# **SOLDER**

# 2021 Annual Groundwater Monitoring and Corrective Action Report - Revision 1

Oak Grove Steam Electric Station Ash Landfill 1 - Robertson County, Texas

Prepared for:

**Oak Grove Management Company LLC** 

Prepared by:

**Golder Associates Inc., Member of WSP** 1601 S. Mopac Expy, Suite 325D, Austin, Texas, USA 78746

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### **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
NA	Not Applicable
OGSES	Oak Grove Steam Electric Station
SSI	Statistically Significant Increase
SSL	Statistically Significant Level
T.A.C.	Texas Administrative Code
USEPA	United States Environmental Protection Agency

### **DOCUMENT REVISION RECORD**

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

### **EXECUTIVE SUMMARY**

Golder Associates USA Inc. (Golder), Member of WSP, has prepared this report on behalf of Oak Grove Management Company LLC 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 Ash Landfill 1 (the "CCR unit") at the Oak Grove Steam Electric Station (OGSES) in Robertson 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 the Ash Landfill 1 was established in September 2017. Statistically significant increases (SSIs) above background prediction limits were identified for several Appendix III parameters as part of the 2018 through 2020 Detection Monitoring events; however, Alternate Source Demonstrations were completed which indicated that a source other than the CCR unit caused the SSIs. During 2021, SSIs above background prediction limits were also identified for several Appendix III constituents, including for boron in well MW-07 and sulfate in wells MW-07 and MW-08R. 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 requirements 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 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 Ash Landfill 1 is currently in a Detection Monitoring Program. Golder collected the initial Detection Monitoring Program groundwater samples from the Ash Landfill 1 CCR monitoring well network in October 2017. Subsequent Detection Monitoring Program groundwater samples have been collected on a semi-annual basis since that time. Data evaluation is completed using procedures described in the Statistical Analysis Plan (PBW, 2017) to identify SSIs of Appendix III parameters over background concentrations. The Detection Monitoring Program sampling dates and parameters are summarized in the following table:

Falameters	SSIs	Program Established				
		Program Established				
Appendix III	No	No				
		No				
Appondix III	Voc	(Alternate Source				
Appendix III	165	Demonstration				
		Completed)				
		No				
Appandix III	Vee	(Alternate Source				
Appendix III	res	Demonstration				
		Completed)				
		No				
Annendix III	Vee	(Alternate Source				
Appendix III	res	Demonstration				
		Completed)				
		To Be Determined				
Annendix III	Vee	(Alternate Source				
Appendix III	res	Currently Being				
		Assessed)				
	Appendix III Appendix III Appendix III Appendix III Appendix III Appendix III	Appendix IIINoAppendix IIIYesAppendix IIIYesAppendix IIIYesAppendix IIIYesAppendix IIIYes				

#### **Detection Monitoring Program Summary**

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

November 2022

Source Demonstration based on the 2020 sample data is presented in Attachment 2 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 analytical data from the 2021 semi-annual Detection Monitoring Program sampling event was conducted in October 2021. The analytical data from the 2021 semi-annual Detection Monitoring Program sampling events were evaluated using procedures described in the Statistical Analysis Plan to identify SSIs of Appendix III parameters over background concentrations. SSIs of Appendix III parameters over background concentrations were identified for two constituents (boron and sulfate) for which SSIs had been identified in previous years and 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 SSIs, 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 conducted in June and October 2021. The number of groundwater samples that were collected for analysis of 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 units and monitoring wells is provided as Figure 1. No CCR wells were installed or decommissioned in 2021.

Water elevations measured in the CCR wells during the semi-annual groundwater sampling events were used to develop groundwater potentiometric surface maps, which are presented in Attachment 3. The inferred direction of groundwater flow near the Ash Landfill 1 was generally to the northeast during both semi-annual ground sampling events in 2021.

An Alternate Source Demonstration was completed in March 2021 in accordance with §257.94(e)(2), which documented that a source other than Ash Landfill 1 caused the SSIs detected over background levels during the 2020 Detection Monitoring Program sampling events. Per §257.94(e)(2) a copy of the 2020 Alternate Source Demonstration is provided in Attachment 2 in this annual report.

# 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 Oak Grove Ash Landfill 1 on January 24, 2022.
- Continue the Detection Monitoring Program in accordance with applicable provisions of §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.

### 6.0 **REFERENCES**

Pastor, Behling & Wheeler, LLC, 2017. Coal Combustion Residual Rule Statistical Analysis Plan, Oak Grove Steam Electric Station, Ash Landfill, Robertson County, Texas.

# Signature Page

### Golder Associates Inc.

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Patrick J. Behling Principal Engineer



Willia V-

William F. Vienne Senior Hydrogeologist



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FIGURES



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PROJECT NO. 19122262

	YYYY-MM-DD		2020-01-23	
	DESIGNED		AJD	
D	PREPARED		AJD	
	REVIEWED		WFV	
	APPROVED		WFV	
		REV.		FIGURE
		0		1

TABLES

Table 1
Statistical Background Value
OGSES Ash Landfill 1

	Statistical
	Background
Parameter	Value
Boron (mg/L)	0.124
Calcium (mg/L)	74.9
Chloride (mg/L)	353
Fluoride (mg/L)	0.4
	6.31
	7.09
Sulfate (mg/L)	97.4
Total Dissolved Solids (mg/L)	948

