW-17A	09/22/17	0.402	3.1	8.3	<0.1	6.78	31.2	111
	06/14/18	0.485	6.48	9.16	<0.1	6.87	45.9	129
	09/11/18	0.523	5.06	8.82	0.179 J	5.03	43.1	137
	05/13/19	0.497	4.88	9.18	<0.1	6.79	44.7	145
	11/07/19	0.52	5.05	8.81	<0.100	6.44	43.9	127
	05/19/20	0.521	5.09	8.74	<0.100	6.57	46.8	140
	09/25/20	0.477	5.76	10.1	<0.100	6.57	47.7	133
	06/03/21	0.534	6.21	7.83	<0.100	6.69	50.4	146
	10/05/21	0.393	3.95	8.42	<0.100	6.57	34.3	115
MW-18A	09/21/17	0.0654	1.04	5.27	<0.1	6.94	3.23	45
	06/14/18	0.102	2	6.56	<0.1	6.92	3.48	71
	09/12/18	0.211	3.23	9.06	<0.1	5.69	4.82	150
	11/7/2018 re-sample	0.128	--	--	--	--	--	--
	05/13/19	0.117	1.01	6.17	0.138 J	6.64	3.23	73
	11/07/19	0.127	11.5	6.34	<0.100	6.23	3.67	68
	05/19/20	0.225	1.54	7.09	<0.100	6.89	5.97	86
	09/25/20	0.188	1.66	8.13	<0.100	6.78	6.03	77
	06/03/21	0.188	1.73	6.2	<0.100	6.69	6.20	76
	10/05/21	0.159	1.49	6.63	<0.100	6.59	5.73	76
MW-19	09/22/17	0.0677	2.74	5.36	<0.1	6.94	1.46 J	98
	06/14/18	0.577	133	24.4	0.216 J	6.78	328	758
	09/11/18	0.243	38	65.1	0.228 J	6.04	166	597
	11/7/2018 re-sample	--	--	5.22	--	--	--	--
	05/13/19	0.429	122	26.8	0.229 J	6.72	349	813
	11/08/19	0.529	77.8	49.3	0.189 J	6.87	310	844
	05/19/20	0.0724	1.49	5.84	<0.100	6.91	1.02 J	85
	09/25/20	0.412	94.6	14.3	0.111 J	6.92	160	462
	06/03/21	0.56	140	19.5	0.352 J	6.75	336	751
	10/05/21	0.495	124	62.9	0.180 J	6.74	323	896
MW-20A	09/22/17	0.0807	17.4	12.6	0.175 J	6.71	74.2	237
	02/21/18 re-sample	--	--	10.7	--	--	--	--
	06/13/18	0.171	24	10.9	0.672	6.72	132	250
	09/11/18	0.141	7.16	11	0.235 J	4.70	39.1	154
	05/13/19	0.239	37.4	10.2	0.731	6.81	178	328
	11/08/19	0.132	9.9	10.2	0.465	6.51	88	205
	05/19/20	0.220	24	10.4	0.413	6.83	133	270
	09/25/20	0.107	8.94	12.6	0.132 J	6.68	54.3	162
	06/03/21	0.152	26.1	9.63	0.324	6.73	93.2	218
	10/05/21	0.0724	6.12	10.8	0.127 J	6.44	32.8	139

TABLE 2
APPENDIX III ANALYTICAL RESULTS
MLSES PDP 5

Sample Location	Date Sampled	B	Ca	Cl	F	field pH	SO_4	TDS
PDP-22	09/22/17	0.221	92.5	12.3	0.321 J	6.98	178	558
	06/14/18	0.115	7.78	11.8	0.239	6.63	186	491
	09/12/18	0.164	61.1	10.9	0.216 J	5.88	143	476
	05/13/19	0.158	98.2	10.1	0.303 J	6.86	184	615
	11/12/19	0.226	34.3	12.6	0.218 J	6.93	215	482
	05/19/20	0.0646	54.9	1.06	<0.100	6.55	5.21	205
	09/25/20	0.206	25.1	12.7	0.128 J	6.73	186	398
	06/03/21	0.121	73.1	6.64	<0.100	6.52	118	415
	10/05/21	0.166	27.1	10.1	0.223 J	6.78	170	376
PDP-23	09/22/17	0.0463	2.34	4.48	0.147 J	6.77	1.47 J	111
	02/21/18 re-sample	--	2.37	--	--	--	--	--
	06/13/18	0.0357	2.29	6.21	<0.1	6.82	1.26 J	98
	09/11/18	0.0760	1.96	6.38	<0.1	5.32	1.52 J	98
	11/7/2018 re-sample	0.0683	--	--	--	--	--	--
	05/13/19	0.0628	1.89	6.98	<0.1	6.68	1.28 J	103
	11/12/19	0.0675	2.14	4.98	<0.100	6.72	1.41 J	93
	05/19/20	0.0709	2.03	6.86	<0.100	6.83	1.19 J	104
	09/25/20	0.0617	2.31	7.29	<0.100	6.74	<1.00	94
	06/03/21	0.0818	2.32	6.88	<0.100	6.57	1.42 J	101
	10/05/21	0.0661	2.38	6.58	<0.100	6.59	1.02 J	97
PDP-24	09/22/17	3.01	25.8	17.5	0.898	6.95	231	440
	06/14/18	2.71	23.9	21.1	0.629	6.82	284	481
	09/11/18	4.08	41.6	19.4	0.832	4.20	460	760
	05/13/19	3.23	23	21	0.871	6.95	300	537
	11/12/19	3	21.9	20.6	0.751	6.87	295	520
	11/12/2019 DUP	2.97	22.2	20.5	0.744	6.87	300	504
	05/19/20	3.17	21.4	21	0.61	6.79	286	512
	09/25/20	4.04	40.7	19.6	0.776	6.83	445	699
	06/03/21	3.56	26.4	19.3	0.934	6.57	350	615
	10/05/21	4.24	46.9	17.8	0.782	6.72	432	681
PDP-25	09/22/17	0.133	36.8	130	0.157 J	6.81	89.1	481
	06/14/18	0.119	40.4	111	<0.1	6.78	73.4	439
	09/11/18	0.167	36.2	135	0.115 J	5.87	90.3	469
	11/7/2018 re-sample	0.142	--	--	--	--	--	--
	05/13/19	0.144	44.4	108	0.121 J	6.84	69	469
	11/12/19	0.184	38.6	117	<0.100	6.82	71.4	454
	05/19/20	0.202	53.7	105	<0.100	6.61	62.2	442
	09/25/20	0.174	46.3	123	<0.100	6.77	67.5	445
	06/03/21	0.234	45.2	101	0.236 J	6.78	61.2	431
	10/05/21	0.159	40.4	115	<0.100	6.73	62.7	427

TABLE 2
APPENDIX III ANALYTICAL RESULTS
MLSES PDP 5

Sample Location	Date Sampled	B	Ca	Cl	F	field pH	SO_4	TDS
PDP-26	09/22/17	0.0343	2.32	5.24	0.157 J	6.84	5.88	107
	06/14/18	0.0225 J	2.93	4.8	<0.1	6.89	4.27	100
	09/12/18	0.0371	2.37	4.88	<0.1	6.07	2.66 J	107
	05/13/19	0.0528	1.9	4.59	0.217 J	6.86	2.7 J	106
	11/12/19	0.0622	2.25	4.64	0.122 J	6.77	2.1 J	102
	05/19/20	0.0538	2.09	4.52	<0.100	6.64	2.1 J	108
	09/25/20	0.0549	2.71	5.07	<0.100	6.83	1.91	92
	06/03/21	0.0516	2.37	4.05	<0.100	6.84	2.18 J	104
	6/3/21 DUP	0.0635	2.23	4.05	<0.1	6.84	2.05 J	107
	10/05/21	0.0486	3.85	4.48	0.194 J	6.74	3.28	104
	10/5/21 DUP	0.0432	3.58	4.24	0.192 J	6.74	2.49 J	103

Notes:
1. All concentrations in mg/L. pH in standard units.
2. J - concentration is below sample quantitation limit; result is an estimate.

ATTACHMENT 1

LABORATORY ANALYTICAL REPORTS

June 11, 2021

Will Vienne
Golder
2201 Double Creek Dr #4004
Round Rock, Texas 78664
TEL: (512) 671-3434
FAX (512) 671-3446

Order No.: 2106027

RE: Luminant - MLSES CCR PDP-5

Dear Will Vienne:

DHL Analytical, Inc. received 10 sample(s) on 6/3/2021 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP 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: T104704211-21-27

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DHL ANALYTICAL
2300 Double Creek Dr. Round Rock, TX 78664
Phone 512.388.8222
Web: **www.dhlanalytical.com**
Email: **login@dhlanalytical.com**

CHAIN-OF-CUSTODY

CLIENT: GOLDER
ADDRESS: 2201 DOUBLE CREEK DR, ROUND ROCK TX
PHONE: 512-671-3434 EMAIL:
DATA REPORTED TO: WILL VIENNE
ADDITIONAL REPORT COPIES TO:

PO#:
PROJECT LOCATION OR NAME: LUMINANT - MLSES CCR PDP-S
CLIENT PROJECT # 19122262

LABORATORY USE ONLY
DHL WORKORDER #: 2106027

COLLECTOR: JOHN BRAYTON

Authorize 5% surcharge for TRRP report? ☐ Yes ☐ No

Lab Use Only

W=WATER L=LIQUID S=SOIL SO=SOLID SE=SEDIMENT P=PAINT SL=SLUDGE

Field Sample I.D.	DHL Lab #	Collection Date	Collection Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4	NaOH	Zn Acetate ☐	ICE ☒	UNPRESERVED ☒	ANALYSES	APPENDIX III	FIELD NOTES
MW-17A	01	6-3-21	0905	W	P	2		X				X			X	
PDP-24	02	6-3-21	0950	W	P	2		X				X			X	
PDP-25	03	6-3-21	1040	W	P	2		X				X			X	
PDP-26	04	6-3-21	1125	W	P	2		X				X			X	
DUP-1	05	6-3-21	1125	W	P	2		X				X			X	
MW-20A	06	6-3-21	1230	W	P	2		X				X			X	
PDP-22	07	6-3-21	1315	W	P	2		X				X			X	
PDP-23	08	6-3-21	1415	W	P	2		X				X			X	
MW-19	09	6-3-21	1515	W	P	2		X				X			X	
MW-18A	10	6-3-21	1620	W	P	2		X				X			X	

ANALYSES: BTEX ☐ MTBE ☐ [METHOD 8260] | TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐ | GRO 8015 ☐ DRO 8015 ☐ | VOC 8260 ☐ VOC 624.1 ☐ | SVOC 8270 ☐ SVOC 625.1 ☐ | PAH 8270 ☐ HOLD PAH ☐ | PEST 8270 ☐ 625.1 ☐ O-P PEST 8270 ☐ | PCB 8082 ☐ 608.3 ☐ PCB 8270 ☐ 625.1 ☐ | HERB 8321 ☐ T PHOS ☐ AMMONIA ☐ | METALS 6020 ☐ 200.8 ☐ DISS. METALS ☐ | RCRA 8 ☐ TX11 ☐ _____ | pH ☐ HEX CHROM ☐ ALKALINITY ☐ COD ☐ | ANIONS 300 ☐ 9056 ☐ _____ | TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐ | TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐ | RCI ☐ IGN ☐ DGAS ☐ OIL&GREASE ☐ | TDS ☐ TSS ☐ % MOIST ☐ CYANIDE ☐

Relinquished By: (Sign)	DATE/TIME	Received by:
[signature]	6-3-21 1800	FedEx
FedEx	6/4/21 0950	[signature]
Relinquished By: (Sign)	DATE/TIME	Received by:

TURN AROUND TIME (CALL FIRST FOR RUSH)
RUSH-1 DAY☐ RUSH-2 DAY☐ RUSH-3 DAY☐
NORMAL ☒ OTHER ☐
DUE DATE _____ ☐

LABORATORY USE ONLY
RECEIVING TEMP (°C): 3.5 THERM #: 73
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LSO ☒ FEDEX ☐ UPS ☐ COURIER ☐ OTHER ☐ HAND DELIVERED

☐ DHL DISPOSAL @ 5.00 each ☐ Return

Eric Lau

From: John DuPont
Sent: Tuesday, May 28, 2019 11:35 AM
To: Eric Lau
Subject: FW: CCR Analysis

Appendix III Parameters:
Metals (Ca and B)
Anions (Cl, F, and SO4)
TDS

Appendix IV Parameters:

Metals (As, Ba, Be, Cd, Co, Cr, Hg, Li, Mo, Pb, Sb, Se, and Tl)
Ra-226
Ra-228

From: Vienne, Will [mailto:William_Vienne@golder.com]
Sent: Tuesday, April 09, 2019 12:48 PM
To: John DuPont <dupont@dhlanalytical.com>
Subject: CCR Analysis

ORIGIN ID:GGGA (512) 671-3434
GOLDER ASSOCIATES
2201 DOUBLE CREEK DR STE 4004

ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 03JUN21
ACTWGT: 44.20 LB
CAD: 6994166/SSFE2201
DIMS: 26x14x14 IN

BILL THIRD PARTY

TO **DHL ANALYTICAL LABS**
DHL ANALYTICAL LABS
2300 DOUBLE CREEK DR

ROUND ROCK TX 78664
(512) 388-8222 REF:
INV:
PO: DEPT:

FedEx
Express
E

J211321033101uv

FRI - 04 JUN 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7879 2099 7873**

AHS
78664
TX-US **AUS**

A8 BSMA

CUSTODY SE
DATE 6.3.21
SIGNATURE [signature]

AL

DHL
ANALYTICAL

PDP5 CCR
Golder

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Golder** Date Received: **6/3/2021**

Work Order Number **2106027** Received by: **EL**

Checklist completed by: Signature 6/4/2021 Date Reviewed by (ML) Initials 6/4/2021 Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	**3.5** °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 13171
	Adjusted? No		Checked by R.A.
Water - ph>9 (S) or ph>10 (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:

Laboratory Name: DHL Analytical, Inc.

Laboratory Review Checklist: Reportable Data

Project Name: Luminant - MLSES CCR PDP-5	**LRC Date:** 6/11/2021
Reviewer Name: Angie O'Donnell	**Laboratory Work Order: 2106027**
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	**1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	**X**				**R1-01**
		2) Were all departures from standard conditions described in an exception report?			**X**		
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	**X**				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	**X**				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	**X**				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	**X**				
		3) Were calculations checked by a peer or supervisor?	**X**				
		4) Were all analyte identifications checked by a peer or supervisor?	**X**				
		5) Were sample detection limits reported for all analytes not detected?	**X**				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			**X**		
		7) Were % moisture (or solids) reported for all soil and sediment samples?			**X**		
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?			**X**		
		9) If required for the project, TICs reported?			**X**		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?			**X**		
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?			**X**		
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	**X**				
		2) Were blanks analyzed at the appropriate frequency?	**X**				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	**X**				
		4) Were blank concentrations < MDL?	**X**				
		5) For analyte(s) detected in a blank sample, was the concentration, unadjusted for sample specific factors, in all associated field samples, **greater** than 10 times the concentration in the blank sample?			**X**		
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	**X**				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	**X**				
		3) Were LCSs analyzed at the required frequency?	**X**				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	**X**				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	**X**				
		6) Was the LCSD RPD within QC limits (if applicable)?	**X**				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	**X**				
		2) Were MS/MSD analyzed at the appropriate frequency?	**X**				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?	**X**				
		4) Were MS/MSD RPDs within laboratory QC limits?	**X**				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	**X**				
		2) Were analytical duplicates analyzed at the appropriate frequency?	**X**				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	**X**				
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	**X**				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	**X**				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	**X**				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	**X**				
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	**X**				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	**X**				

Laboratory Name: DHL Analytical, Inc.

Laboratory Review Checklist (continued): Supporting Data

Project Name: Luminant - MLSES CCR PDP-5	**LRC Date:** 6/11/2021
Reviewer Name: Angie O'Donnell	**Laboratory Work Order: 2106027**
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC Section 5.5.10)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?	X				
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chapter 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC Chapter 5,
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) The amount of analyte measured in the duplicate,
  b) The calculated RPD, and
  c) The laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory is not accredited under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on February 23-26, 2021. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name: John DuPont
Official Title: General Manager

Name: Dr. Derhsing Luu
Official Title: Technical Director

Signature

6/14/2021
Date

DHL Analytical, Inc. **Date:** *11-Jun-21*

CLIENT: Golder
Project: Luminant - MLSES CCR PDP-5
Lab Order: 2106027

CASE NARRATIVE

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

Method SW6020B - Metals Analysis
Method E300 - Anions Analysis
Method M2540C - Total Dissolved Solids Analysis

Exception Report R1-01

The samples were received and log-in performed on 6/3/2021. A total of 9 samples were received and analyzed. The samples arrived in good condition and were properly packaged.

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT: Golder
Project: Luminant - MLSES CCR PDP-5
Lab Order: 2106027

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
2106027-01	MW-17A		06/03/21 09:05 AM	6/3/2021
2106027-02	PDP-24		06/03/21 09:50 AM	6/3/2021
2106027-03	PDP-25		06/03/21 10:40 AM	6/3/2021
2106027-04	PDP-26		06/03/21 11:25 AM	6/3/2021
2106027-05	DUP-1		06/03/21 11:25 AM	6/3/2021
2106027-06	MW-20A		06/03/21 12:30 PM	6/3/2021
2106027-07	PDP-22		06/03/21 01:15 PM	6/3/2021
2106027-08	PDP-23		06/03/21 02:15 PM	6/3/2021
2106027-09	MW-19		06/03/21 03:15 PM	6/3/2021
2106027-10	MW-18A		06/03/21 04:20 PM	6/3/2021

Lab Order: 2106027
Client: Golder
Project: Luminant - MLSES CCR PDP-5

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2106027-01A	MW-17A	06/03/21 09:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	MW-17A	06/03/21 09:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-01B	MW-17A	06/03/21 09:05 AM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	MW-17A	06/03/21 09:05 AM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-02A	PDP-24	06/03/21 09:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	PDP-24	06/03/21 09:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-02B	PDP-24	06/03/21 09:50 AM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	PDP-24	06/03/21 09:50 AM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	PDP-24	06/03/21 09:50 AM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-03A	PDP-25	06/03/21 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	PDP-25	06/03/21 10:40 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-03B	PDP-25	06/03/21 10:40 AM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	PDP-25	06/03/21 10:40 AM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	PDP-25	06/03/21 10:40 AM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-04A	PDP-26	06/03/21 11:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	PDP-26	06/03/21 11:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-04B	PDP-26	06/03/21 11:25 AM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	PDP-26	06/03/21 11:25 AM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-05A	DUP-1	06/03/21 11:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	DUP-1	06/03/21 11:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-05B	DUP-1	06/03/21 11:25 AM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	DUP-1	06/03/21 11:25 AM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-06A	MW-20A	06/03/21 12:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	MW-20A	06/03/21 12:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-06B	MW-20A	06/03/21 12:30 PM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	MW-20A	06/03/21 12:30 PM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-07A	PDP-22	06/03/21 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	PDP-22	06/03/21 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848

Lab Order: 2106027
Client: Golder
Project: Luminant - MLSES CCR PDP-5

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2106027-07A	PDP-22	06/03/21 01:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-07B	PDP-22	06/03/21 01:15 PM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	PDP-22	06/03/21 01:15 PM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-08A	PDP-23	06/03/21 02:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	PDP-23	06/03/21 02:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-08B	PDP-23	06/03/21 02:15 PM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	PDP-23	06/03/21 02:15 PM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-09A	MW-19	06/03/21 03:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	MW-19	06/03/21 03:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-09B	MW-19	06/03/21 03:15 PM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	MW-19	06/03/21 03:15 PM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	MW-19	06/03/21 03:15 PM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830
2106027-10A	MW-18A	06/03/21 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
	MW-18A	06/03/21 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/08/21 08:36 AM	100848
2106027-10B	MW-18A	06/03/21 04:20 PM	Aqueous	E300	Anion Preparation	06/07/21 09:36 AM	100841
	MW-18A	06/03/21 04:20 PM	Aqueous	M2540C	TDS Preparation	06/04/21 01:46 PM	100830

Lab Order: 2106027
Client: Golder
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2106027-01A	MW-17A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:34 AM	ICP-MS5_210609A
	MW-17A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	2	06/09/21 12:01 PM	ICP-MS4_210609A
2106027-01B	MW-17A	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 12:29 PM	IC2_210607A
	MW-17A	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-02A	PDP-24	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	10	06/09/21 12:16 PM	ICP-MS4_210609A
	PDP-24	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:37 AM	ICP-MS5_210609A
2106027-02B	PDP-24	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 12:45 PM	IC2_210607A
	PDP-24	Aqueous	E300	Anions by IC method - Water	100841	10	06/07/21 04:37 PM	IC2_210607A
	PDP-24	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-03A	PDP-25	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:40 AM	ICP-MS5_210609A
	PDP-25	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	5	06/09/21 12:18 PM	ICP-MS4_210609A
2106027-03B	PDP-25	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 01:01 PM	IC2_210607A
	PDP-25	Aqueous	E300	Anions by IC method - Water	100841	10	06/07/21 05:25 PM	IC2_210607A
	PDP-25	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-04A	PDP-26	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:41 AM	ICP-MS4_210609A
	PDP-26	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 10:52 AM	ICP-MS5_210609A
2106027-04B	PDP-26	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 01:17 PM	IC2_210607A
	PDP-26	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-05A	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 12:20 PM	ICP-MS4_210609A
	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:42 AM	ICP-MS5_210609A
2106027-05B	DUP-1	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 01:33 PM	IC2_210607A
	DUP-1	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-06A	MW-20A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:45 AM	ICP-MS5_210609A
	MW-20A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	2	06/09/21 12:22 PM	ICP-MS4_210609A
2106027-06B	MW-20A	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 01:49 PM	IC2_210607A
	MW-20A	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-07A	PDP-22	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	10	06/09/21 12:24 PM	ICP-MS4_210609A
	PDP-22	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 12:42 PM	ICP-MS4_210609A

Lab Order: 2106027
Client: Golder
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2106027-07A	PDP-22	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:47 AM	ICP-MS5_210609A
2106027-07B	PDP-22	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 02:05 PM	IC2_210607A
	PDP-22	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-08A	PDP-23	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:50 AM	ICP-MS5_210609A
	PDP-23	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 12:26 PM	ICP-MS4_210609A
2106027-08B	PDP-23	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 02:21 PM	IC2_210607A
	PDP-23	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-09A	MW-19	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	10	06/09/21 12:28 PM	ICP-MS4_210609A
	MW-19	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:53 AM	ICP-MS5_210609A
2106027-09B	MW-19	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 02:37 PM	IC2_210607A
	MW-19	Aqueous	E300	Anions by IC method - Water	100841	10	06/07/21 05:41 PM	IC2_210607A
	MW-19	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A
2106027-10A	MW-18A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 12:30 PM	ICP-MS4_210609A
	MW-18A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100848	1	06/09/21 11:55 AM	ICP-MS5_210609A
2106027-10B	MW-18A	Aqueous	E300	Anions by IC method - Water	100841	1	06/07/21 02:53 PM	IC2_210607A
	MW-18A	Aqueous	M2540C	Total Dissolved Solids	100830	1	06/04/21 05:00 PM	WC_210604A

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	MW-17A
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-01
Project No:	19122262	**Collection Date:**	06/03/21 09:05 AM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.534	0.0200	0.0600		mg/L	2	06/09/21 12:01 PM
Calcium	6.21	0.100	0.300		mg/L	1	06/09/21 11:34 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	7.83	0.300	1.00		mg/L	1	06/07/21 12:29 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/07/21 12:29 PM
Sulfate	50.4	1.00	3.00		mg/L	1	06/07/21 12:29 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	146	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	PDP-24
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-02
Project No:	19122262	**Collection Date:**	06/03/21 09:50 AM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	3.56	0.100	0.300		mg/L	10	06/09/21 12:16 PM
Calcium	26.4	1.00	3.00		mg/L	10	06/09/21 12:16 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	19.3	0.300	1.00		mg/L	1	06/07/21 12:45 PM
Fluoride	0.934	0.100	0.400		mg/L	1	06/07/21 12:45 PM
Sulfate	350	10.0	30.0		mg/L	10	06/07/21 04:37 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	615	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	PDP-25
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-03
Project No:	19122262	**Collection Date:**	06/03/21 10:40 AM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.234	0.0500	0.150		mg/L	5	06/09/21 12:18 PM
Calcium	45.2	0.500	1.50		mg/L	5	06/09/21 12:18 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	101	3.00	10.0		mg/L	10	06/07/21 05:25 PM
Fluoride	0.236	0.100	0.400	J	mg/L	1	06/07/21 01:01 PM
Sulfate	61.2	1.00	3.00		mg/L	1	06/07/21 01:01 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	431	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

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J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	PDP-26
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-04
Project No:	19122262	**Collection Date:**	06/03/21 11:25 AM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.0516	0.0100	0.0300		mg/L	1	06/09/21 11:41 AM
Calcium	2.37	0.100	0.300		mg/L	1	06/09/21 10:52 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	4.05	0.300	1.00		mg/L	1	06/07/21 01:17 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/07/21 01:17 PM
Sulfate	2.18	1.00	3.00	J	mg/L	1	06/07/21 01:17 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	104	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	DUP-1
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-05
Project No:	19122262	**Collection Date:**	06/03/21 11:25 AM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.0635	0.0100	0.0300		mg/L	1	06/09/21 12:20 PM
Calcium	2.23	0.100	0.300		mg/L	1	06/09/21 11:42 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	4.05	0.300	1.00		mg/L	1	06/07/21 01:33 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/07/21 01:33 PM
Sulfate	2.05	1.00	3.00	J	mg/L	1	06/07/21 01:33 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	107	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	MW-20A
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-06
Project No:	19122262	**Collection Date:**	06/03/21 12:30 PM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.152	0.0200	0.0600		mg/L	2	06/09/21 12:22 PM
Calcium	26.1	0.200	0.600		mg/L	2	06/09/21 12:22 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	9.63	0.300	1.00		mg/L	1	06/07/21 01:49 PM
Fluoride	0.324	0.100	0.400	J	mg/L	1	06/07/21 01:49 PM
Sulfate	93.2	1.00	3.00		mg/L	1	06/07/21 01:49 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	218	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	PDP-22
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-07
Project No:	19122262	**Collection Date:**	06/03/21 01:15 PM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.121	0.0100	0.0300		mg/L	1	06/09/21 12:42 PM
Calcium	73.1	1.00	3.00		mg/L	10	06/09/21 12:24 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	6.64	0.300	1.00		mg/L	1	06/07/21 02:05 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/07/21 02:05 PM
Sulfate	118	1.00	3.00		mg/L	1	06/07/21 02:05 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	415	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	PDP-23
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-08
Project No:	19122262	**Collection Date:**	06/03/21 02:15 PM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.0818	0.0100	0.0300		mg/L	1	06/09/21 12:26 PM
Calcium	2.32	0.100	0.300		mg/L	1	06/09/21 11:50 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	6.88	0.300	1.00		mg/L	1	06/07/21 02:21 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/07/21 02:21 PM
Sulfate	1.42	1.00	3.00	J	mg/L	1	06/07/21 02:21 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	101	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	MW-19
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-09
Project No:	19122262	**Collection Date:**	06/03/21 03:15 PM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.560	0.100	0.300		mg/L	10	06/09/21 12:28 PM
Calcium	140	1.00	3.00		mg/L	10	06/09/21 12:28 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	19.5	0.300	1.00		mg/L	1	06/07/21 02:37 PM
Fluoride	0.352	0.100	0.400	J	mg/L	1	06/07/21 02:37 PM
Sulfate	336	10.0	30.0		mg/L	10	06/07/21 05:41 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	751	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT:	Golder	**Client Sample ID:**	MW-18A
Project:	Luminant - MLSES CCR PDP-5	**Lab ID:**	2106027-10
Project No:	19122262	**Collection Date:**	06/03/21 04:20 PM
Lab Order:	2106027	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.188	0.0100	0.0300		mg/L	1	06/09/21 12:30 PM
Calcium	1.73	0.100	0.300		mg/L	1	06/09/21 11:55 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BTJ**
Chloride	6.20	0.300	1.00		mg/L	1	06/07/21 02:53 PM
Fluoride	<0.100	0.100	0.400		mg/L	1	06/07/21 02:53 PM
Sulfate	6.20	1.00	3.00		mg/L	1	06/07/21 02:53 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	76.0	10.0	10.0		mg/L	1	06/04/21 05:00 PM

Qualifiers:

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J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_210428A

Sample ID: **DCS2-100323**	Batch ID: **100323**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **DCS2**	Run ID: **ICP-MS4_210428A**	Analysis Date: **4/28/2021 10:34:00 AM**	Prep Date: **4/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.302	0.300	0.300	0	101	70	130	0	0	

Sample ID: **DCS4-100323**	Batch ID: **100323**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **DCS4**	Run ID: **ICP-MS4_210428A**	Analysis Date: **4/28/2021 10:39:00 AM**	Prep Date: **4/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0310	0.0300	0.0300	0	103	70	130	0	0	

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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_210609A

The QC data in batch 100848 applies to the following samples: 2106027-01A, 2106027-02A, 2106027-03A, 2106027-04A, 2106027-05A, 2106027-06A, 2106027-07A, 2106027-08A, 2106027-09A, 2106027-10A

Sample ID: **MB-100848** Batch ID: **100848** TestNo: **SW6020B** Units: **mg/L**
SampType: **MBLK** Run ID: **ICP-MS4_210609A** Analysis Date: **6/9/2021 11:33:00 AM** Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	<0.0100	0.0300								

Sample ID: **LCS-100848** Batch ID: **100848** TestNo: **SW6020B** Units: **mg/L**
SampType: **LCS** Run ID: **ICP-MS4_210609A** Analysis Date: **6/9/2021 11:35:00 AM** Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.201	0.0300	0.200	0	100	80	120			

Sample ID: **LCSD-100848** Batch ID: **100848** TestNo: **SW6020B** Units: **mg/L**
SampType: **LCSD** Run ID: **ICP-MS4_210609A** Analysis Date: **6/9/2021 11:37:00 AM** Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.200	0.0300	0.200	0	99.9	80	120	0.390	15	

Sample ID: **2106027-04A SD** Batch ID: **100848** TestNo: **SW6020B** Units: **mg/L**
SampType: **SD** Run ID: **ICP-MS4_210609A** Analysis Date: **6/9/2021 11:43:00 AM** Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0606	0.150	0	0.0516				16.0	20	

Sample ID: **2106027-04A PDS** Batch ID: **100848** TestNo: **SW6020B** Units: **mg/L**
SampType: **PDS** Run ID: **ICP-MS4_210609A** Analysis Date: **6/9/2021 12:03:00 PM** Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.259	0.0300	0.200	0.0516	104	75	125			

Sample ID: **2106027-04A MS** Batch ID: **100848** TestNo: **SW6020B** Units: **mg/L**
SampType: **MS** Run ID: **ICP-MS4_210609A** Analysis Date: **6/9/2021 12:05:00 PM** Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.262	0.0300	0.200	0.0516	105	75	125			

Sample ID: **2106027-04A MSD** Batch ID: **100848** TestNo: **SW6020B** Units: **mg/L**
SampType: **MSD** Run ID: **ICP-MS4_210609A** Analysis Date: **6/9/2021 12:07:00 PM** Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.262	0.0300	0.200	0.0516	105	75	125	0.115	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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_210609A

Sample ID: **ICV-210609**	Batch ID: **R115738**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS4_210609A**	Analysis Date: **6/9/2021 10:34:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.102	0.0300	0.100	0	102	90	110			
Calcium	2.34	0.300	2.50	0	93.5	90	110			

Sample ID: **LCVL-210609**	Batch ID: **R115738**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_210609A**	Analysis Date: **6/9/2021 10:48:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0216	0.0300	0.0200	0	108	80	120			
Calcium	0.0810	0.300	0.100	0	81.0	80	120			

Sample ID: **CCV1-210609**	Batch ID: **R115738**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_210609A**	Analysis Date: **6/9/2021 12:09:00 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	4.78	0.300	5.00	0	95.6	90	110			

Sample ID: **CCV2-210609**	Batch ID: **R115738**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_210609A**	Analysis Date: **6/9/2021 12:32:00 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	4.76	0.300	5.00	0	95.2	90	110			

Sample ID: **CCV3-210609**	Batch ID: **R115738**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_210609A**	Analysis Date: **6/9/2021 12:44:00 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			

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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_210428A

Sample ID: **DCS2-100323**	Batch ID: **100323**	TestNo: **SW6020B**		Units: **mg/L**	
SampType: **DCS2**	Run ID: **ICP-MS5_210428A**	Analysis Date: **4/28/2021 10:53:00 AM**		Prep Date: **4/27/2021**	

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.302	0.300	0.300	0	101	70	130	0	0	

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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_210609A

The QC data in batch 100848 applies to the following samples: 2106027-01A, 2106027-02A, 2106027-03A, 2106027-04A, 2106027-05A, 2106027-06A, 2106027-07A, 2106027-08A, 2106027-09A, 2106027-10A

Sample ID: **MB-100848**	Batch ID: **100848**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 10:42:00 AM**	Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	<0.100	0.300								

Sample ID: **LCS-100848**	Batch ID: **100848**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **LCS**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 10:44:00 AM**	Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.96	0.300	5.00	0	99.3	80	120			

Sample ID: **LCSD-100848**	Batch ID: **100848**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **LCSD**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 10:47:00 AM**	Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.88	0.300	5.00	0	97.5	80	120	1.78	15	

Sample ID: **2106027-04A SD**	Batch ID: **100848**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **SD**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 10:55:00 AM**	Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	2.45	1.50	0	2.37				3.47	20	

Sample ID: **2106027-04A PDS**	Batch ID: **100848**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **PDS**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 11:20:00 AM**	Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	7.04	0.300	5.00	2.37	93.5	75	125			

Sample ID: **2106027-04A MS**	Batch ID: **100848**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **MS**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 11:23:00 AM**	Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	7.17	0.300	5.00	2.37	96.0	75	125			