### TABLE 2 APPENDIX III ANALYTICAL RESULTS OGSES ASH LANDFILL 1

Sample	Date	В	Са	CI	F	pН	SO <sub>4</sub>	TDS					
Location	Sampled	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)	(mg/L)					
Upgradient Wel	ls												
AL-10	11/04/15	0.0682	34.5	149	0.149 J	6.86	72.6	590					
	12/18/15	0.0539	37.5	81	0.15 J	6.45	20.6	414					
	02/10/16	0.0637	48.6	108	0.197 J	6.75	34.9	599					
	04/15/16	0.0573	44.8	86	0.133	6.51	23.6	549					
	06/16/16	0.0915	34.7	66.7	0.155 J	6.44	23.5	436					
	08/25/16	0.105	87.5	444	<0.1	6.61	96.3	1,120					
	10/04/16	0.0756	35.1	57.3	0.278 J	6.92	20.1	507					
	12/22/16	0.0759	32.5	57.2	0.195 J	6.78	21.5	527					
	10/02/17	0.0973	27	50.6	0.120 J	6.85	12.2	398					
	06/04/18	0.0875	21.9	62.1	0.183 J	6.67	11.6	362					
	09/06/18	0.113	21.9	56.7	0.260 J	6.66	11.8	371					
	05/17/19	0.114	16.8	67.9	0.262 J	6.64	12.4	340					
	08/20/19	0.115	18.8	66.2	0.363 J	0.363 J 6.87 11.8							
	05/07/20	0.128	18.8	52.2	<0.100	6.78	11.1	317					
	09/09/20	0.139	16.8	49.2	0.208 J	6.86	10.6	301					
	06/16/21	0.107	15.2	41.9	0.27 J	6.82	9.92	267					
	10/12/21	0.0878	15.1	51.4	<0.1	6.82	9.84	269					
MW-02	11/04/15	0.064	32.5	138	0.135 J	6.92	71.4	539					
	12/18/15	0.0476	29	61.7	0.118 J	6.83	15.9	308					
	02/10/16	0.0853	25.4	83.5	0.229 J	6.63	34	320					
	04/15/16	0.0597	39.6	68	0.102	6.51	18.1	440					
	06/16/16	0.106	26.5	87.8	0.161 J	6.89	34.8	343					
	08/25/16	0.0492	12.9	21.9	0.164 J	6.58	22.4	163					
	10/04/16	0.113	01.4	105	0.185 J	0.09	97.4	<u> </u>					
	12/21/10	0.11	47.0	100	0.293 J	0.70	0.67	<u> </u>					
	06/04/18	0.0307	82.4	42.4 275	0.100	6.28	9.07	740					
	00/04/10	0.144	70.9	275	0.1393	6.02	121	872					
	05/17/19	0.0981	20	67.6	0.321.1	6.63	31.1	306					
	08/20/19	0.0875	19.9	53.8	0.558	6 59	20.1	260					
	05/07/20	0.0996	11.5	2.87	<0.100	6.63	6.14	106					
	09/09/20	0.166	55.6	210	0.287 J	6.76	99.2	592					
	06/16/21	0.0756	48	164	0.977	6.62	35.9	646					
	10/12/21	0.0848	23.8	56.6	0.36	6.62	20.7	245					
Downgradient V	Vells												
MW-05	11/04/15	0.0628	15.4	64.8	0.272 J	7.11	13.6	285					
	12/18/15	0.0621	13	60.2	0.476	6.52	10.5	232					
	02/10/16	0.0447	14	59.7	0.397 J	6.67	11.9	235					
	04/15/16	0.0458	14.3	55.4	0.284	6.42	10.7	288					
	06/15/16	0.058	14.2	60.4	0.306 J	6.61	11.8	269					
	08/24/16	0.0877	13.1	63	0.262 J	6.75	11.8	287					
	10/04/16	0.059	15.4	57.9	0.477	6.87	10.9	253					
	12/22/16	0.0759	61.4	264	0.446	6.63	55.6	778					
	10/02/17	0.0665	17.5	58.6	0.295 J	6.89	10.4	246					
	06/05/18	0.0739	16.8	60	0.391 J	6.43	12.1	253					
	09/07/18	0.077	15.8	63.3	0.392 J	6.11	10.6	249					
	05/1//19	0.0686	13.5	66.4	0.462	6.57	11.2	257					
	08/20/19	0.079	10	00./	0.514	0.78	10.8	263					
	05/07/20	0.0985		/1.ð	0.344 J	0.00 6.94	10.0	204					
	09/09/20	0.201	20.5 47.7	/ 9.0 77 7	0.3/2 J	0.01	00.5	407					
	10/10/21	0.0703	20.0	11.1 83.6	0.413	0.09	11 7	200					
	10/12/21 10/12/2021 DLIP	0.0013	20.9	85.5	0.433	6.52	12.1	202					
µ		0.01000	20.0	30.0	0.720	0.04	12.1	212					