Sample ID: **2106027-04A MSD**	Batch ID: **100848**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **MSD**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 11:26:00 AM**	Prep Date: **6/8/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	7.39	0.300	5.00	2.37	101	75	125	3.11	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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_210609A

Sample ID: **ICV-210609**	Batch ID: **R115743**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 10:28:00 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-210609**	Batch ID: **R115743**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 10:34:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.105	0.300	0.100	0	105	80	120			

Sample ID: **CCV1-210609**	Batch ID: **R115743**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 11:28:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.94	0.300	5.00	0	98.7	90	110			

Sample ID: **CCV2-210609**	Batch ID: **R115743**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS5_210609A**	Analysis Date: **6/9/2021 11:58:00 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.97	0.300	5.00	0	99.5	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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_210527A

Sample ID: **DCS3-100738** Batch ID: **100738** TestNo: **E300** Units: **mg/L**
SampType: **DCS3** Run ID: **IC2_210527A** Analysis Date: **5/27/2021 4:13:05 PM** Prep Date: **5/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	1.25	1.00	1.000	0	125	70	130	0	0	
Fluoride	0.408	0.400	0.4000	0	102	70	130	0	0	
Sulfate	3.03	3.00	3.000	0	101	70	130	0	0	

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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_210607A

The QC data in batch 100841 applies to the following samples: 2106027-01B, 2106027-02B, 2106027-03B, 2106027-04B, 2106027-05B, 2106027-06B, 2106027-07B, 2106027-08B, 2106027-09B, 2106027-10B

Sample ID: **MB-100841** Batch ID: **100841** TestNo: **E300** Units: **mg/L**
SampType: **MBLK** Run ID: **IC2_210607A** Analysis Date: **6/7/2021 11:03:30 AM** Prep Date: **6/7/2021**

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-100841** Batch ID: **100841** TestNo: **E300** Units: **mg/L**
SampType: **LCSD** Run ID: **IC2_210607A** Analysis Date: **6/7/2021 11:35:30 AM** Prep Date: **6/7/2021**

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	0.036	20	
Fluoride	3.91	0.400	4.000	0	97.8	90	110	0.163	20	
Sulfate	29.5	3.00	30.00	0	98.2	90	110	0.100	20	

Sample ID: **LCS-100841** Batch ID: **100841** TestNo: **E300** Units: **mg/L**
SampType: **LCS** Run ID: **IC2_210607A** Analysis Date: **6/7/2021 12:04:59 PM** Prep Date: **6/7/2021**

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	3.92	0.400	4.000	0	97.9	90	110			
Sulfate	29.5	3.00	30.00	0	98.3	90	110			

Sample ID: **2106027-02BMS** Batch ID: **100841** TestNo: **E300** Units: **mg/L**
SampType: **MS** Run ID: **IC2_210607A** Analysis Date: **6/7/2021 4:53:08 PM** Prep Date: **6/7/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	218	10.0	200.0	18.28	99.8	90	110			
Fluoride	201	4.00	200.0	0	101	90	110			
Sulfate	536	30.0	200.0	350.2	92.7	90	110			

Sample ID: **2106027-02BMSD** Batch ID: **100841** TestNo: **E300** Units: **mg/L**
SampType: **MSD** Run ID: **IC2_210607A** Analysis Date: **6/7/2021 5:09:08 PM** Prep Date: **6/7/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	218	10.0	200.0	18.28	99.9	90	110	0.045	20	
Fluoride	202	4.00	200.0	0	101	90	110	0.333	20	
Sulfate	536	30.0	200.0	350.2	93.0	90	110	0.117	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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_210607A

Sample ID: **ICV-210607**	Batch ID: **R115719**	TestNo: **E300**	Units: **mg/L**
SampType: **ICV**	Run ID: **IC2_210607A**	Analysis Date: **6/7/2021 10:31:30 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	9.91	0.400	10.00	0	99.1	90	110			
Sulfate	77.7	3.00	75.00	0	104	90	110			

Sample ID: **CCV1-210607**	Batch ID: **R115719**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC2_210607A**	Analysis Date: **6/7/2021 3:41:45 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.25	1.00	10.00	0	92.5	90	110			
Fluoride	3.87	0.400	4.000	0	96.7	90	110			
Sulfate	29.3	3.00	30.00	0	97.7	90	110			

Sample ID: **CCV2-210607**	Batch ID: **R115719**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC2_210607A**	Analysis Date: **6/7/2021 6:29:08 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.37	1.00	10.00	0	93.7	90	110			
Fluoride	3.96	0.400	4.000	0	99.0	90	110			
Sulfate	29.9	3.00	30.00	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 NELAP certified

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

ANALYTICAL QC SUMMARY REPORT

RunID: WC_210604A

The QC data in batch 100830 applies to the following samples: 2106027-01B, 2106027-02B, 2106027-03B, 2106027-04B, 2106027-05B, 2106027-06B, 2106027-07B, 2106027-08B, 2106027-09B, 2106027-10B

Sample ID: **MB-100830** Batch ID: **100830** TestNo: **M2540C** Units: **mg/L**
SampType: **MBLK** Run ID: **WC_210604A** Analysis Date: **6/4/2021 5:00:00 PM** Prep Date: **6/4/2021**

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-100830** Batch ID: **100830** TestNo: **M2540C** Units: **mg/L**
SampType: **LCS** Run ID: **WC_210604A** Analysis Date: **6/4/2021 5:00:00 PM** Prep Date: **6/4/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	751	10.0	745.6	0	101	90	113			

Sample ID: **2106009-01A-DUP** Batch ID: **100830** TestNo: **M2540C** Units: **mg/L**
SampType: **DUP** Run ID: **WC_210604A** Analysis Date: **6/4/2021 5:00:00 PM** Prep Date: **6/4/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1110	50.0	0	1115				0.901	5	

Sample ID: **2106009-02A-DUP** Batch ID: **100830** TestNo: **M2540C** Units: **mg/L**
SampType: **DUP** Run ID: **WC_210604A** Analysis Date: **6/4/2021 5:00:00 PM** Prep Date: **6/4/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1200	50.0	0	1235				2.87	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 NELAP certified

DHL Analytical, Inc.

Date: *11-Jun-21*

CLIENT: Golder
Work Order: 2106027
Project: Luminant - MLSES CCR PDP-5

MQL SUMMARY REPORT

TestNo: E300	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Chloride	0.300	1.00
Fluoride	0.100	0.400
Sulfate	1.00	3.00

TestNo: SW6020B	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Boron	0.0100	0.0300
Calcium	0.100	0.300

TestNo: M2540C	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Total Dissolved Solids (Residue, Filt	10.0	10.0

Qualifiers: MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP

November 02, 2021

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FAX (512) 671-3446

Order No.: 2110215

RE: Luminant - MLSES PDP 5

Dear Will Vienne:

DHL Analytical, Inc. received 11 sample(s) on 10/26/2021 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP 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: T104704211-21-27

Table of Contents

DHL ANALYTICAL
2300 Double Creek Dr. Round Rock, TX 78664
Phone 512.388.8222
Web: **www.dhlanalytical.com**
Email: **login@dhlanalytical.com**

CHAIN-OF-CUSTODY

CLIENT: GOLDER
ADDRESS: TEXARKANA, TX
PHONE: 512-695-8609 EMAIL:
DATA REPORTED TO: KEITH STARCEK
ADDITIONAL REPORT COPIES TO:

DATE: 10-25-21
PO#:
PROJECT LOCATION OR NAME: LUMINANT-MLSES PDP 5
CLIENT PROJECT # 19116344 COLLECTOR: JOHN BRAYTON

LABORATORY USE ONLY
DHL WORKORDER #: 2110215

Authorize 5% surcharge for TRRP report? ☐ Yes ☐ No

Lab Use Only — W=WATER, L=LIQUID, S=SOIL, SO=SOLID, SE=SEDIMENT, P=PAINT, SL=SLUDGE

Field Sample I.D.	DHL Lab #	Collection Date	Collection Time	Matrix	Container Type	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4	NaOH ☐ Zn Acetate ☐	ICE ☒ UNPRESERVED ☐	ANALYSES	BTEX ☐ MTBE ☐ [METHOD 8260]	TPH 1005 ☐ TPH 1006 ☐ HOLD 1006 ☐	GRO 8015 ☐ DRO 8015 ☐	VOC 8260 ☐ VOC 624.1 ☐	SVOC 8270 ☐ SVOC 625.1 ☐	PAH 8270 ☐ HOLD PAH ☐	PEST 8270 ☐ 625.1 ☐ O-P PEST 8270 ☐	PCB 8082 ☐ 608.3 ☐ PCB 8270 ☐ 625.1 ☐	HERB 8321 ☐ T PHOS ☐ AMMONIA ☐	METALS 6020 ☐ 200.8 ☐ DISS. METALS ☐	RCRA 8 ☐ TX11 ☐	pH ☐ HEX CHROM ☐ ALKALINITY ☒ COD ☐	ANIONS 300 ☐ 9056 ☐	TCLP-SVOC ☐ VOC ☐ PEST ☐ HERB ☐	TCLP-METALS ☐ RCRA 8 ☐ TX-11 ☐ Pb ☐	RCI ☐ IGN ☐ DGAS ☐ OIL&GREASE ☐	TDS ☒ TSS ☐ % MOIST ☐ CYANIDE ☐	total metals	Cl, SO_4		FIELD NOTES
MW-17A	01	10-21-21	1535	W	P	2		X			X													X					X	X	X		Ca, Cd, Al, Fe,
MW-17B	02	10-21-21	1620	W	P	2		X			X													X					X	X	X		Mg, Mn, Ni, Se,
MW-6R	03	10-21-21	1705	W	P	2		X			X													X					X	X	X		Na, B, K
MW-5	04	10-22-21	0755	W	P	2		X			X													X					X	X	X		
MW-15A	05	10-22-21	0845	W	P	2		X			X													X					X	X	X		
MW-16A	06	10-22-21	0935	W	P	2		X			X													X					X	X	X		
MW-16B	07	10-22-21	1025	W	P	2		X			X													X					X	X	X		
MW-20A	08	10-22-21	1130	W	P	2		X			X													X					X	X	X		
MW-20B	09	10-22-21	1230	W	P	2		X			X													X					X	X	X		
MW-1	10	10-22-21	1340	W	P	2		X			X													X					X	X	X		
DUP-1	11	10-22-21	1340	W	P	2		X			X													X					X	X	X		

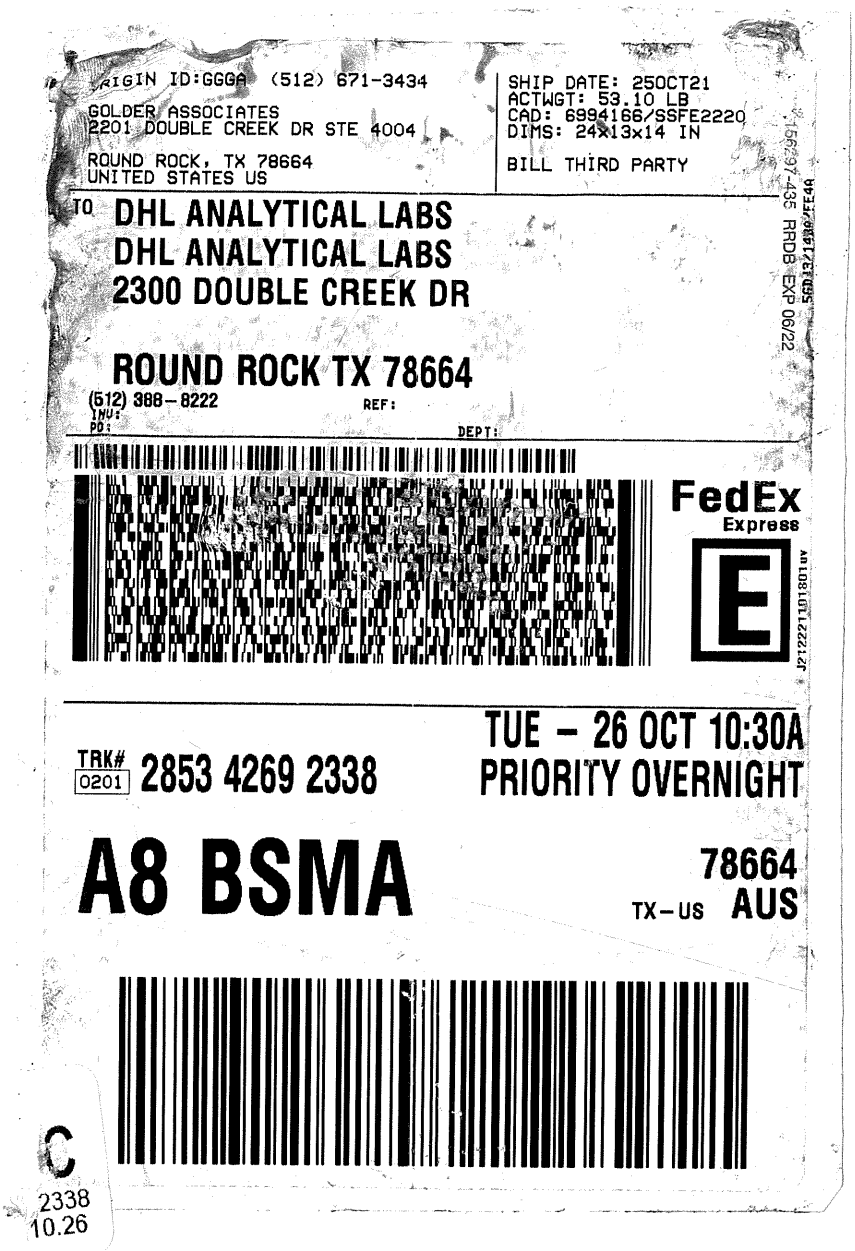
Relinquished By: (Sign)	DATE/TIME	Received by:
[signature]	10-25-21 1830	FedEx
FedEx	10/26/21 0958	[signature]

TURN AROUND TIME (CALL FIRST FOR RUSH)
RUSH-1 DAY☐ RUSH-2 DAY☐ RUSH-3 DAY☐
NORMAL ☒ OTHER ☐
DUE DATE [X] ☐

LABORATORY USE ONLY
RECEIVING TEMP (°C): 3.0 THERM #: 78
CUSTODY SEALS: ☐ BROKEN ☒ INTACT ☐ NOT USED
CARRIER: ☐ LSO ☒ FEDEX ☐ UPS ☐ COURIER ☐ OTHER ☐ HAND DELIVERED

☐ **DHL DISPOSAL @ 5.00 each** ☐ **Return**

DHL COC REV 3 | MAR 2021



ORIGIN ID:GGGA (512) 671-3434
GOLDER ASSOCIATES
2201 DOUBLE CREEK DR STE 4004
ROUND ROCK, TX 78664
UNITED STATES US

SHIP DATE: 25OCT21
ACTWGT: 53.10 LB
CAD: 6994166/SSFE2220
DIMS: 24x13x14 IN
BILL THIRD PARTY

TO DHL ANALYTICAL LABS
DHL ANALYTICAL LABS
2300 DOUBLE CREEK DR
ROUND ROCK TX 78664
(512) 388-8222 REF:
INV:
PO: DEPT:

FedEx Express

TRK# 0201 2853 4269 2338
TUE - 26 OCT 10:30A
PRIORITY OVERNIGHT

A8 BSMA
78664
TX-US AUS

C
2338
10.26

CUSTODY SEAL

DATE 10-25-21

SIGNATURE

DHL ANALYTICAL

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **Golder** Date Received: **10/26/2021**

Work Order Number **2110215** Received by: **EL**

Checklist completed by: Signature 10/26/2021 Date Reviewed by SH Initials 10/26/2021 Date

Carrier name: FedEx 1day

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping 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 ☐	**3.0** °C
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH<2 acceptable upon receipt?	Yes ☑	No ☐	NA ☐ LOT # 13171
	Adjusted? No		Checked by R.A.
Water - ph>9 (S) or ph>10 (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: _____

v

Laboratory Name: DHL Analytical, Inc.