### TABLE 2 APPENDIX III ANALYTICAL RESULTS OGSES ASH LANDFILL 1

Sample	Date	В	Са	CI	F	pН	SO₄	TDS			
Location	Sampled	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)	(mg/L)			
MW-07	11/03/15	0.0483	8.57	20.2	0.289 J	6.42	11.5	276			
	12/17/15	0.0539	8.75	17.7	0.319 J	6.86	14.7	243			
	02/09/16	0.0547	13.3	28.9	0.276 J	7.18	25.3	283			
	04/15/16	0.0567	10	20.9	0.187	6.71	16	341			
	06/15/16	0.0639	10.5	22.9	0.226 J	6.75	23.2	294			
	08/24/16	0.0691	9.58	20.4	0.159 J	6.89	21.8	290			
	10/04/16	0.0549	10.3	15.6	0.277 J	6.82	17.1	256			
	12/22/16	0.054	12.5	22.9	0.229 J	6.29	34.7	262			
	10/02/17	0.0733	13.9	15.8	0.178 J	6.59	38.4	298			
	06/05/18	0.105	17.5	15.7	0.169 J	5.98	61.1	316			
	09/07/18	0.151	19.7	21.5	0.250 J	6.18	80.3	357			
	11/6/2018 resample	0.154									
	05/17/19	0.132	17.1	20.2	0.244 J	6.83	84.1	355			
	08/19/19	0.215	22.8	19.7	0.367 J	6.77	100	385			
	05/07/20	0.302	29.7	22.4	0.234 J	6.84	123	432			
	09/09/20	0.297	26.9	24.7	0.302 J	6.58	121	413			
	06/16/21	0.186	25.8	26.2	0.378 J	6.84	108	404			
	6/16/21 DUP	0.177	25.5	26.6	0.378 J	6.84	110	399			
	10/13/21	0.181	31.6	29.6	0.353	6.85	130	422			
MW-08	11/04/15	0.0631	120	599	0.17 J	6.81	138	2,070			
	12/18/15	0.0604	70.4	488	0.158 J	6.78	49.8	1,140			
	02/09/16	0.0695	140	612	0.175 J	6.42	170	1,530			
	04/15/16	0.0726	133	566	<0.1	6.61	139	1,680			
	06/16/16	0.0677	76.6	520	<0.1	6.76	83.6	1,090			
	8/2016				Destroyed		-	-			
MW-08R	12/22/16	0.0702	32.4	166	0.355 J	6.93	39.7	617			
	03/21/17	0.0662	117	563	0.2 J	5.83	98.3	1,220			
	04/20/17	0.0696	115	560	0.149 J	5.91	94.9	1,190			
	10/02/17	0.061	13.1	14.4	<0.100	6.63	28.7	243			
	06/05/18	0.082	18.9	53.9	0.138 J	6.37	9.66	302			
	09/07/18	0.0921	106	504	0.242 J	5.84	96.9	1,550			
	11/6/2018 resample		15.7	19				268			
	05/17/19	0.102	16.7	69.8	0.269 J	6.54	12.4	326			
	08/20/19	0.096	24.9	48	0.501	6.84	30.7	255			
	05/07/20	0.122	19	51.8	0.117 J	6.83	11.1	320			
	09/09/20	0.0977	15.8	55.5 42.5	0.344 J	0.08	19.0	250			
	00/10/21	0.116	15.3	43.5	0.203 J	0.70	9.20	200			
	10/12/21	0.107	32.0	200		0.70	74.0	0/4 500			
10100-09	11/03/15	0.0722	36.4	155	0.149 J	6.45 6.49	74.9	583			
	12/10/13	0.077	40.3	15/	0.200 J	0.40	03.1 00	020 115			
	02/09/10	0.072/	10.4 10.0	150	0.102 J	6 / 1	00 80 0	560			
	04/15/10	0.0734	42.2	131	<0.1	6.52	00.9	500			
	08/25/16	0.0778	45.1	105	<0.1	6.76	90.7	715			
	10/04/16	0.0029	43.0	170	~0.1 0.256 L	6.64	108	648			
	12/22/16	0.0003	42.6	200	0.250 J	6.87	116	701			
	10/02/17	0.0770	58.2	140	<0.1000	6 76	95.3	433			
	06/04/18	0.100	21.7	6 4 8	0.162.1	6.28	6.08	135			
	09/06/18	0.0999	49.8	186	0.134.1	5.20	104	704			
	11/6/2018 resample						58.6				
	05/17/19	0 12	17.2	366	0 541	6 72	53.2	935			
	08/20/19	0.117	26	61.2	0.359 J	6.96	22.3	331			
	05/07/20	0.0988	20.2	45.1	0.234.1	6.68	17.3	212			
	09/09/20	0.123	48.5	156	0.152.1	6.72	99.6	468			
	06/16/21	0.0682	16.3	4.18	<0.100	6.84	8,19	127			
	10/12/21	0.0821	20.7	29.9	<0.1	6.84	31.2	223			
								/			

Notes:

1. Abbreviations: mg/L - milligrams per liter; TDS - total dissolved solids; s.u. - standard units.

2. J - concentration is below method quantitation limit; result is an estimate.

LABORATORY ANALYTICAL REPORTS

ATTACHMENT 1



June 24, 2021

Will Vienne Golder 2201 Double Creek Dr #4004 Round Rock, Texas 78664 TEL: (512) 671-3434 FAX: (512) 671-3446 RE: Luminant-OGSES-CCR-Ash Landfill 1

Order No.: 2106123

Dear Will Vienne:

DHL Analytical, Inc. received 7 sample(s) on 6/18/2021 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



2300 Double Creek Drive • Round Rock, TX 78664 • Phone (512) 388-8222 • FAX (512) 388-8229 www.dhlanalytical.com

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Miscellaneous Documents	
CaseNarrative 2106123	
WorkOrderSampleSummary 2106123	
PrepDatesReport 2106123	
AnalyticalDatesReport 2106123	
Analytical Report 2106123	
AnalyticalQCSummaryReport 2106123	
MQLSummaryReport 2106123	



2300 Double Creek Dr. Round Rock, TX 78664

### Phone 512.388.8222

# CHAIN-OF-CUSTODY

Web: www.dhlanalytical.com

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AL-10	02	6-16-21	1105	W	P	2		X		K																X				
MW-09	03	6-16-21	1225	W	P	2		X		Y																X				
MW-DQR	04	6-16-21	1345	W	P	2		X		メ																X				
MW-05	<i>Q</i> 5	6-16-21	1445	h	P	2		X	_	X																X				
MW-07	06	6-16-21	1540	W	P	2		X		М																X				
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### Eric Lau

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

<u>Appendix III Parameters:</u> 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





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	Sample	Receipt Chec	cklist		
Client Name Golder			Date Recei	ved: (	6/18/2021
Work Order Number 2106123	Received by: EL				
Checklist completed by:	6/18/202 Date Carrier name:	1 Hand Delivered	Reviewed b	y <u>(j)</u> Initials	6/18/2021 Date
Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Present	
Custody seals intact on shippping container/con	oler?	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 complian	ice?	Yes 🗹	No 🗌	<b>4.9</b> °C	
Water - VOA vials have zero headspace?		Yes	No 🗌	No VOA vials s	ubmitted 🗹
Water - pH<2 acceptable upon receipt?		Yes 🗹	No 🗌		T# 13171
		Adjusted?	10	Checked b	x_R.A
Water - ph>9 (S) or ph>10 (CN) acceptable upo	on receipt?	Yes	No 🗌	NA 🗹 🛛 LO	Τ#
		Adjusted?		Checked b	y
Any No response must be detailed in the comm	ents section below.				
Client contacted:	Date contacted:		Pers	son contacted	
Contacted by:	Regarding:				
Comments:					
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	and an	Nar Maral Art Sama Initian San San San San San San San San San S	n an the second seco	Trans Tarland Franchis Cardeling from an Transit of The Core and State and State	
Corrective Action:					
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Page 1 of 1

Lab	orat	tory Name: DHL Analytical, Inc.						
Lab	orat	tory Review Checklist: Reportable Data						
Proje	ect Na	me: Luminant-OGSES-CCR-Ash Landfill 1 LRC I	Date: 6/24/2021					
Revie	ewer I	Name: Angie O'Donnell Labor	atory Work Order: 2106123					
Prep	Batcl	h Number(s): See Prep Dates Report Run B	Satch: See Analytical Dates Report					
#1	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
		Chain-of-Custody (C-O-C)				ľ		
R1	OI	1) Did samples meet the laboratory's standard conditions of sampl	e acceptability upon receipt?	Χ				R1-01
		2) Were all departures from standard conditions described in an ex	cception report?			Χ		
R2	OI	Sample and Quality Control (QC) Identification						
		1) Are all field sample ID numbers cross-referenced to the laborate	ory ID numbers?	X				
<b>D</b> 2	OI	2) Are all laboratory ID numbers cross-referenced to the correspon	X					
R3	OI			V				
		1) were all samples prepared and analyzed within holding times? 2) Other than those results $\leq MOL$ were all other raw values brad	veted by calibration standards?	Λ V				
		3) Were calculations checked by a peer or supervisor?	Refer by calibration standards:	A X				
		4) Were all analyte identifications checked by a peer or supervisor	9	X				
		5) Were sample detection limits reported for all analytes not detect	ted?	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 s	amples?			Χ		
		8) Were bulk soils/solids samples for volatile analysis extracted with	ith methanol per EPA Method 5035?			Χ		
		9) If required for the project, TICs reported?				Χ		
R4	0	Surrogate Recovery Data						
		1) Were surrogates added prior to extraction?				Χ		
		2) Were surrogate percent recoveries in all samples within the labor	oratory QC limits?			X		
R5	OI	Test Reports/Summary Forms for Blank Samples		N.Y.				
		1) Were appropriate type(s) of blanks analyzed?		X				
		2) Were blanks analyzed at the appropriate frequency?	Х					
		applicable cleanup procedures?	Х					
		4) Were blank concentrations < MDL?	X					
		5) For analyte(s) detected in a blank sample, was the concentration	n, unadjusted for sample specific					
		factors, in all associated field samples, greater than 10 times the c	oncentration in the blank sample?			X		
<b>R6</b>	OI	Laboratory Control Samples (LCS):						
		1) Were all COCs included in the LCS?		Χ				
		2) Was each LCS taken through the entire analytical procedure, in	cluding 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?	Х				
		5) Does the detectability data document the laboratory's capability to calculate the SDL s?	to detect the COCs at the MDL used	Х				
		6) Was the LCSD RPD within OC limits (if applicable)?		X				
<b>R</b> 7	OI	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data						
		1) Were the project/method specified analytes included in the MS	and MSD?	Χ				
		2) Were MS/MSD analyzed at the appropriate frequency?		Χ				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory C	QC limits?		Χ			R7-03
		4) Were MS/MSD RPDs within laboratory QC limits?		Χ				
<b>R8</b>	OI	Analytical Duplicate Data						
		1) Were appropriate analytical duplicates analyzed for each matrix	2	X				
		2) Were analytical duplicates analyzed at the appropriate frequence	$\frac{y}{2}$	X				
DO	OI	3) were RPDs of relative standard deviations within the laboratory Method Quantitation Limits (MQLs):	QC IImits?	λ				
К9	01	1) Are the MOLs for each method analyte included in the laborato	ry data nackage?	v				
		2) Do the MOLs correspond to the concentration of the lowest non	-zero calibration standard?	X				
		3) Are unadjusted MQLs and DCSs included in the laboratory data	a package?	X				
R10	OI	Other Problems/Anomalies						
		1) Are all known problems/anomalies/special conditions noted in t	his LRC and ER?	Χ				
		2) Was applicable and available technology used to lower the SDL	to minimize the matrix interference	v				
		affects on the sample results?		л				
		<b>3)</b> Is the laboratory NELAC-accredited under the Texas Laborator analytes, matrices and methods associated with this laboratory data	y Accreditation Program for the a package?	X				