Laboratory Review Checklist: Reportable Data

Project Name: Luminant - MLSES PDP 5	**LRC Date:** 11/2/2021
Reviewer Name: Angie O'Donnell	**Laboratory Work Order: 2110215**
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
		Chain-of-Custody (C-O-C)					
R1	OI	**1)** Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	**X**				**R1-01**
		2) Were all departures from standard conditions described in an exception report?			**X**		
R2	OI	**Sample and Quality Control (QC) Identification**					
		1) Are all field sample ID numbers cross-referenced to the laboratory ID numbers?	**X**				
		2) Are all laboratory ID numbers cross-referenced to the corresponding QC data?	**X**				
R3	OI	**Test Reports**					
		1) Were all samples prepared and analyzed within holding times?	**X**				
		2) Other than those results < MQL, were all other raw values bracketed by calibration standards?	**X**				
		3) Were calculations checked by a peer or supervisor?	**X**				
		4) Were all analyte identifications checked by a peer or supervisor?	**X**				
		5) Were sample detection limits reported for all analytes not detected?	**X**				
		6) Were all results for soil and sediment samples reported on a dry weight basis?			**X**		
		7) Were % moisture (or solids) reported for all soil and sediment samples?			**X**		
		8) Were bulk soils/solids samples for volatile analysis extracted with methanol per EPA Method 5035?			**X**		
		9) If required for the project, TICs reported?			**X**		
R4	O	**Surrogate Recovery Data**					
		1) Were surrogates added prior to extraction?			**X**		
		2) Were surrogate percent recoveries in all samples within the laboratory QC limits?			**X**		
R5	OI	**Test Reports/Summary Forms for Blank Samples**					
		1) Were appropriate type(s) of blanks analyzed?	**X**				
		2) Were blanks analyzed at the appropriate frequency?	**X**				
		3) Where method blanks taken through the entire analytical process, including preparation and, if applicable, cleanup procedures?	**X**				
		4) Were blank concentrations < MDL?	**X**				
		5) For analyte(s) detected in a blank sample, was the concentration, unadjusted for sample specific factors, in all associated field samples, **greater** than 10 times the concentration in the blank sample?			**X**		
R6	OI	**Laboratory Control Samples (LCS):**					
		1) Were all COCs included in the LCS?	**X**				
		2) Was each LCS taken through the entire analytical procedure, including prep and cleanup steps?	**X**				
		3) Were LCSs analyzed at the required frequency?	**X**				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC limits?	**X**				
		5) Does the detectability data document the laboratory's capability to detect the COCs at the MDL used to calculate the SDLs?	**X**				
		6) Was the LCSD RPD within QC limits (if applicable)?	**X**				
R7	OI	**Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data**					
		1) Were the project/method specified analytes included in the MS and MSD?	**X**				
		2) Were MS/MSD analyzed at the appropriate frequency?	**X**				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC limits?		**X**			**R7-03**
		4) Were MS/MSD RPDs within laboratory QC limits?	**X**				
R8	OI	**Analytical Duplicate Data**					
		1) Were appropriate analytical duplicates analyzed for each matrix?	**X**				
		2) Were analytical duplicates analyzed at the appropriate frequency?	**X**				
		3) Were RPDs or relative standard deviations within the laboratory QC limits?	**X**				
R9	OI	**Method Quantitation Limits (MQLs):**					
		1) Are the MQLs for each method analyte included in the laboratory data package?	**X**				
		2) Do the MQLs correspond to the concentration of the lowest non-zero calibration standard?	**X**				
		3) Are unadjusted MQLs and DCSs included in the laboratory data package?	**X**				
R10	OI	**Other Problems/Anomalies**					
		1) Are all known problems/anomalies/special conditions noted in this LRC and ER?	**X**				
		2) Was applicable and available technology used to lower the SDL to minimize the matrix interference affects on the sample results?	**X**				
		3) Is the laboratory NELAC-accredited under the Texas Laboratory Accreditation Program for the analytes, matrices and methods associated with this laboratory data package?	**X**				

Laboratory Name: DHL Analytical, Inc.

Laboratory Review Checklist (continued): Supporting Data

Project Name: Luminant - MLSES PDP 5	**LRC Date:** 11/2/2021
Reviewer Name: Angie O'Donnell	**Laboratory Work Order: 2110215**
Prep Batch Number(s): See Prep Dates Report	**Run Batch:** See Analytical Dates Report

#[1]	A[2]	Description	Yes	No	NA[3]	NR[4]	ER#[5]
S1	OI	**Initial Calibration (ICAL)**					
		1) Were response factors and/or relative response factors for each analyte within QC limits?	X				
		2) Were percent RSDs or correlation coefficient criteria met?	X				
		3) Was the number of standards recommended in the method used for all analytes?	X				
		4) Were all points generated between the lowest and highest standard used to calculate the curve?	X				
		5) Are ICAL data available for all instruments used?	X				
		6) Has the initial calibration curve been verified using an appropriate second source standard?	X				
S2	OI	**Initial and Continuing calibration Verification (ICCV and CCV) and Continuing Calibration blank (CCB):**					
		1) Was the CCV analyzed at the method-required frequency?	X				
		2) Were percent differences for each analyte within the method-required QC limits?	X				
		3) Was the ICAL curve verified for each analyte?	X				
		4) Was the absolute value of the analyte concentration in the inorganic CCB < MDL?	X				
S3	O	**Mass Spectral Tuning:**					
		1) Was the appropriate compound for the method used for tuning?	X				
		2) Were ion abundance data within the method-required QC limits?	X				
S4	O	**Internal Standards (IS):**					
		1) Were IS area counts and retention times within the method-required QC limits?	X				
S5	OI	**Raw Data (NELAC Section 5.5.10)**					
		1) Were the raw data (for example, chromatograms, spectral data) reviewed by an analyst?	X				
		2) Were data associated with manual integrations flagged on the raw data?	X				
S6	O	**Dual Column Confirmation**					
		1) Did dual column confirmation results meet the method-required QC?			X		
S7	O	**Tentatively Identified Compounds (TICs):**					
		1) If TICs were requested, were the mass spectra and TIC data subject to appropriate checks?			X		
S8	I	**Interference Check Sample (ICS) Results:**					
		1) Were percent recoveries within method QC limits?	X				
S9	I	**Serial Dilutions, Post Digestion Spikes, and Method of Standard Additions**					
		1) Were percent differences, recoveries, and the linearity within the QC limits specified in the method?	X				
S10	OI	**Method Detection Limit (MDL) Studies**					
		1) Was a MDL study performed for each reported analyte?	X				
		2) Is the MDL either adjusted or supported by the analysis of DCSs?	X				
S11	OI	**Proficiency Test Reports:**					
		1) Was the lab's performance acceptable on the applicable proficiency tests or evaluation studies?	X				
S12	OI	**Standards Documentation**					
		1) Are all standards used in the analyses NIST-traceable or obtained from other appropriate sources?	X				
S13	OI	**Compound/Analyte Identification Procedures**					
		1) Are the procedures for compound/analyte identification documented?	X				
S14	OI	**Demonstration of Analyst Competency (DOC)**					
		1) Was DOC conducted consistent with NELAC Chapter 5 – Appendix C?	X				
		2) Is documentation of the analyst's competency up-to-date and on file?	X				
S15	OI	**Verification/Validation Documentation for Methods** (NELAC Chapter 5)					
		1) Are all the methods used to generate the data documented, verified, and validated, where applicable?	X				
S16	OI	**Laboratory Standard Operating Procedures (SOPs):**					
		1) Are laboratory SOPs current and on file for each method performed?	X				

1 Items identified by the letter "R" should be included in the laboratory data package submitted to the TCEQ in the TRRP-required report(s). Items identified by the letter "S" should be retained and made available upon request for the appropriate retention period.
2 O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).
3 NA = Not applicable.
4 NR = Not Reviewed.
5 ER# = Exception Report identification number (an Exception Report should be completed for an item if "NR" or "No" is checked).

Laboratory Data Package Signature Page – RG-366/TRRP-13

This data package consists of:

This signature page, the laboratory review checklist, and the following reportable data:

R1 Field chain-of-custody documentation;
R2 Sample identification cross-reference;
R3 Test reports (analytical data sheets) for each environmental sample that includes:
  a) Items consistent with NELAC Chapter 5,
  b) dilution factors,
  c) preparation methods,
  d) cleanup methods, and
  e) if required for the project, tentatively identified compounds (TICs).
R4 Surrogate recovery data including:
  a) Calculated recovery (%R), and
  b) The laboratory's surrogate QC limits.
R5 Test reports/summary forms for blank samples;
R6 Test reports/summary forms for laboratory control samples (LCSs) including:
  a) LCS spiking amounts,
  b) Calculated %R for each analyte, and
  c) The laboratory's LCS QC limits.
R7 Test reports for project matrix spike/matrix spike duplicates (MS/MSDs) including:
  a) Samples associated with the MS/MSD clearly identified,
  b) MS/MSD spiking amounts,
  c) Concentration of each MS/MSD analyte measured in the parent and spiked samples,
  d) Calculated %Rs and relative percent differences (RPDs), and
  e) The laboratory's MS/MSD QC limits
R8 Laboratory analytical duplicate (if applicable) recovery and precision:
  a) The amount of analyte measured in the duplicate,
  b) The calculated RPD, and
  c) The laboratory's QC limits for analytical duplicates.
R9 List of method quantitation limits (MQLs) and detectability check sample results for each analyte for each method and matrix;
R10 Other problems or anomalies.

The Exception Report for each "No" or "Not Reviewed (NR)" item in the Laboratory Review Checklist and for each analyte, matrix, and method for which the laboratory is not accredited under the Texas Laboratory Accreditation Program.

Release Statement: I am responsible for the release of this laboratory data package. This laboratory is accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted in the Exception Reports. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory in the Exception Reports. By my signature below, I affirm to the best of my knowledge that all problems/anomalies observed by the laboratory have been identified in the Laboratory Review Checklist, and no information or data affecting the quality of the data has been knowingly withheld.

This laboratory was last inspected by TCEQ on February 23-26, 2021. Any findings affecting the data in this laboratory data package are noted in the Exception Reports herein. The official signing the cover page of the report in which these data are used is responsible for releasing this data package and is by signature affirming the above release statement is true.

Name: John DuPont
Official Title: General Manager

Signature

11/02/21

Date

Name: Dr. Derhsing Luu
Official Title: Technical Director

DHL Analytical, Inc. **Date:** *02-Nov-21*

CLIENT: Golder
Project: Luminant - MLSES PDP 5
Lab Order: 2110215

CASE NARRATIVE

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

Method SW6020B - Metals Analysis
Method E300 - Anions Analysis
Method M2540C - TDS Analysis
Method M2320 B - Alkalinity Analysis

Exception Report R1-01

The samples were received and log-in performed on 10/26/2021. A total of 11 samples were received and analyzed. The samples arrived in good condition and were properly packaged.

Exception Report R7-03

For Anions Analysis, the recovery of Chloride for (each) the Matrix Spike and Matrix Spike Duplicate(s) (2110242-02, -03 MS/MSD) was below the method control limits. These are flagged accordingly in the QC Summary Report. This anion was within method control limits in the associated LCS. No further corrective action was taken.

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT: Golder
Project: Luminant - MLSES PDP 5
Lab Order: 2110215

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
2110215-01	MW-17A		10/21/21 03:35 PM	10/26/2021
2110215-02	MW-17B		10/21/21 04:20 PM	10/26/2021
2110215-03	MW-6R		10/21/21 05:05 PM	10/26/2021
2110215-04	MW-5		10/22/21 07:55 AM	10/26/2021
2110215-05	MW-15A		10/22/21 08:45 AM	10/26/2021
2110215-06	MW-16A		10/22/21 09:35 AM	10/26/2021
2110215-07	MW-16B		10/22/21 10:25 AM	10/26/2021
2110215-08	MW-20A		10/22/21 11:30 AM	10/26/2021
2110215-09	MW-20B		10/22/21 12:30 PM	10/26/2021
2110215-10	MW-1		10/22/21 01:40 PM	10/26/2021
2110215-11	DUP-1		10/22/21 01:40 PM	10/26/2021

Lab Order: 2110215
Client: Golder
Project: Luminant - MLSES PDP 5

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2110215-01A	MW-17A	10/21/21 03:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-17A	10/21/21 03:35 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-01B	MW-17A	10/21/21 03:35 PM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-17A	10/21/21 03:35 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-17A	10/21/21 03:35 PM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-02A	MW-17B	10/21/21 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-17B	10/21/21 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-02B	MW-17B	10/21/21 04:20 PM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-17B	10/21/21 04:20 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-17B	10/21/21 04:20 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-17B	10/21/21 04:20 PM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-03A	MW-6R	10/21/21 05:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-6R	10/21/21 05:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-6R	10/21/21 05:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-03B	MW-6R	10/21/21 05:05 PM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-6R	10/21/21 05:05 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-6R	10/21/21 05:05 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-6R	10/21/21 05:05 PM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-04A	MW-5	10/22/21 07:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-5	10/22/21 07:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-5	10/22/21 07:55 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-04B	MW-5	10/22/21 07:55 AM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-5	10/22/21 07:55 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-5	10/22/21 07:55 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-5	10/22/21 07:55 AM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-05A	MW-15A	10/22/21 08:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-15A	10/22/21 08:45 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-05B	MW-15A	10/22/21 08:45 AM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572

Lab Order: 2110215
Client: Golder
Project: Luminant - MLSES PDP 5

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2110215-05B	MW-15A	10/22/21 08:45 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-15A	10/22/21 08:45 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-15A	10/22/21 08:45 AM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-06A	MW-16A	10/22/21 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-16A	10/22/21 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-16A	10/22/21 09:35 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-06B	MW-16A	10/22/21 09:35 AM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-16A	10/22/21 09:35 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-16A	10/22/21 09:35 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-16A	10/22/21 09:35 AM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-07A	MW-16B	10/22/21 10:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-16B	10/22/21 10:25 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-07B	MW-16B	10/22/21 10:25 AM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-16B	10/22/21 10:25 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-16B	10/22/21 10:25 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-16B	10/22/21 10:25 AM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-08A	MW-20A	10/22/21 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-20A	10/22/21 11:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-08B	MW-20A	10/22/21 11:30 AM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-20A	10/22/21 11:30 AM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-20A	10/22/21 11:30 AM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-09A	MW-20B	10/22/21 12:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-20B	10/22/21 12:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-20B	10/22/21 12:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-09B	MW-20B	10/22/21 12:30 PM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-20B	10/22/21 12:30 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-20B	10/22/21 12:30 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-20B	10/22/21 12:30 PM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570

Lab Order: 2110215
Client: Golder
Project: Luminant - MLSES PDP 5

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2110215-10A	MW-1	10/22/21 01:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-1	10/22/21 01:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	MW-1	10/22/21 01:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-10B	MW-1	10/22/21 01:40 PM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	MW-1	10/22/21 01:40 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-1	10/22/21 01:40 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	MW-1	10/22/21 01:40 PM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570
2110215-11A	DUP-1	10/22/21 01:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	DUP-1	10/22/21 01:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
	DUP-1	10/22/21 01:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/27/21 09:40 AM	102576
2110215-11B	DUP-1	10/22/21 01:40 PM	Aqueous	M2320 B	Alkalinity Preparation	10/27/21 09:17 AM	102572
	DUP-1	10/22/21 01:40 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	DUP-1	10/22/21 01:40 PM	Aqueous	E300	Anion Preparation	10/28/21 10:01 AM	102594
	DUP-1	10/22/21 01:40 PM	Aqueous	M2540C	TDS Preparation	10/27/21 08:55 AM	102570

Lab Order: 2110215
Client: Golder
Project: Luminant - MLSES PDP 5

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2110215-01A	MW-17A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:03 AM	ICP-MS5_211028A
	MW-17A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 02:08 PM	ICP-MS4_211028A
2110215-01B	MW-17A	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 12:07 PM	TITRATOR_211027A
	MW-17A	Aqueous	E300	Anions by IC method - Water	102594	1	10/28/21 11:04 PM	IC2_211028A
	MW-17A	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-02A	MW-17B	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 02:12 PM	ICP-MS4_211028A
	MW-17B	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:15 AM	ICP-MS5_211028A
2110215-02B	MW-17B	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 12:11 PM	TITRATOR_211027A
	MW-17B	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 04:24 PM	IC2_211028A
	MW-17B	Aqueous	E300	Anions by IC method - Water	102594	1	10/28/21 11:20 PM	IC2_211028A
	MW-17B	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-03A	MW-6R	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	50	10/28/21 02:14 PM	ICP-MS4_211028A
	MW-6R	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:18 AM	ICP-MS5_211028A
	MW-6R	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	50	10/28/21 12:18 PM	ICP-MS5_211028A
2110215-03B	MW-6R	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 12:18 PM	TITRATOR_211027A
	MW-6R	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 12:40 AM	IC2_211028A
	MW-6R	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 04:40 PM	IC2_211028A
	MW-6R	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-04A	MW-5	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 02:52 PM	ICP-MS4_211028A
	MW-5	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:21 AM	ICP-MS5_211028A
	MW-5	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	5	10/28/21 12:21 PM	ICP-MS5_211028A
2110215-04B	MW-5	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 12:42 PM	TITRATOR_211027A
	MW-5	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 04:56 PM	IC2_211028A
	MW-5	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 12:56 AM	IC2_211028A
	MW-5	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-05A	MW-15A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	5	10/28/21 02:18 PM	ICP-MS4_211028A
	MW-15A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:23 AM	ICP-MS5_211028A
2110215-05B	MW-15A	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 12:45 PM	TITRATOR_211027A