Lab	ora	tory Name: DHL Analytical, Inc.						
Lab	ora	tory Review Checklist (continued): Supporting	Data					
Proje	ct Na	ame: Luminant-OGSES-CCR-Ash Landfill 1 LRC 1	Date: 6/24/2021					
Revie	wer	Name: Angie O'Donnell Labor	atory Work Order: 2106123					
Prep	Batc	h Number(s): See Prep Dates Report Run B	Batch: See Analytical Dates Report					
#1	$A^2$	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
<b>S1</b>	OI	Initial Calibration (ICAL)						
		1) Were recommendations and/or relative recommendations factors for each a	nalyte within OC limits?	v				
		2) Were percent RSDs or correlation coefficient criteria met?	haryte within QC mints:					
		3) Was the number of standards recommended in the method used f	X					
		4) Were all points generated between the lowest and highest standard	X					
		5) Are ICAL data available for all instruments used?	X					
		6) Has the initial calibration curve been verified using an appropriat	te 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?		Χ				
		2) Were percent differences for each analyte within the method-requ	uired QC limits?	Χ				
		3) Was the ICAL curve verified for each analyte?		Χ				
		4) Was the absolute value of the analyte concentration in the inorga	nic CCB < MDL?	Χ				
<b>S3</b>	0	Mass Spectral Tuning:						
		1) Was the appropriate compound for the method used for tuning?		Χ				
	_	2) Were ion abundance data within the method-required QC limits?		X				
<b>S4</b>	0	Internal Standards (IS):						
~ -		1) Were IS area counts and retention times within the method-requi	red QC limits?	X				
<b>S</b> 5	OI	Raw Data (NELAC Section 5.5.10)						
		1) Were the raw data (for example, chromatograms, spectral data) re	<u>X</u>					
	0	2) Were data associated with manual integrations flagged on the ray	Χ					
86	0	Dual Column Confirmation			v			
67	0	1) Did dual column confirmation results meet the method-required (			Λ			
5/	0	1) If TICs were requested were the mass spectra and TIC data subj			v			
68	T	Interference Check Sample (ICS) Posults:	eet to appropriate enecks:			Λ		
30	1	1) Were percent recoveries within method OC limits?		v				
<u>89</u>	T	Serial Dilutions Post Digestion Snikes and Method of Standard	Additions	Λ				
57	1	1) Ware percent differences recoveries and the linearity within	n the OC limits specified in the					
		method?	n the QC minits specified in the		X			<b>S9-01</b>
S10	OI	Method Detection Limit (MDL) Studies						
		1) Was a MDL study performed for each reported analyte?		Χ				
		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 proficien	cy tests or evaluation studies?	X				
<u>S12</u>	OI	Standards Documentation		N				
612	01	1) Are all standards used in the analyses NIST-traceable or obtained	I from other appropriate sources?	X				
813	OI	Compound/Analyte Identification Procedures	4 19	N				
614	OI	1) Are the procedures for compound/analyte identification documer	ited ?	Χ				
514		1) Was DOC conducted consistent with NELAC Chanter 5	ndix C2	v				
		2) Is documentation of the analyst's competency up to date and on	file?					
<b>S15</b>	OI	Verification/Validation Documentation for Methods (NFLAC C	hapter 5)	Λ				
515		1) Are all the methods used to accurate the data 1	import of					
		annlicable?	i, verified, and validated, where	Х				
011	67							
<u>816</u>	OI	Laboratory Standard Operating Procedures (SOPs):						
		1) Are laboratory SOPs current and on file for each method perform	ned?	X				

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 1 the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

<sup>2</sup> 

<sup>3</sup> NA = Not applicable.

<sup>4</sup> NR = Not Reviewed.

<sup>5</sup> 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:

R4

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).
  - 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

her hand

06/24/21 Date

9

CLIENT:GolderProject:Luminant-OGSES-CCR-Ash Landfill 1Lab Order:2106123

### 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

Exception Report R1-01

The samples were received and log-in performed on 6/18/2021. A total of 7 samples were received and analyzed. The samples arrived in good condition and were properly packaged.

Exception Report R7-03

For Anions Analysis, for Batch 100964, the recoveries of up to two anions for the Matrix Spike and Matrix Spike Duplicate(s) (2106122-04, -08 MS/MSD) were below the method control limits. These are flagged accordingly in the QC Summary Report. These anions were within method control limits in the associated LCS. No further corrective action was taken.

**Exception Report S9-01** 

For Metals Analysis, for Batch 100960, the RPD of Boron for the Serial Dilution (2106123-02 SD) was above the method control limit. This is flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated Post Digestion Spike. No further corrective action was taken.