Lab Order: 2110215
Client: Golder
Project: Luminant - MLSES PDP 5

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2110215-05B	MW-15A	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 05:12 PM	IC2_211028A
	MW-15A	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 01:12 AM	IC2_211028A
	MW-15A	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-06A	MW-16A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	5	10/28/21 02:20 PM	ICP-MS4_211028A
	MW-16A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:26 AM	ICP-MS5_211028A
	MW-16A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	20	10/28/21 12:26 PM	ICP-MS5_211028A
2110215-06B	MW-16A	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 01:02 PM	TITRATOR_211027A
	MW-16A	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 01:28 AM	IC2_211028A
	MW-16A	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 05:28 PM	IC2_211028A
	MW-16A	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-07A	MW-16B	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 02:22 PM	ICP-MS4_211028A
	MW-16B	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:28 AM	ICP-MS5_211028A
2110215-07B	MW-16B	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 01:05 PM	TITRATOR_211027A
	MW-16B	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 01:44 AM	IC2_211028A
	MW-16B	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 05:44 PM	IC2_211028A
	MW-16B	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-08A	MW-20A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:44 AM	ICP-MS5_211028A
	MW-20A	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 02:24 PM	ICP-MS4_211028A
2110215-08B	MW-20A	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 01:08 PM	TITRATOR_211027A
	MW-20A	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 02:00 AM	IC2_211028A
	MW-20A	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-09A	MW-20B	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	5	10/28/21 12:28 PM	ICP-MS5_211028A
	MW-20B	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 02:26 PM	ICP-MS4_211028A
	MW-20B	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:47 AM	ICP-MS5_211028A
2110215-09B	MW-20B	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 01:13 PM	TITRATOR_211027A
	MW-20B	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 06:00 PM	IC2_211028A
	MW-20B	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 02:16 AM	IC2_211028A
	MW-20B	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C

Lab Order: 2110215
Client: Golder
Project: Luminant - MLSES PDP 5

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2110215-10A	MW-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 02:28 PM	ICP-MS4_211028A
	MW-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:49 AM	ICP-MS5_211028A
	MW-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	5	10/28/21 12:31 PM	ICP-MS5_211028A
2110215-10B	MW-1	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 01:18 PM	TITRATOR_211027A
	MW-1	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 06:16 PM	IC2_211028A
	MW-1	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 02:32 AM	IC2_211028A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C
2110215-11A	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 02:48 PM	ICP-MS4_211028A
	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	1	10/28/21 11:52 AM	ICP-MS5_211028A
	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102576	5	10/28/21 12:33 PM	ICP-MS5_211028A
2110215-11B	DUP-1	Aqueous	M2320 B	Alkalinity	102572	1	10/27/21 01:36 PM	TITRATOR_211027A
	DUP-1	Aqueous	E300	Anions by IC method - Water	102594	10	10/28/21 06:32 PM	IC2_211028A
	DUP-1	Aqueous	E300	Anions by IC method - Water	102594	1	10/29/21 02:48 AM	IC2_211028A
	DUP-1	Aqueous	M2540C	Total Dissolved Solids	102570	1	10/27/21 03:05 PM	WC_211027C

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-17A
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-01
Project No:	19116344	**Collection Date:**	10/21/21 03:35 PM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	0.0350	0.0100	0.0300		mg/L	1	10/28/21 11:03 AM
Boron	0.380	0.0100	0.0300		mg/L	1	10/28/21 02:08 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:03 AM
Calcium	3.66	0.100	0.300		mg/L	1	10/28/21 11:03 AM
Iron	0.0734	0.0300	0.100	J	mg/L	1	10/28/21 11:03 AM
Magnesium	3.42	0.100	0.300		mg/L	1	10/28/21 11:03 AM
Manganese	0.0638	0.00300	0.0100		mg/L	1	10/28/21 11:03 AM
Nickel	0.00907	0.00300	0.0100	J	mg/L	1	10/28/21 11:03 AM
Potassium	2.13	0.100	0.300		mg/L	1	10/28/21 11:03 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:03 AM
Sodium	14.6	0.100	0.300		mg/L	1	10/28/21 11:03 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	9.13	0.300	1.00		mg/L	1	10/28/21 11:04 PM
Sulfate	36.0	1.00	3.00		mg/L	1	10/28/21 11:04 PM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	14.1	10.0	20.0	J	mg/L @ pH 4.51	1	10/27/21 12:07 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.51	1	10/27/21 12:07 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.51	1	10/27/21 12:07 PM
Alkalinity, Total (As CaCO3)	14.1	10.0	20.0	J	mg/L @ pH 4.51	1	10/27/21 12:07 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	105	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

- ND - Not Detected at the SDL
- J - Analyte detected between SDL and RL
- B - Analyte detected in the associated Method Blank
- DF- Dilution Factor
- N - Parameter not NELAP certified
- See Final Page of Report for MQLs and MDLs
- S - Spike Recovery outside control limits
- C - Sample Result or QC discussed in Case Narrative
- RL - Reporting Limit (MQL adjusted for moisture and sample size)
- SDL - Sample Detection Limit
- E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-17B
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-02
Project No:	19116344	**Collection Date:**	10/21/21 04:20 PM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	<0.0100	0.0100	0.0300		mg/L	1	10/28/21 11:15 AM
Boron	0.532	0.0100	0.0300		mg/L	1	10/28/21 02:12 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:15 AM
Calcium	22.6	0.100	0.300		mg/L	1	10/28/21 11:15 AM
Iron	1.94	0.0300	0.100		mg/L	1	10/28/21 11:15 AM
Magnesium	16.8	0.100	0.300		mg/L	1	10/28/21 11:15 AM
Manganese	0.0465	0.00300	0.0100		mg/L	1	10/28/21 11:15 AM
Nickel	0.00626	0.00300	0.0100	J	mg/L	1	10/28/21 11:15 AM
Potassium	4.93	0.100	0.300		mg/L	1	10/28/21 11:15 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:15 AM
Sodium	21.1	0.100	0.300		mg/L	1	10/28/21 11:15 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	41.5	0.300	1.00		mg/L	1	10/28/21 11:20 PM
Sulfate	69.5	1.00	3.00		mg/L	1	10/28/21 11:20 PM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	56.6	10.0	20.0		mg/L @ pH 4.49	1	10/27/21 12:11 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.49	1	10/27/21 12:11 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.49	1	10/27/21 12:11 PM
Alkalinity, Total (As CaCO3)	56.6	20.0	20.0		mg/L @ pH 4.49	1	10/27/21 12:11 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	265	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-6R
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-03
Project No:	19116344	**Collection Date:**	10/21/21 05:05 PM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	0.0418	0.0100	0.0300		mg/L	1	10/28/21 11:18 AM
Boron	15.1	0.500	1.50		mg/L	50	10/28/21 02:14 PM
Cadmium	0.000614	0.000300	0.00100	J	mg/L	1	10/28/21 11:18 AM
Calcium	172	5.00	15.0		mg/L	50	10/28/21 12:18 PM
Iron	0.597	0.0300	0.100		mg/L	1	10/28/21 11:18 AM
Magnesium	47.1	5.00	15.0		mg/L	50	10/28/21 12:18 PM
Manganese	0.0280	0.00300	0.0100		mg/L	1	10/28/21 11:18 AM
Nickel	0.0314	0.00300	0.0100		mg/L	1	10/28/21 11:18 AM
Potassium	13.2	0.100	0.300		mg/L	1	10/28/21 11:18 AM
Selenium	0.00509	0.00200	0.00500		mg/L	1	10/28/21 11:18 AM
Sodium	175	5.00	15.0		mg/L	50	10/28/21 12:18 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	160	3.00	10.0		mg/L	10	10/28/21 04:40 PM
Sulfate	734	10.0	30.0		mg/L	10	10/28/21 04:40 PM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	134	10.0	20.0		mg/L @ pH 4.51	1	10/27/21 12:18 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.51	1	10/27/21 12:18 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.51	1	10/27/21 12:18 PM
Alkalinity, Total (As CaCO3)	134	20.0	20.0		mg/L @ pH 4.51	1	10/27/21 12:18 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	1460	50.0	50.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

ND - Not Detected at the SDL
J - Analyte detected between SDL and RL
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DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-5
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-04
Project No:	19116344	**Collection Date:**	10/22/21 07:55 AM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	0.0213	0.0100	0.0300	J	mg/L	1	10/28/21 11:21 AM
Boron	0.133	0.0100	0.0300		mg/L	1	10/28/21 02:52 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:21 AM
Calcium	79.1	0.500	1.50		mg/L	5	10/28/21 12:21 PM
Iron	16.7	0.150	0.500		mg/L	5	10/28/21 12:21 PM
Magnesium	20.8	0.100	0.300		mg/L	1	10/28/21 11:21 AM
Manganese	0.0656	0.00300	0.0100		mg/L	1	10/28/21 11:21 AM
Nickel	<0.00300	0.00300	0.0100		mg/L	1	10/28/21 11:21 AM
Potassium	3.08	0.100	0.300		mg/L	1	10/28/21 11:21 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:21 AM
Sodium	48.5	0.500	1.50		mg/L	5	10/28/21 12:21 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	34.1	0.300	1.00		mg/L	1	10/29/21 12:56 AM
Sulfate	<1.00	1.00	3.00		mg/L	1	10/29/21 12:56 AM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	363	10.0	20.0		mg/L @ pH 4.53	1	10/27/21 12:42 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.53	1	10/27/21 12:42 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.53	1	10/27/21 12:42 PM
Alkalinity, Total (As CaCO3)	363	20.0	20.0		mg/L @ pH 4.53	1	10/27/21 12:42 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	454	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

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DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-15A
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-05
Project No:	19116344	**Collection Date:**	10/22/21 08:45 AM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	0.240	0.0100	0.0300		mg/L	1	10/28/21 11:23 AM
Boron	0.553	0.0500	0.150		mg/L	5	10/28/21 02:18 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:23 AM
Calcium	16.1	0.100	0.300		mg/L	1	10/28/21 11:23 AM
Iron	0.226	0.0300	0.100		mg/L	1	10/28/21 11:23 AM
Magnesium	14.7	0.100	0.300		mg/L	1	10/28/21 11:23 AM
Manganese	0.00557	0.00300	0.0100	J	mg/L	1	10/28/21 11:23 AM
Nickel	0.0110	0.00300	0.0100		mg/L	1	10/28/21 11:23 AM
Potassium	3.65	0.100	0.300		mg/L	1	10/28/21 11:23 AM
Selenium	0.00611	0.00200	0.00500		mg/L	1	10/28/21 11:23 AM
Sodium	19.8	0.100	0.300		mg/L	1	10/28/21 11:23 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	12.8	0.300	1.00		mg/L	1	10/29/21 01:12 AM
Sulfate	118	1.00	3.00		mg/L	1	10/29/21 01:12 AM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	14.6	10.0	20.0	J	mg/L @ pH 4.5	1	10/27/21 12:45 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.5	1	10/27/21 12:45 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.5	1	10/27/21 12:45 PM
Alkalinity, Total (As CaCO3)	14.6	10.0	20.0	J	mg/L @ pH 4.5	1	10/27/21 12:45 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	237	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

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DF- Dilution Factor
N - Parameter not NELAP certified
See Final Page of Report for MQLs and MDLs
S - Spike Recovery outside control limits
C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-16A
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-06
Project No:	19116344	**Collection Date:**	10/22/21 09:35 AM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	0.0297	0.0100	0.0300	J	mg/L	1	10/28/21 11:26 AM
Boron	1.26	0.0500	0.150		mg/L	5	10/28/21 02:20 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:26 AM
Calcium	252	2.00	6.00		mg/L	20	10/28/21 12:26 PM
Iron	14.8	0.600	2.00		mg/L	20	10/28/21 12:26 PM
Magnesium	25.9	2.00	6.00		mg/L	20	10/28/21 12:26 PM
Manganese	0.570	0.00300	0.0100		mg/L	1	10/28/21 11:26 AM
Nickel	<0.00300	0.00300	0.0100		mg/L	1	10/28/21 11:26 AM
Potassium	7.48	0.100	0.300		mg/L	1	10/28/21 11:26 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:26 AM
Sodium	19.3	0.100	0.300		mg/L	1	10/28/21 11:26 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	6.94	0.300	1.00		mg/L	1	10/29/21 01:28 AM
Sulfate	544	10.0	30.0		mg/L	10	10/28/21 05:28 PM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	283	10.0	20.0		mg/L @ pH 4.53	1	10/27/21 01:02 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.53	1	10/27/21 01:02 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.53	1	10/27/21 01:02 PM
Alkalinity, Total (As CaCO3)	283	20.0	20.0		mg/L @ pH 4.53	1	10/27/21 01:02 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	1140	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

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C - Sample Result or QC discussed in Case Narrative
RL - Reporting Limit (MQL adjusted for moisture and sample size)
SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-16B
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-07
Project No:	19116344	**Collection Date:**	10/22/21 10:25 AM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	0.0255	0.0100	0.0300	J	mg/L	1	10/28/21 11:28 AM
Boron	0.0382	0.0100	0.0300		mg/L	1	10/28/21 02:22 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:28 AM
Calcium	3.86	0.100	0.300		mg/L	1	10/28/21 11:28 AM
Iron	0.584	0.0300	0.100		mg/L	1	10/28/21 11:28 AM
Magnesium	2.98	0.100	0.300		mg/L	1	10/28/21 11:28 AM
Manganese	0.0145	0.00300	0.0100		mg/L	1	10/28/21 11:28 AM
Nickel	0.00432	0.00300	0.0100	J	mg/L	1	10/28/21 11:28 AM
Potassium	2.19	0.100	0.300		mg/L	1	10/28/21 11:28 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:28 AM
Sodium	11.7	0.100	0.300		mg/L	1	10/28/21 11:28 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	6.31	0.300	1.00		mg/L	1	10/29/21 01:44 AM
Sulfate	5.36	1.00	3.00		mg/L	1	10/29/21 01:44 AM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	35.8	10.0	20.0		mg/L @ pH 4.47	1	10/27/21 01:05 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.47	1	10/27/21 01:05 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.47	1	10/27/21 01:05 PM
Alkalinity, Total (As CaCO3)	35.8	20.0	20.0		mg/L @ pH 4.47	1	10/27/21 01:05 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	121	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

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RL - Reporting Limit (MQL adjusted for moisture and sample size)
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DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-20A
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-08
Project No:	19116344	**Collection Date:**	10/22/21 11:30 AM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	0.222	0.0100	0.0300		mg/L	1	10/28/21 11:44 AM
Boron	0.0541	0.0100	0.0300		mg/L	1	10/28/21 02:24 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:44 AM
Calcium	3.92	0.100	0.300		mg/L	1	10/28/21 11:44 AM
Iron	<0.0300	0.0300	0.100		mg/L	1	10/28/21 11:44 AM
Magnesium	2.26	0.100	0.300		mg/L	1	10/28/21 11:44 AM
Manganese	0.00900	0.00300	0.0100	J	mg/L	1	10/28/21 11:44 AM
Nickel	0.00459	0.00300	0.0100	J	mg/L	1	10/28/21 11:44 AM
Potassium	1.11	0.100	0.300		mg/L	1	10/28/21 11:44 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:44 AM
Sodium	11.0	0.100	0.300		mg/L	1	10/28/21 11:44 AM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	12.3	0.300	1.00		mg/L	1	10/29/21 02:00 AM
Sulfate	26.9	1.00	3.00		mg/L	1	10/29/21 02:00 AM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.5	1	10/27/21 01:08 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.5	1	10/27/21 01:08 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.5	1	10/27/21 01:08 PM
Alkalinity, Total (As CaCO3)	<20.0	20.0	20.0		mg/L @ pH 4.5	1	10/27/21 01:08 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	132	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

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- RL - Reporting Limit (MQL adjusted for moisture and sample size)
- SDL - Sample Detection Limit
- E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-20B
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-09
Project No:	19116344	**Collection Date:**	10/22/21 12:30 PM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	<0.0100	0.0100	0.0300		mg/L	1	10/28/21 11:47 AM
Boron	0.0436	0.0100	0.0300		mg/L	1	10/28/21 02:26 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:47 AM
Calcium	16.7	0.100	0.300		mg/L	1	10/28/21 11:47 AM
Iron	0.395	0.0300	0.100		mg/L	1	10/28/21 11:47 AM
Magnesium	9.91	0.100	0.300		mg/L	1	10/28/21 11:47 AM
Manganese	0.00848	0.00300	0.0100	J	mg/L	1	10/28/21 11:47 AM
Nickel	0.00408	0.00300	0.0100	J	mg/L	1	10/28/21 11:47 AM
Potassium	2.96	0.100	0.300		mg/L	1	10/28/21 11:47 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:47 AM
Sodium	25.3	0.500	1.50		mg/L	5	10/28/21 12:28 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	13.6	0.300	1.00		mg/L	1	10/29/21 02:16 AM
Sulfate	76.4	1.00	3.00		mg/L	1	10/29/21 02:16 AM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	53.6	10.0	20.0		mg/L @ pH 4.48	1	10/27/21 01:13 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.48	1	10/27/21 01:13 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.48	1	10/27/21 01:13 PM
Alkalinity, Total (As CaCO3)	53.6	20.0	20.0		mg/L @ pH 4.48	1	10/27/21 01:13 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	252	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

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SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	MW-1
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-10
Project No:	19116344	**Collection Date:**	10/22/21 01:40 PM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	<0.0100	0.0100	0.0300		mg/L	1	10/28/21 11:49 AM
Boron	0.0325	0.0100	0.0300		mg/L	1	10/28/21 02:28 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:49 AM
Calcium	11.6	0.100	0.300		mg/L	1	10/28/21 11:49 AM
Iron	<0.0300	0.0300	0.100		mg/L	1	10/28/21 11:49 AM
Magnesium	6.01	0.100	0.300		mg/L	1	10/28/21 11:49 AM
Manganese	0.00406	0.00300	0.0100	J	mg/L	1	10/28/21 11:49 AM
Nickel	0.00307	0.00300	0.0100	J	mg/L	1	10/28/21 11:49 AM
Potassium	1.82	0.100	0.300		mg/L	1	10/28/21 11:49 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:49 AM
Sodium	35.0	0.500	1.50		mg/L	5	10/28/21 12:31 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	14.4	0.300	1.00		mg/L	1	10/29/21 02:32 AM
Sulfate	58.2	1.00	3.00		mg/L	1	10/29/21 02:32 AM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	53.8	10.0	20.0		mg/L @ pH 4.5	1	10/27/21 01:18 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.5	1	10/27/21 01:18 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.5	1	10/27/21 01:18 PM
Alkalinity, Total (As CaCO3)	53.8	20.0	20.0		mg/L @ pH 4.5	1	10/27/21 01:18 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	241	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

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J - Analyte detected between SDL and RL
B - Analyte detected in the associated Method Blank
DF- Dilution Factor
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SDL - Sample Detection Limit
E - TPH pattern not Gas or Diesel Range Pattern

DHL Analytical, Inc.

Date: *02-Nov-21*

CLIENT:	Golder	**Client Sample ID:**	DUP-1
Project:	Luminant - MLSES PDP 5	**Lab ID:**	2110215-11
Project No:	19116344	**Collection Date:**	10/22/21 01:40 PM
Lab Order:	2110215	**Matrix:**	AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Aluminum	0.0144	0.0100	0.0300	J	mg/L	1	10/28/21 11:52 AM
Boron	0.0280	0.0100	0.0300	J	mg/L	1	10/28/21 02:48 PM
Cadmium	<0.000300	0.000300	0.00100		mg/L	1	10/28/21 11:52 AM
Calcium	12.0	0.100	0.300		mg/L	1	10/28/21 11:52 AM
Iron	<0.0300	0.0300	0.100		mg/L	1	10/28/21 11:52 AM
Magnesium	6.07	0.100	0.300		mg/L	1	10/28/21 11:52 AM
Manganese	0.00490	0.00300	0.0100	J	mg/L	1	10/28/21 11:52 AM
Nickel	0.00315	0.00300	0.0100	J	mg/L	1	10/28/21 11:52 AM
Potassium	1.88	0.100	0.300		mg/L	1	10/28/21 11:52 AM
Selenium	<0.00200	0.00200	0.00500		mg/L	1	10/28/21 11:52 AM
Sodium	35.7	0.500	1.50		mg/L	5	10/28/21 12:33 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **BM**
Chloride	14.3	0.300	1.00		mg/L	1	10/29/21 02:48 AM
Sulfate	57.9	1.00	3.00		mg/L	1	10/29/21 02:48 AM
ALKALINITY		**M2320 B**					Analyst: **BM**
Alkalinity, Bicarbonate (As CaCO3)	55.3	10.0	20.0		mg/L @ pH 4.49	1	10/27/21 01:36 PM
Alkalinity, Carbonate (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.49	1	10/27/21 01:36 PM
Alkalinity, Hydroxide (As CaCO3)	<10.0	10.0	20.0		mg/L @ pH 4.49	1	10/27/21 01:36 PM
Alkalinity, Total (As CaCO3)	55.3	20.0	20.0		mg/L @ pH 4.49	1	10/27/21 01:36 PM
TOTAL DISSOLVED SOLIDS		**M2540C**					Analyst: **JS**
Total Dissolved Solids (Residue, Filterable)	234	10.0	10.0		mg/L	1	10/27/21 03:05 PM

Qualifiers:

- ND - Not Detected at the SDL
- J - Analyte detected between SDL and RL
- B - Analyte detected in the associated Method Blank
- DF- Dilution Factor
- N - Parameter not NELAP certified
- See Final Page of Report for MQLs and MDLs
- S - Spike Recovery outside control limits
- C - Sample Result or QC discussed in Case Narrative
- RL - Reporting Limit (MQL adjusted for moisture and sample size)
- SDL - Sample Detection Limit
- E - TPH pattern not Gas or Diesel Range Pattern

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_210803A

Sample ID: **DCS4-101483** Batch ID: **101483** TestNo: **SW6020B** Units: **mg/L**
SampType: **DCS4** Run ID: **ICP-MS4_210803A** Analysis Date: **8/3/2021 1:27:00 PM** Prep Date: **8/2/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0315	0.0300	0.0300	0	105	70	130	0	0	

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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: **ICP-MS4_211028A**

The QC data in batch 102576 applies to the following samples: 2110215-01A, 2110215-02A, 2110215-03A, 2110215-04A, 2110215-05A, 2110215-06A, 2110215-07A, 2110215-08A, 2110215-09A, 2110215-10A, 2110215-11A

Sample ID: **MB-102576**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **MBLK**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:00:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	<0.0100	0.0300								

Sample ID: **LCS-102576**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **LCS**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:02:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.199	0.0300	0.200	0	99.6	80	120			

Sample ID: **LCSD-102576**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **LCSD**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:04:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.197	0.0300	0.200	0	98.5	80	120	1.14	15	

Sample ID: **2110215-01A SD**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **SD**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:10:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.400	0.150	0	0.380				5.22	20	

Sample ID: **2110215-01A PDS**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **PDS**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:30:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.533	0.0300	0.200	0.380	76.7	75	125			

Sample ID: **2110215-01A MS**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **MS**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:32:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.556	0.0300	0.200	0.380	88.3	75	125			

Sample ID: **2110215-01A MSD**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **MSD**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:34:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.557	0.0300	0.200	0.380	88.4	75	125	0.020	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS4_211028A

Sample ID: **ICV-211028**	Batch ID: **R117749**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **ICV**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 12:41:00 P**	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-211028**	Batch ID: **R117749**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **LCVL**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 12:49:00 P**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.0220	0.0300	0.0200	0	110	80	120			

Sample ID: **CCV1-211028**	Batch ID: **R117749**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:41:00 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: **CCV2-211028**	Batch ID: **R117749**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS4_211028A**	Analysis Date: **10/28/2021 2:59:00 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	0.198	0.0300	0.200	0	99.0	90	110			

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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_210803A

Sample ID: **DCS1-101483**	Batch ID: **101483**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **DCS**	Run ID: **ICP-MS5_210803A**	Analysis Date: **8/3/2021 11:08:00 AM**	Prep Date: **8/2/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.0215	0.0300	0.0200	0	108	70	130	0	0	
Cadmium	0.000583	0.00100	0.000500	0	117	70	130	0	0	

Sample ID: **DCS2-101483**	Batch ID: **101483**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **DCS2**	Run ID: **ICP-MS5_210803A**	Analysis Date: **8/3/2021 11:11:00 AM**	Prep Date: **8/2/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	0.277	0.300	0.300	0	92.2	70	130	0	0	
Iron	0.0552	0.100	0.0500	0	110	70	130	0	0	
Magnesium	0.309	0.300	0.300	0	103	70	130	0	0	
Potassium	0.318	0.300	0.300	0	106	70	130	0	0	
Sodium	0.318	0.300	0.300	0	106	70	130	0	0	

Sample ID: **DCS3-101483**	Batch ID: **101483**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **DCS3**	Run ID: **ICP-MS5_210803A**	Analysis Date: **8/3/2021 11:14:00 AM**	Prep Date: **8/2/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.00528	0.0100	0.00500	0	106	70	130	0	0	
Nickel	0.00555	0.0100	0.00500	0	111	70	130	0	0	
Selenium	0.00540	0.00500	0.00500	0	108	70	130	0	0	

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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_211028A

The QC data in batch 102576 applies to the following samples: 2110215-01A, 2110215-02A, 2110215-03A, 2110215-04A, 2110215-05A, 2110215-06A, 2110215-07A, 2110215-08A, 2110215-09A, 2110215-10A, 2110215-11A

Sample ID: **MB-102576** Batch ID: **102576** TestNo: **SW6020B** Units: **mg/L**
SampType: **MBLK** Run ID: **ICP-MS5_211028A** Analysis Date: **10/28/2021 10:52:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	<0.0100	0.0300								
Cadmium	<0.000300	0.00100								
Calcium	<0.100	0.300								
Iron	<0.0300	0.100								
Magnesium	<0.100	0.300								
Manganese	<0.00300	0.0100								
Nickel	<0.00300	0.0100								
Potassium	<0.100	0.300								
Selenium	<0.00200	0.00500								
Sodium	<0.100	0.300								

Sample ID: **LCS-102576** Batch ID: **102576** TestNo: **SW6020B** Units: **mg/L**
SampType: **LCS** Run ID: **ICP-MS5_211028A** Analysis Date: **10/28/2021 10:55:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	5.10	0.0300	5.00	0	102	80	120			
Cadmium	0.203	0.00100	0.200	0	102	80	120			
Calcium	5.02	0.300	5.00	0	100	80	120			
Iron	5.19	0.100	5.00	0	104	80	120			
Magnesium	5.14	0.300	5.00	0	103	80	120			
Manganese	0.207	0.0100	0.200	0	103	80	120			
Nickel	0.208	0.0100	0.200	0	104	80	120			
Potassium	5.10	0.300	5.00	0	102	80	120			
Selenium	0.209	0.00500	0.200	0	104	80	120			
Sodium	5.15	0.300	5.00	0	103	80	120			

Sample ID: **LCSD-102576** Batch ID: **102576** TestNo: **SW6020B** Units: **mg/L**
SampType: **LCSD** Run ID: **ICP-MS5_211028A** Analysis Date: **10/28/2021 10:57:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	5.06	0.0300	5.00	0	101	80	120	0.821	15	
Cadmium	0.204	0.00100	0.200	0	102	80	120	0.532	15	
Calcium	5.01	0.300	5.00	0	100	80	120	0.219	15	
Iron	5.14	0.100	5.00	0	103	80	120	1.04	15	
Magnesium	5.11	0.300	5.00	0	102	80	120	0.545	15	
Manganese	0.203	0.0100	0.200	0	101	80	120	1.97	15	
Nickel	0.207	0.0100	0.200	0	103	80	120	0.573	15	
Potassium	5.07	0.300	5.00	0	101	80	120	0.731	15	
Selenium	0.208	0.00500	0.200	0	104	80	120	0.276	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_211028A

Sample ID: **LCSD-102576**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **LCSD**	Run ID: **ICP-MS5_211028A**	Analysis Date: **10/28/2021 10:57:00 A**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	5.10	0.300	5.00	0	102	80	120	1.09	15	

Sample ID: **2110215-01A SD**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **SD**	Run ID: **ICP-MS5_211028A**	Analysis Date: **10/28/2021 11:05:00 A**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	<0.0500	0.150	0	0.0350				0	20	
Cadmium	<0.00150	0.00500	0	0				0	20	
Calcium	3.59	1.50	0	3.66				1.75	20	
Iron	<0.150	0.500	0	0.0734				0	20	
Magnesium	3.43	1.50	0	3.42				0.322	20	
Manganese	0.0626	0.0500	0	0.0638				1.91	20	
Nickel	<0.0150	0.0500	0	0.00907				0	20	
Potassium	2.12	1.50	0	2.13				0.147	20	
Selenium	<0.0100	0.0250	0	0				0	20	
Sodium	14.5	1.50	0	14.6				0.544	20	

Sample ID: **2110215-01A PDS**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **PDS**	Run ID: **ICP-MS5_211028A**	Analysis Date: **10/28/2021 11:31:00 A**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.96	0.0300	5.00	0.0350	98.5	75	125			
Cadmium	0.198	0.00100	0.200	0	98.8	75	125			
Calcium	8.32	0.300	5.00	3.66	93.2	75	125			
Iron	5.25	0.100	5.00	0.0734	104	75	125			
Magnesium	7.95	0.300	5.00	3.42	90.6	75	125			
Manganese	0.262	0.0100	0.200	0.0638	99.2	75	125			
Nickel	0.206	0.0100	0.200	0.00907	98.4	75	125			
Potassium	6.86	0.300	5.00	2.13	94.7	75	125			
Selenium	0.195	0.00500	0.200	0	97.3	75	125			
Sodium	18.8	0.300	5.00	14.6	84.4	75	125			

Sample ID: **2110215-01A MS**	Batch ID: **102576**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **MS**	Run ID: **ICP-MS5_211028A**	Analysis Date: **10/28/2021 11:34:00 A**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.94	0.0300	5.00	0.0350	98.2	75	125			
Cadmium	0.201	0.00100	0.200	0	101	75	125			
Calcium	8.60	0.300	5.00	3.66	98.9	75	125			
Iron	5.20	0.100	5.00	0.0734	103	75	125			
Magnesium	8.49	0.300	5.00	3.42	101	75	125			

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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_211028A

Sample ID: **2110215-01A MS** Batch ID: **102576** TestNo: **SW6020B** Units: **mg/L**
SampType: **MS** Run ID: **ICP-MS5_211028A** Analysis Date: **10/28/2021 11:34:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Manganese	0.266	0.0100	0.200	0.0638	101	75	125			
Nickel	0.209	0.0100	0.200	0.00907	100	75	125			
Potassium	7.13	0.300	5.00	2.13	100	75	125			
Selenium	0.202	0.00500	0.200	0	101	75	125			
Sodium	19.7	0.300	5.00	14.6	102	75	125			

Sample ID: **2110215-01A MSD** Batch ID: **102576** TestNo: **SW6020B** Units: **mg/L**
SampType: **MSD** Run ID: **ICP-MS5_211028A** Analysis Date: **10/28/2021 11:36:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	5.03	0.0300	5.00	0.0350	100	75	125	1.83	15	
Cadmium	0.203	0.00100	0.200	0	101	75	125	0.750	15	
Calcium	8.63	0.300	5.00	3.66	99.5	75	125	0.326	15	
Iron	5.29	0.100	5.00	0.0734	104	75	125	1.70	15	
Magnesium	8.63	0.300	5.00	3.42	104	75	125	1.70	15	
Manganese	0.270	0.0100	0.200	0.0638	103	75	125	1.33	15	
Nickel	0.211	0.0100	0.200	0.00907	101	75	125	0.874	15	
Potassium	7.18	0.300	5.00	2.13	101	75	125	0.712	15	
Selenium	0.205	0.00500	0.200	0	103	75	125	1.70	15	
Sodium	20.0	0.300	5.00	14.6	108	75	125	1.52	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_211028A

Sample ID: **ICV-211028** Batch ID: **R117745** TestNo: **SW6020B** Units: **mg/L**
SampType: **ICV** Run ID: **ICP-MS5_211028A** Analysis Date: **10/28/2021 10:37:00 A** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	2.50	0.0300	2.50	0	100	90	110			
Cadmium	0.101	0.00100	0.100	0	101	90	110			
Calcium	2.55	0.300	2.50	0	102	90	110			
Iron	2.68	0.100	2.50	0	107	90	110			
Magnesium	2.43	0.300	2.50	0	97.3	90	110			
Manganese	0.104	0.0100	0.100	0	104	90	110			
Nickel	0.110	0.0100	0.100	0	110	90	110			
Potassium	2.44	0.300	2.50	0	97.5	90	110			
Selenium	0.108	0.00500	0.100	0	108	90	110			
Sodium	2.52	0.300	2.50	0	101	90	110			

Sample ID: **LCVL-211028** Batch ID: **R117745** TestNo: **SW6020B** Units: **mg/L**
SampType: **LCVL** Run ID: **ICP-MS5_211028A** Analysis Date: **10/28/2021 10:44:00 A** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	0.109	0.0300	0.100	0	109	80	120			
Cadmium	0.00103	0.00100	0.00100	0	103	80	120			
Calcium	0.0950	0.300	0.100	0	95.0	80	120			
Iron	0.104	0.100	0.100	0	104	80	120			
Magnesium	0.0982	0.300	0.100	0	98.2	80	120			
Manganese	0.00493	0.0100	0.00500	0	98.6	80	120			
Nickel	0.00516	0.0100	0.00500	0	103	80	120			
Potassium	0.0985	0.300	0.100	0	98.5	80	120			
Selenium	0.00528	0.00500	0.00500	0	106	80	120			
Sodium	0.103	0.300	0.100	0	103	80	120			

Sample ID: **CCV1-211028** Batch ID: **R117745** TestNo: **SW6020B** Units: **mg/L**
SampType: **CCV** Run ID: **ICP-MS5_211028A** Analysis Date: **10/28/2021 11:39:00 A** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.98	0.0300	5.00	0	99.7	90	110			
Cadmium	0.204	0.00100	0.200	0	102	90	110			
Calcium	4.94	0.300	5.00	0	98.8	90	110			
Iron	5.23	0.100	5.00	0	105	90	110			
Magnesium	5.08	0.300	5.00	0	102	90	110			
Manganese	0.202	0.0100	0.200	0	101	90	110			
Nickel	0.212	0.0100	0.200	0	106	90	110			
Potassium	4.97	0.300	5.00	0	99.5	90	110			
Selenium	0.215	0.00500	0.200	0	107	90	110			
Sodium	5.11	0.300	5.00	0	102	90	110			