\_

**Date:** 24-Jun-21

CLIENT: Project: Lab Order:	Golder Luminant-OGSES-C 2106123	CCR-Ash Landfill 1	Work Order Sample Summary					
Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved				
2106123-01	MW-02		06/16/21 09:30 AM	6/18/2021				
2106123-02	AL-10		06/16/21 11:05 AM	6/18/2021				
2106123-03	MW-09		06/16/21 12:25 PM	6/18/2021				
2106123-04	MW-08R		06/16/21 01:45 PM	6/18/2021				
2106123-05	MW-05		06/16/21 02:45 PM	6/18/2021				
2106123-06	MW-07		06/16/21 03:40 PM	6/18/2021				
2106123-07	DUP-1		06/16/21 03:40 PM	6/18/2021				

Lab Order:2106123Client:Golder

Project: Luminant-OGSES-CCR-Ash Landf

# PREP DATES REPORT

Sample ID	Client Sample ID	<b>Collection Date</b>	Matrix	Test Number	Test Name	Prep Date	Batch ID
2106123-01A	MW-02	06/16/21 09:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
	MW-02	06/16/21 09:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
	MW-02	06/16/21 09:30 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
2106123-01B	MW-02	06/16/21 09:30 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-02	06/16/21 09:30 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-02	06/16/21 09:30 AM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962
2106123-02A	AL-10	06/16/21 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
	AL-10	06/16/21 11:05 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
2106123-02B	AL-10	06/16/21 11:05 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	AL-10	06/16/21 11:05 AM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	AL-10	06/16/21 11:05 AM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962
2106123-03A	MW-09	06/16/21 12:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
	MW-09	06/16/21 12:25 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
2106123-03B	MW-09	06/16/21 12:25 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-09	06/16/21 12:25 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-09	06/16/21 12:25 PM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962
2106123-04A	MW-08R	06/16/21 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
	MW-08R	06/16/21 01:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
2106123-04B	MW-08R	06/16/21 01:45 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-08R	06/16/21 01:45 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-08R	06/16/21 01:45 PM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962
2106123-05A	MW-05	06/16/21 02:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
	MW-05	06/16/21 02:45 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
2106123-05B	MW-05	06/16/21 02:45 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-05	06/16/21 02:45 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-05	06/16/21 02:45 PM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962
2106123-06A	MW-07	06/16/21 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
	MW-07	06/16/21 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960

Page 1 of 2

Lab Order:2106123Client:Golder

Project: Luminant-OGSES-CCR-Ash Landf

# PREP DATES REPORT

Sample ID	Client Sample ID	<b>Collection Date</b>	Matrix	Test Number	Test Name	Prep Date	Batch ID
2106123-06B	MW-07	06/16/21 03:40 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-07	06/16/21 03:40 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	MW-07	06/16/21 03:40 PM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962
2106123-07A	DUP-1	06/16/21 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
	DUP-1	06/16/21 03:40 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/21/21 08:48 AM	100960
2106123-07B	DUP-1	06/16/21 03:40 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	DUP-1	06/16/21 03:40 PM	Aqueous	E300	Anion Preparation	06/21/21 09:53 AM	100964
	DUP-1	06/16/21 03:40 PM	Aqueous	M2540C	TDS Preparation	06/21/21 09:12 AM	100962

**Lab Order:** 2106123

Client: Golder

Project: Luminant-OGSES-CCR-Ash Landf

# ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2106123-01A	MW-02	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	10	06/22/21 02:30 PM	ICP-MS4_210622B
	MW-02	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 02:57 PM	ICP-MS4_210622B
	MW-02	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 12:08 PM	ICP-MS4_210622B
2106123-01B	MW-02	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 10:50 PM	IC2_210621A
	MW-02	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 04:42 AM	IC2_210621A
	MW-02	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
2106123-02A	AL-10	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 12:04 PM	ICP-MS4_210622B
	AL-10	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 02:53 PM	ICP-MS4_210622B
2106123-02B	AL-10	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 11:06 PM	IC2_210621A
	AL-10	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 04:58 AM	IC2_210621A
	AL-10	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
2106123-03A	MW-09	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 12:10 PM	ICP-MS4_210622B
	MW-09	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 02:59 PM	ICP-MS4_210622B
2106123-03B	MW-09	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 11:22 PM	IC2_210621A
	MW-09	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 06:34 AM	IC2_210621A
	MW-09	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
2106123-04A	MW-08R	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 12:12 PM	ICP-MS4_210622B
	MW-08R	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 03:01 PM	ICP-MS4_210622B
2106123-04B	MW-08R	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 06:50 AM	IC2_210621A
	MW-08R	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 11:38 PM	IC2_210621A
	MW-08R	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
2106123-05A	MW-05	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 12:14 PM	ICP-MS4_210622B
	MW-05	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 03:03 PM	ICP-MS4_210622B
2106123-05B	MW-05	Aqueous	E300	Anions by IC method - Water	100964	10	06/21/21 11:54 PM	IC2_210621A
	MW-05	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 07:06 AM	IC2_210621A
	MW-05	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
2106123-06A	MW-07	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 12:16 PM	ICP-MS4_210622B
	MW-07	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	2	06/22/21 02:32 PM	ICP-MS4_210622B

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**Lab Order:** 2106123

Client: Golder

Project: Luminant-OGSES-CCR-Ash Landf

# ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2106123-06B	MW-07	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 07:22 AM	IC2_210621A
	MW-07	Aqueous	E300	Anions by IC method - Water	100964	10	06/22/21 12:10 AM	IC2_210621A
	MW-07	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
2106123-07A	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	1	06/22/21 12:18 PM	ICP-MS4_210622B
	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	100960	2	06/22/21 02:34 PM	ICP-MS4_210622B
2106123-07B	DUP-1	Aqueous	E300	Anions by IC method - Water	100964	10	06/22/21 12:26 AM	IC2_210621A
	DUP-1	Aqueous	E300	Anions by IC method - Water	100964	1	06/22/21 07:38 AM	IC2_210621A
	DUP-1	Aqueous	M2540C	Total Dissolved Solids	100962	1	06/21/21 02:10 PM	WC_210621B
TRACE METAL	S: ICP-MS - WATER		SW602	20B				Analyst: SP
-------------	--------------------	----------------	-------	-------	------------	--------------------	-------------	---------------
Analyses		Result	SDL	RL	Qual	Units	DF	Date Analyzed
Lab Order:	2106123				Ma	atrix: AQUI	EOUS	
Project No:	19122262			Co	llection ]	Date: 06/16	/21 09:30 A	М
Project:	Luminant-OGSES-CCF	R-Ash Landfill	1		La	<b>b ID:</b> 21061	23-01	
CLIENT:	Golder			Clier	nt Sampl	e ID: MW-(	02	