Qualifiers:

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

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_211028A

Sample ID: **CCV2-211028**	Batch ID: **R117745**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS5_211028A**	Analysis Date: **10/28/2021 12:10:00 P**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	4.92	0.0300	5.00	0	98.3	90	110			
Cadmium	0.203	0.00100	0.200	0	101	90	110			
Calcium	5.04	0.300	5.00	0	101	90	110			
Iron	5.34	0.100	5.00	0	107	90	110			
Magnesium	5.07	0.300	5.00	0	101	90	110			
Manganese	0.204	0.0100	0.200	0	102	90	110			
Nickel	0.216	0.0100	0.200	0	108	90	110			
Potassium	4.93	0.300	5.00	0	98.7	90	110			
Selenium	0.213	0.00500	0.200	0	107	90	110			
Sodium	5.16	0.300	5.00	0	103	90	110			

Sample ID: **CCV3-211028**	Batch ID: **R117745**	TestNo: **SW6020B**	Units: **mg/L**
SampType: **CCV**	Run ID: **ICP-MS5_211028A**	Analysis Date: **10/28/2021 12:44:00 P**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	4.92	0.300	5.00	0	98.5	90	110			
Iron	5.26	0.100	5.00	0	105	90	110			
Magnesium	5.04	0.300	5.00	0	101	90	110			
Manganese	0.205	0.0100	0.200	0	103	90	110			
Potassium	4.97	0.300	5.00	0	99.4	90	110			
Sodium	5.11	0.300	5.00	0	102	90	110			

Qualifiers:

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

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_210928A

Sample ID: **DCS2-102216**	Batch ID: **102216**	TestNo: **E300**	Units: **mg/L**
SampType: **DCS2**	Run ID: **IC2_210928A**	Analysis Date: **9/28/2021 1:38:01 PM**	Prep Date: **9/28/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	0.533	1.00	0.5000	0	107	70	130	0	0	
Sulfate	1.55	3.00	1.500	0	104	70	130	0	0	

Sample ID: **DCS3-102216**	Batch ID: **102216**	TestNo: **E300**	Units: **mg/L**
SampType: **DCS3**	Run ID: **IC2_210928A**	Analysis Date: **9/28/2021 1:54:01 PM**	Prep Date: **9/28/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	1.05	1.00	1.000	0	105	70	130	0	0	
Sulfate	3.10	3.00	3.000	0	103	70	130	0	0	

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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_211028A

The QC data in batch 102594 applies to the following samples: 2110215-01B, 2110215-02B, 2110215-03B, 2110215-04B, 2110215-05B, 2110215-06B, 2110215-07B, 2110215-08B, 2110215-09B, 2110215-10B, 2110215-11B

Sample ID: **MB-102594** Batch ID: **102594** TestNo: **E300** Units: **mg/L**
SampType: **MBLK** Run ID: **IC2_211028A** Analysis Date: **10/28/2021 11:59:09 A** Prep Date: **10/28/2021**

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

Sample ID: **LCS-102594** Batch ID: **102594** TestNo: **E300** Units: **mg/L**
SampType: **LCS** Run ID: **IC2_211028A** Analysis Date: **10/28/2021 12:15:09 P** Prep Date: **10/28/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.4	1.00	10.00	0	104	90	110			
Sulfate	31.7	3.00	30.00	0	106	90	110			

Sample ID: **LCSD-102594** Batch ID: **102594** TestNo: **E300** Units: **mg/L**
SampType: **LCSD** Run ID: **IC2_211028A** Analysis Date: **10/28/2021 12:31:09 P** Prep Date: **10/28/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.3	1.00	10.00	0	103	90	110	0.587	20	
Sulfate	31.7	3.00	30.00	0	106	90	110	0.218	20	

Sample ID: **2110242-02EMS** Batch ID: **102594** TestNo: **E300** Units: **mg/L**
SampType: **MS** Run ID: **IC2_211028A** Analysis Date: **10/28/2021 8:24:50 PM** Prep Date: **10/28/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	374	10.0	200.0	200.6	86.6	90	110			S
Sulfate	286	30.0	200.0	94.80	95.8	90	110			

Sample ID: **2110242-02EMSD** Batch ID: **102594** TestNo: **E300** Units: **mg/L**
SampType: **MSD** Run ID: **IC2_211028A** Analysis Date: **10/28/2021 8:40:50 PM** Prep Date: **10/28/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	370	10.0	200.0	200.6	84.8	90	110	0.927	20	S
Sulfate	285	30.0	200.0	94.80	95.0	90	110	0.576	20	

Sample ID: **2110242-03EMS** Batch ID: **102594** TestNo: **E300** Units: **mg/L**
SampType: **MS** Run ID: **IC2_211028A** Analysis Date: **10/28/2021 9:12:50 PM** Prep Date: **10/28/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	368	10.0	200.0	202.3	83.0	90	110			S
Sulfate	287	30.0	200.0	99.33	93.7	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_211028A

Sample ID: **2110242-03EMSD** Batch ID: **102594** TestNo: **E300** Units: **mg/L**
SampType: **MSD** Run ID: **IC2_211028A** Analysis Date: **10/28/2021 9:28:50 PM** Prep Date: **10/28/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	369	10.0	200.0	202.3	83.1	90	110	0.035	20	S
Sulfate	287	30.0	200.0	99.33	93.8	90	110	0.064	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_211028A

Sample ID: **ICV-211028**	Batch ID: **R117742**	TestNo: **E300**	Units: **mg/L**
SampType: **ICV**	Run ID: **IC2_211028A**	Analysis Date: **10/28/2021 11:27:09 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	26.3	1.00	25.00	0	105	90	110			
Sulfate	81.5	3.00	75.00	0	109	90	110			

Sample ID: **CCV1-211028**	Batch ID: **R117742**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC2_211028A**	Analysis Date: **10/28/2021 7:20:50 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			
Sulfate	31.5	3.00	30.00	0	105	90	110			

Sample ID: **CCV2-211028**	Batch ID: **R117742**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC2_211028A**	Analysis Date: **10/29/2021 12:08:50 A**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.2	1.00	10.00	0	102	90	110			
Sulfate	31.5	3.00	30.00	0	105	90	110			

Sample ID: **CCV3-211028**	Batch ID: **R117742**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC2_211028A**	Analysis Date: **10/29/2021 3:52:50 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			
Sulfate	31.2	3.00	30.00	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_211027A

The QC data in batch 102572 applies to the following samples: 2110215-01B, 2110215-02B, 2110215-03B, 2110215-04B, 2110215-05B, 2110215-06B, 2110215-07B, 2110215-08B, 2110215-09B, 2110215-10B, 2110215-11B

Sample ID: **MB-102572** Batch ID: **102572** TestNo: **M2320 B** Units: **mg/L @ pH 4.35**
SampType: **MBLK** Run ID: **TITRATOR_211027A** Analysis Date: **10/27/2021 10:12:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	<10.0	20.0								
Alkalinity, Carbonate (As CaCO3)	<10.0	20.0								
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0								
Alkalinity, Total (As CaCO3)	<20.0	20.0								

Sample ID: **LCS-102572** Batch ID: **102572** TestNo: **M2320 B** Units: **mg/L @ pH 4.25**
SampType: **LCS** Run ID: **TITRATOR_211027A** Analysis Date: **10/27/2021 10:16:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	53.8	20.0	50.00	0	108	74	129			

Sample ID: **LCSD-102572** Batch ID: **102572** TestNo: **M2320 B** Units: **mg/L @ pH 4.35**
SampType: **LCSD** Run ID: **TITRATOR_211027A** Analysis Date: **10/27/2021 10:21:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	53.4	20.0	50.00	0	107	74	129	0.896	20	

Sample ID: **2110153-02D-DUP** Batch ID: **102572** TestNo: **M2320 B** Units: **mg/L @ pH 4.53**
SampType: **DUP** Run ID: **TITRATOR_211027A** Analysis Date: **10/27/2021 11:19:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	276	20.0	0	281.8				2.12	20	
Alkalinity, Carbonate (As CaCO3)	<10.0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	276	20.0	0	281.8				2.12	20	

Sample ID: **2110165-01D-DUP** Batch ID: **102572** TestNo: **M2320 B** Units: **mg/L @ pH 4.54**
SampType: **DUP** Run ID: **TITRATOR_211027A** Analysis Date: **10/27/2021 11:51:00 A** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	310	20.0	0	317.9				2.52	20	
Alkalinity, Carbonate (As CaCO3)	<10.0	20.0	0	0				0	20	
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0	0				0	20	
Alkalinity, Total (As CaCO3)	310	20.0	0	317.9				2.52	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: TITRATOR_211027A

Sample ID: **ICV-211027**	Batch ID: **R117720**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.33**
SampType: **ICV**	Run ID: **TITRATOR_211027A**	Analysis Date: **10/27/2021 10:07:00 A**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	23.3	20.0	0							
Alkalinity, Carbonate (As CaCO3)	76.5	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0							
Alkalinity, Total (As CaCO3)	99.8	20.0	100.0	0	99.8	98	102			

Sample ID: **CCV1-211027**	Batch ID: **R117720**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.37**
SampType: **CCV**	Run ID: **TITRATOR_211027A**	Analysis Date: **10/27/2021 12:23:00 P**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	33.8	20.0	0							
Alkalinity, Carbonate (As CaCO3)	65.8	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0							
Alkalinity, Total (As CaCO3)	99.5	20.0	100.0	0	99.5	90	110			

Sample ID: **CCV2-211027**	Batch ID: **R117720**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.43**
SampType: **CCV**	Run ID: **TITRATOR_211027A**	Analysis Date: **10/27/2021 1:58:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	25.9	20.0	0							
Alkalinity, Carbonate (As CaCO3)	74.6	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0							
Alkalinity, Total (As CaCO3)	100	20.0	100.0	0	100	90	110			

Sample ID: **CCV3-211027**	Batch ID: **R117720**	TestNo: **M2320 B**	Units: **mg/L @ pH 4.38**
SampType: **CCV**	Run ID: **TITRATOR_211027A**	Analysis Date: **10/27/2021 2:16:00 PM**	Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Alkalinity, Bicarbonate (As CaCO3)	27.0	20.0	0							
Alkalinity, Carbonate (As CaCO3)	72.6	20.0	0							
Alkalinity, Hydroxide (As CaCO3)	<10.0	20.0	0							
Alkalinity, Total (As CaCO3)	99.7	20.0	100.0	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

ANALYTICAL QC SUMMARY REPORT

RunID: WC_211027C

The QC data in batch 102570 applies to the following samples: 2110215-01B, 2110215-02B, 2110215-03B, 2110215-04B, 2110215-05B, 2110215-06B, 2110215-07B, 2110215-08B, 2110215-09B, 2110215-10B, 2110215-11B

Sample ID: **MB-102570** Batch ID: **102570** TestNo: **M2540C** Units: **mg/L**
SampType: **MBLK** Run ID: **WC_211027C** Analysis Date: **10/27/2021 3:05:00 PM** Prep Date: **10/27/2021**

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-102570** Batch ID: **102570** TestNo: **M2540C** Units: **mg/L**
SampType: **LCS** Run ID: **WC_211027C** Analysis Date: **10/27/2021 3:05:00 PM** Prep Date: **10/27/2021**

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: **2110220-02D-DUP** Batch ID: **102570** TestNo: **M2540C** Units: **mg/L**
SampType: **DUP** Run ID: **WC_211027C** Analysis Date: **10/27/2021 3:05:00 PM** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	3760	50.0	0	3770				0.399	5	

Sample ID: **2110229-01D-DUP** Batch ID: **102570** TestNo: **M2540C** Units: **mg/L**
SampType: **DUP** Run ID: **WC_211027C** Analysis Date: **10/27/2021 3:05:00 PM** Prep Date: **10/27/2021**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4240	50.0	0	4240				0.118	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 NELAP certified

CLIENT: Golder
Work Order: 2110215
Project: Luminant - MLSES PDP 5

MQL SUMMARY REPORT

TestNo: E300	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Chloride	0.300	1.00
Sulfate	1.00	3.00

TestNo: SW6020B	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Aluminum	0.0100	0.0300
Boron	0.0100	0.0300
Cadmium	0.000300	0.00100
Calcium	0.100	0.300
Iron	0.0300	0.100
Magnesium	0.100	0.300
Manganese	0.00300	0.0100
Nickel	0.00300	0.0100
Potassium	0.100	0.300
Selenium	0.00200	0.00500
Sodium	0.100	0.300

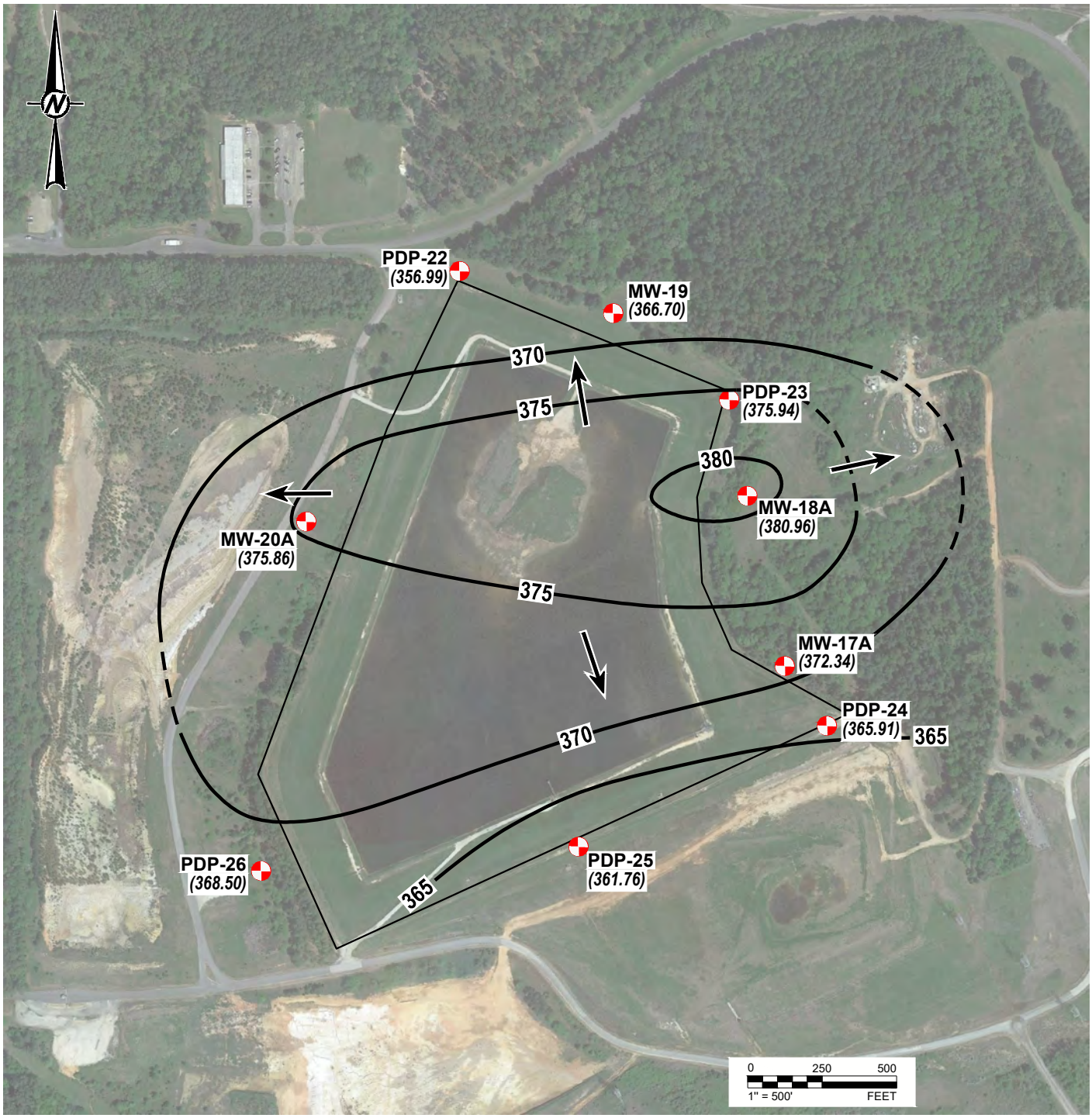
TestNo: M2320 B	**MDL**	**MQL**
Analyte	**ıg/L @ pH 4.3**	**g/L @ pH 4.3**
Alkalinity, Bicarbonate (As CaCO3)	10.0	20.0
Alkalinity, Carbonate (As CaCO3)	10.0	20.0
Alkalinity, Hydroxide (As CaCO3)	10.0	20.0
Alkalinity, Total (As CaCO3)	20.0	20.0

TestNo: M2540C	**MDL**	**MQL**
Analyte	**mg/L**	**mg/L**
Total Dissolved Solids (Residue, Filt	10.0	10.0

Qualifiers: MQL -Method Quantitation Limit as defined by TRRP
MDL -Method Detection Limit as defined by TRRP

ATTACHMENT 2

2021 GROUNDWATER POTENTIOMETRIC SURFACE MAPS



LEGEND

- CCR MONITORING WELL
- (374.34) GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)
- 360 GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (C.I. = 5 FT)
- INFERRED GROUNDWATER FLOW DIRECTION

STATE OF TEXAS
WILLIAM F VIENNE
GEOLOGY
No. 10492
LICENSED
PROFESSIONAL GEOSCIENTIST
11/16/2022

REFERENCE(S)

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 4/6/17.