TRACE METALS: ICP-MS - WATER		SW60	20B			Analyst: <b>SP</b>
Boron	0.0756	0.0100	0.0300	mg/L	1	06/22/21 02:57 PM
Calcium	48.0	1.00	3.00	mg/L	10	06/22/21 02:30 PM
ANIONS BY IC METHOD - WATER		E30	00			Analyst: <b>BM</b>
Chloride	164	3.00	10.0	mg/L	10	06/21/21 10:50 PM
Fluoride	0.977	0.100	0.400	mg/L	1	06/22/21 04:42 AM
Sulfate	35.9	1.00	3.00	mg/L	1	06/22/21 04:42 AM
TOTAL DISSOLVED SOLIDS		M254	10C			Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	646	10.0	10.0	mg/L	1	06/21/21 02:10 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	Client Sa
Project:	Luminant-OGSES-CCR-Ash Landfill 1	
Project No:	19122262	Collection
Lab Order:	2106123	

### Client Sample ID: AL-10 Lab ID: 2106123-02 Collection Date: 06/16/21 11:05 AM

#### Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WAT	ER	SW60	20B				Analyst: SP
Boron	0.107	0.0100	0.0300		mg/L	1	06/22/21 02:53 PM
Calcium	15.2	0.100	0.300		mg/L	1	06/22/21 12:04 PM
ANIONS BY IC METHOD - WATE	R	E30	0				Analyst: <b>BM</b>
Chloride	41.9	0.300	1.00		mg/L	1	06/22/21 04:58 AM
Fluoride	0.270	0.100	0.400	J	mg/L	1	06/22/21 04:58 AM
Sulfate	9.92	1.00	3.00		mg/L	1	06/22/21 04:58 AM
TOTAL DISSOLVED SOLIDS		M254	0C				Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	267	10.0	10.0		mg/L	1	06/21/21 02:10 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
Project:	Luminant-OGSES-CCR-Ash Landfill 1
Project No:	19122262
Lab Order:	2106123

### Client Sample ID: MW-09 Lab ID: 2106123-03 Collection Date: 06/16/21 12:25 PM

Matrice AOUEOUS

### Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WAT	ER	SW60	20B			Analyst: SP
Boron	0.0682	0.0100	0.0300	mg/L	1	06/22/21 02:59 PM
Calcium	16.3	0.100	0.300	mg/L	1	06/22/21 12:10 PM
ANIONS BY IC METHOD - WATE	R	E30	0			Analyst: <b>BM</b>
Chloride	4.18	0.300	1.00	mg/L	1	06/22/21 06:34 AM
Fluoride	<0.100	0.100	0.400	mg/L	1	06/22/21 06:34 AM
Sulfate	8.19	1.00	3.00	mg/L	1	06/22/21 06:34 AM
TOTAL DISSOLVED SOLIDS		M254	0C			Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	127	10.0	10.0	mg/L	1	06/21/21 02:10 PM

<b>Oualifiers</b> :	ND - Not Detected at the SDL
Quanner 5.	THE THE DELECTED II THE SEE

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
Project:	Luminant-OGSES-CCR-Ash Landfill 1
Project No:	19122262
Lab Order:	2106123

# Client Sample ID: MW-08R Lab ID: 2106123-04

**Collection Date:** 06/16/21 01:45 PM

### Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW60	20B				Analyst: SP
Boron	0.116	0.0100	0.0300		mg/L	1	06/22/21 03:01 PM
Calcium	15.3	0.100	0.300		mg/L	1	06/22/21 12:12 PM
ANIONS BY IC METHOD - WATER		E30	0				Analyst: <b>BM</b>
Chloride	43.5	0.300	1.00		mg/L	1	06/22/21 06:50 AM
Fluoride	0.263	0.100	0.400	J	mg/L	1	06/22/21 06:50 AM
Sulfate	9.26	1.00	3.00		mg/L	1	06/22/21 06:50 AM
TOTAL DISSOLVED SOLIDS		M254	0C				Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	266	10.0	10.0		mg/L	1	06/21/21 02:10 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

```
Date: 24-Jun-21
```

CLIENT:	Golder
Project:	Luminant-OGSES-CCR-Ash Landfill 1
<b>Project No:</b>	19122262
Lab Order:	2106123

### Client Sample ID: MW-05 Lab ID: 2106123-05 Collection Date: 06/16/21 02:45 PM

**onection Date:** 00/10/21 02.451

### Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATE	R	SW60	20B			Analyst: SP
Boron	0.0753	0.0100	0.0300	mg/L	1	06/22/21 03:03 PM
Calcium	17.7	0.100	0.300	mg/L	1	06/22/21 12:14 PM
ANIONS BY IC METHOD - WATER	2	E30	00			Analyst: BM
Chloride	77.7	3.00	10.0	mg/L	10	06/21/21 11:54 PM
Fluoride	0.415	0.100	0.400	mg/L	1	06/22/21 07:06 AM
Sulfate	10.0	1.00	3.00	mg/L	1	06/22/21 07:06 AM
TOTAL DISSOLVED SOLIDS		M254	IOC			Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	255	10.0	10.0	mg/L	1	06/21/21 02:10 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