CLIENT
LUMINANT

PROJECT
MARTIN LAKE STEAM ELECTRIC STATION
TATUM, TEXAS

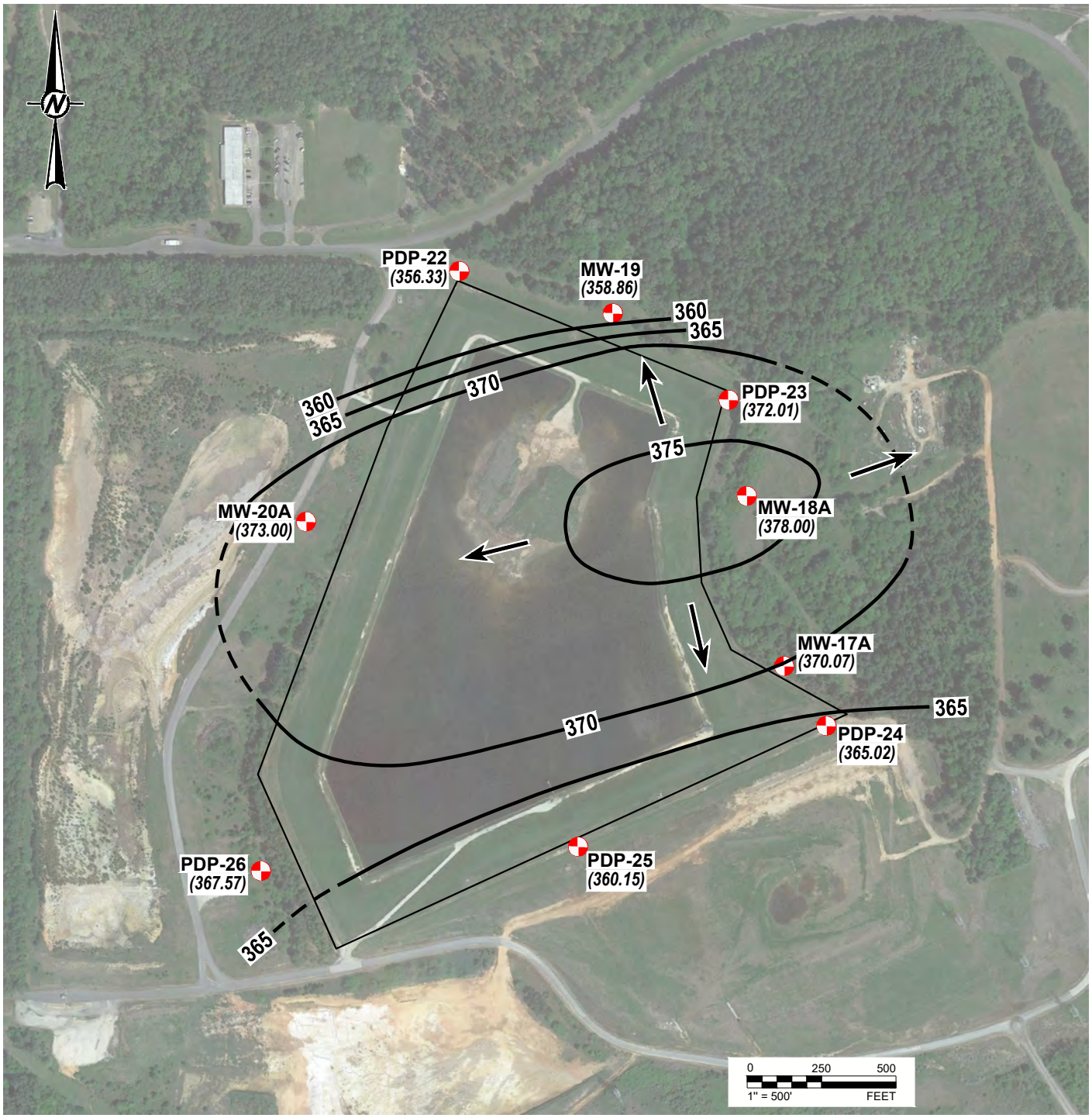
TITLE
PDP 5
POTENTIOMETRIC SURFACE MAP
JUNE 3, 2021

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2022-12-02
DESIGNED	AJD
PREPARED	AJD
REVIEWED	WFV
APPROVED	WFV

PROJECT NO.	CONTROL	REV.	FIGURE
19122262		0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A



LEGEND

- CCR MONITORING WELL
- (374.34) GROUNDWATER POTENTIOMETRIC SURFACE (FT MSL)
- 360 GROUNDWATER POTENTIOMETRIC SURFACE CONTOUR (C.I. = 5 FT)
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STATE OF TEXAS
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11/16/2022

REFERENCE(S)

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 4/6/17.

CLIENT
LUMINANT

PROJECT
MARTIN LAKE STEAM ELECTRIC STATION
TATUM, TEXAS

TITLE
PDP 5
POTENTIOMETRIC SURFACE MAP
OCTOBER 4, 2021

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2022-12-02
DESIGNED	AJD
PREPARED	AJD
REVIEWED	WFV
APPROVED	WFV

PROJECT NO.	CONTROL	REV.	FIGURE
19122262		0	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

Last Edited By: usad701305 Date: 2022-12-02 Time:11:14:57 AM | Printed By: USAD701305 Date: 2022-12-02 Time:11:20:37 AM
Path: \\golder.gds\complexdata\office\Texarkana\Projects - Round Rock_2019\19122262 - Luminant\D - MLSES\2022-12\ | File Name: 3 - POT Surface Map-PDP 5 (October 2021).dwg

ATTACHMENT 3
ALTERNATE SOURCE DEMONSTRATION

ALTERNATE SOURCE DEMONSTRATION SUMMARY

MARTIN LAKE STEAM ELECTRIC STATION – PDP 5

Introduction

This Alternate Source Demonstration Summary was prepared to document that a source other than the Permanent Disposal Pond 5 (PDP 5) (the Site) caused the statistically significant increases (SSIs) over background levels observed during the 2020 Coal Combustion Residual (CCR) Detection Monitoring Program sampling events as required by 40 CFR 257.94(e)(2) (the "CCR Rule").

PDP-5 History and CCR Monitoring Well Network

A Site Plan showing PDP-5 and vicinity is shown on Figure 1. PDP-5 was constructed in 2010 on top of and immediately adjacent to closed and capped former pre-CCR Rule coal ash surface impoundments that began operation in 1979. PDP-5 extends significantly above natural grade and represents a localized topographic high-point relative to the surrounding area. Based on this configuration, there are no upgradient monitoring wells at PDP-5.

The CCR groundwater monitoring well system at PDP-5 consists of nine monitoring wells (MW-17A, MW-18A, MW-19, MW-20A, PDP-22, PDP-23, PDP-24, PDP-25, PDP-26). As shown on Figure 1, the wells are distributed radially along the perimeter of PDP-5 and are screened in the uppermost aquifer.

2020 Semi-Annual Detection Monitoring Results and Discussion

Detection Monitoring Program groundwater data collected from the PDP-5 CCR monitoring well network from 2017 through 2020 are summarized in Table 1. Detection Monitoring Program groundwater samples were collected on a semi-annual basis in 2020 in accordance with 40 CFR 257.94. Golder collected the first 2020 Detection Monitoring Program groundwater samples in May 2020 and the second semi-annual Detection Monitoring Program groundwater samples in September 2020. Intrawell statistical evaluations were used to identify SSIs from the 2020 Detection Monitoring Program in accordance with the procedures outlined in the Statistical Analysis Plan (SAP) (PBW, 2017).

Based on the 2020 semi-annual analytical results, SSIs were identified for boron and calcium in well PDP-25, calcium in well PDP-23, and chloride in well MW-20A. Prediction limits for boron in wells MW-18A, MW-20A, and PDP-23 were exceeded during the first semi-annual 2020 sampling event; however, since the prediction limits were not exceeded during the second semi-annual 2020 event samples from these wells, SSIs were not indicated for these constituents/wells as specified in the SAP.

The boron SSI concentrations in the 2020 groundwater samples from well PDP-25 (maximum sample concentration of 0.202 mg/L) exceeded the boron prediction limit of 0.136 mg/L for that well; however, the 2020 PDP-25 boron sample results are significantly lower than the boron sample concentrations observed at other Site wells where SSIs were not indicated. For example, six of the eight other CCR monitoring wells (MW-17A, MW-18A, MW-19, MW-20A, PDP-22, and PDP-24) had boron sample concentrations in 2020 that were higher than those observed in the PDP-25 samples, but SSIs were not indicated in these other wells. Therefore, the boron sample concentrations observed at PDP-25 are similar or less than those observed in other Site wells and are attributed to variability caused by the heterogeneity of the uppermost aquifer at the Site.

The calcium SSI concentrations in the 2020 groundwater samples from well PDP-23 (maximum sample concentration of 2.31 mg/L) exceeded the calcium prediction limit of 2.0 mg/L for that well. The calcium SSI concentrations in the 2020 groundwater samples from well PDP-25 (maximum sample concentration of 46.3 mg/L) exceeded the calcium prediction limit of 41.3 mg/L for that well. The historical variability of calcium in groundwater samples collected Site-wide has been high, ranging from about 1 mg/L to 133 mg/L. The calcium SSI sample concentrations observed at PDP-23 and PDP-25 fall in this historical range. Also, two wells (MW-19 and PDP-22) sampled during 2020 that did not have SSIs had calcium sample concentrations that were higher than the maximum calcium SSI observed in 2020. Therefore, the calcium sample concentrations observed at PDP-23 and PDP-25 are similar or less than those observed in other Site wells and are attributed to variability caused by the heterogeneity of the uppermost aquifer at the Site.

The chloride SSI concentration in well MW-20A in September 2020 (12.6 mg/L) slightly exceeded the chloride prediction limit (12.3 mg/L) for that well. The chloride sample concentration from well MW-20A in May 2020 (10.4 mg/L) was below the chloride prediction limit for that well; however, the September 2020 chloride sample result was assumed to be an SSI because a confirmation sample was not collected after the September 2020 sampling event. Four of the eight other CCR monitoring wells (MW-19, PDP-22, PDP-24, and PDP-25) had chloride sample concentrations in 2020 that were higher than those observed in the PDP-20A SSI sample, but SSIs were not indicated in these other wells. Also, the PDP-20A SSI sample chloride concentration was below the Site-wide average concentration of 22 mg/L. Therefore, the chloride sample SSI concentration observed at MW-20A is similar or less than those observed in other Site wells and is attributed to variability caused by the heterogeneity of the uppermost aquifer at the Site.

It should also be noted that groundwater conditions in the vicinity of PDP-5 are influenced by the closed and capped former pre-CCR Rule coal ash surface impoundments beneath and adjacent to PDP-5. As a result, Detection Monitoring groundwater concentrations identified as SSIs may also be attributable to historical operation of the closed former surface impoundments in addition to the natural variability caused by the heterogeneity of the groundwater system at the Site.

Conclusion

SSIs were identified for boron, calcium, and chloride during the 2020 Detection Monitoring Program sampling events at PDP 5. All observed SSIs are attributed to natural variation in groundwater quality due to the heterogeneity of the groundwater system and to potential effects from the closed former non-CCR Rule coal ash surface impoundments in the vicinity of PDP 5. The SSIs identified in the 2020 sample data are not considered evidence of a release from the CCR unit. In accordance with Section 257.94(e)(2), Luminant should continue the Detection Monitoring Program. Initiation of an Assessment Monitoring Program is not required at this time.

References

Pastor, Behling & Wheeler, LLC (PBW), 2017. Coal Combustion Residual Rule, Statistical Analysis Plan, PDP 5, Rusk County, Texas. October 11, 2017.

PROFESSIONAL CERTIFICATION

This document and all attachments were prepared by Golder Associates Inc. under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I hereby certify that the alternative source demonstration at the referenced facility meets the requirements of Section 257.94(e)(2) of the CCR Rule.

Patrick J. Behling, P.E.
Principal Engineer
GOLDER ASSOCIATES INC.

TABLE 1
CCR Groundwater Detection Monitoring Data Summary
Martin Lake Steam Electric Station - PDP 5

Sample	Date	B		Ca		Cl		Fl		field pH		SO_4		TDS	
Location	Sampled	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data
MW-17A	09/22/17	0.538	0.402	6.73	3.1	10.4	8.3	0.4	<0.1	2.5 9.19	6.78	51.9	31.2	170	111
	06/14/18		0.485		6.48		9.16		<0.1		6.87		45.9		129
	09/11/18		0.523		5.06		8.82		0.179 J		5.03		43.1		137
	05/13/19		0.497		4.88		9.18		<0.1		6.79		44.7		145
	11/7/2019		0.52		5.05		8.81		<0.100		6.44		43.9		127
	5/19/2020		0.521		5.09		8.74		<0.100		6.57		46.8		140
	9/25/2020		0.477		5.76		10.1		<0.100		6.57		47.7		133
MW-18A	09/21/17	0.20	0.0654	3.1	1.04	10.4	5.27	0.4	<0.1	4.88 7.92	6.94	9.1	3.23	157	45
	06/14/18		0.102		2		6.56		<0.1		6.92		3.48		71
	09/12/18		0.211		3.23		9.06		<0.1		5.69		4.82		150
	11/7/2018 re-sample		0.128		--		--		--		--		--		--
	05/13/19		0.117		1.01		6.17		0.138 J		6.64		3.23		73
	11/7/2019		0.127		11.5		6.34		<0.100		6.23		3.67		68
	5/19/2020		0.225		1.54		7.09		<0.100		6.89		5.97		86
	9/25/2020		0.188		1.66		8.13		<0.100		6.78		6.03		77
MW-19	09/22/17	0.782	0.0677	237	2.74	57.7	5.36	0.512	<0.1	4.6 8.08	6.94	672	1.46 J	1,380	98
	06/14/18		0.577		133		24.4		0.216 J		6.78		328		758
	09/11/18		0.243		38		65.1		0.228 J		6.04		166		597
	11/7/2018 re-sample		--		--		5.22		--		--		--		--
	05/13/19		0.429		122		26.8		0.229 J		6.72		349		813
	11/8/2019		0.529		77.8		49.3		0.189 J		6.87		310		844
	5/19/2020		0.0724		1.49		5.84		<0.100		6.91		1.02 J		85
	9/25/2020		0.412		94.6		14.3		0.111 J		6.92		160		462

TABLE 1
CCR Groundwater Detection Monitoring Data Summary
Martin Lake Steam Electric Station - PDP 5

Sample	Date	B		Ca		Cl		Fl		field pH		SO_4		TDS	
Location	Sampled	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data	Prediction Limit	Sample Data
MW-20A	09/22/17	0.213	0.0807	25.7	17.4	12.3	12.6	0.954	0.175 J	3.06 8.76	6.71	148	74.2	381	237
	02/21/18 re-sample		--		--		10.7		--		--		--		--
	06/13/18		0.171		24		10.9		0.672		6.72		132		250
	09/11/18		0.141		7.16		11		0.235 J		4.70		39.1		154
	05/13/19		0.239		37.4		10.2		0.731		6.81		178		328
	11/8/2019		0.132		9.9		10.2		0.465		6.51		88		205
	5/19/2020		0.22		24		10.4		0.413		6.83		133		270
	9/25/2020		0.107		8.94		12.6		0.132 J		6.68		54.3		162
PDP-22	09/22/17	0.411	0.221	306	92.5	32.7	12.3	1.07	0.321 J	4.08 8.63	6.98	216	178	1,780	558
	06/14/18		0.115		7.78		11.8		0.239		6.63		186		491
	09/12/18		0.164		61.1		10.9		0.216 J		5.88		143		476
	05/13/19		0.158		98.2		10.1		0.303 J		6.86		184		615
	11/12/2019		0.226		34.3		12.6		0.218 J		6.93		215		482
	5/19/2020		0.0646		54.9		1.06		<0.100		6.55		5.21		205
	9/25/2020		0.206		25.1		12.7		0.128 J		6.73		186		398
PDP-23	09/22/17	0.0678	0.0463	2	2.34	7.52	4.48	0.4	0.147 J	3.38 8.45	6.77	3.27	1.47 J	143	111
	02/21/18 re-sample		--		2.37		--		--		--		--		--
	06/13/18		0.0357		2.29		6.21		<0.1		6.82		1.26 J		98
	09/11/18		0.0760		1.96		6.38		<0.1		5.32		1.52 J		98
	11/7/2018 re-sample		0.0683		--		--		--		--		--		--
	05/13/19		0.0628		1.89		6.98		<0.1		6.68		1.28 J		103
	11/12/2019		0.0675		2.14		4.98		<0.100		6.72		1.41 J		93
	5/19/2020		0.0709		2.03		6.86		<0.100		6.83		1.19 J		104
	9/25/2020		0.0617		2.31		7.29		<0.100		6.74		<1.00		94