SDL - Sample Detection Limit

C - Sample Result or QC discussed in Case Narrative

RL - Reporting Limit (MQL adjusted for moisture and sample size)

E - TPH pattern not Gas or Diesel Range Pattern

CLIENT:	Golder	Cl
Project:	Luminant-OGSES-CCR-Ash Landfill 1	
<b>Project No:</b>	19122262	(
Lab Order:	2106123	

# lient Sample ID: MW-07 Lab ID: 2106123-06

Collection Date: 06/16/21 03:40 PM

### Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATE	R	SW60	20B				Analyst: SP
Boron	0.186	0.0200	0.0600		mg/L	2	06/22/21 02:32 PM
Calcium	25.8	0.200	0.600		mg/L	2	06/22/21 02:32 PM
ANIONS BY IC METHOD - WATER	2	E300					Analyst: <b>BM</b>
Chloride	26.2	0.300	1.00		mg/L	1	06/22/21 07:22 AM
Fluoride	0.378	0.100	0.400	J	mg/L	1	06/22/21 07:22 AM
Sulfate	108	1.00	3.00		mg/L	1	06/22/21 07:22 AM
TOTAL DISSOLVED SOLIDS		M254	0C				Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	404	10.0	10.0		mg/L	1	06/21/21 02:10 PM

Qualifiers:	ND - Not Detected at the SDL
Quanners.	TO NOT Detected at the DDL

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

SDL - Sample Detection Limit

C - Sample Result or QC discussed in Case Narrative

RL - Reporting Limit (MQL adjusted for moisture and sample size)

E - TPH pattern not Gas or Diesel Range Pattern

CLIENT:	Golder
Project:	Luminant-OGSES-CCR-Ash Landfill 1
Project No:	19122262
Lab Order:	2106123

# Client Sample ID: DUP-1 Lab ID: 2106123-07

**Collection Date:** 06/16/21 03:40 PM

### Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATE	R	SW60	20B				Analyst: SP
Boron	0.177	0.0200	0.0600		mg/L	2	06/22/21 02:34 PM
Calcium	25.5	0.200	0.600		mg/L	2	06/22/21 02:34 PM
ANIONS BY IC METHOD - WATER		E300					Analyst: <b>BM</b>
Chloride	26.6	0.300	1.00		mg/L	1	06/22/21 07:38 AM
Fluoride	0.378	0.100	0.400	J	mg/L	1	06/22/21 07:38 AM
Sulfate	110	1.00	3.00		mg/L	1	06/22/21 07:38 AM
TOTAL DISSOLVED SOLIDS		M254	10C				Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	399	10.0	10.0		mg/L	1	06/21/21 02:10 PM

<b>Oualifiers:</b>	ND - Not Detected at the SDL
Quanner 5.	TID TIOL Deletted at the DDL

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

Page 1 of 9

# CLIENT:GolderWork Order:2106123

### 6123

# ANALYTICAL QC SUMMARY REPORT

Project: Luminant-OGSES-CCR-Ash Landfill 1

### RunID: ICP-MS4\_210428A

Sample ID: I	DCS2-100323	Batch ID:	100323		TestNo:	SW	/6020B		Units:	mg/l	_
SampType: I	DCS2	Run ID:	ICP-MS4	_210428A	Analysis	a Date: 4/2	8/2021 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: I	DCS4-100323	Batch ID:	100323		TestNo:	SW	/6020B		Units:	mg/l	-
SampType: I	DCS4	Run ID:	ICP-MS4	_210428A	Analysis	a Date: 4/2	8/2021 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

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

RL Reporting Limit

- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit
  - R RPD outside accepted control limits
  - S Spike Recovery outside control limits
  - N Parameter not NELAP certified

CLIENT:	G	older				۸N	лт ут	TCAT (				<b>PORT</b>
Work Ord	der: 2	106123										
Project:	L	uminant-	OGSES-C	CR-Ash L	andfill 1			RunII	): I	CP-MS4_2	210622	В
The QC dat 06A, 21061	ta in batch 1 23-07A	00960 ap	plies to the	following sa	mples: 2106	6123-01A, 2106	123-02A, 2	2106123-03A	, 2106123	3-04A, 21061	23-05A, 2	2106123-
Sample ID:	MB-10096	0	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L	
SampType:	MBLK		Run ID:	ICP-MS4	_210622B	Analysis	Date: 6/2	2/2021 11:56	:00 AM	Prep Date:	6/21/20	)21
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RI	PDLimit Qual
Calcium				<0.100	0.300							
Sample ID:	LCS-1009	60	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L	
SampType:	LCS		Run ID:	ICP-MS4	_210622B	Analysis	Date: 6/2	2/2021 11:58	:00 AM	Prep Date:	6/21/20	021
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RI	PDLimit Qual
Calcium				4.97	0.300	5.00	0	99.4	80	120		
Sample ID:	LCSD-100	960	Batch ID:	100960		TestNo:	sw	6020B		Units:	mg/L	
SampType:	LCSD		Run ID:	ICP-MS4	_210622B	Analysis	Date: 6/2	2/2021 12:00	:00 PM	Prep Date:	6/21/20	)21
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RI	PDLimit Qual
Calcium				5.11	0.300	5.00	0	102	80	120	2.82	15
Sample ID:	2106123-0	2A SD	Batch ID:	100960		TestNo: SW6020B				Units:	mg/L	
SampType:	SD		Run ID:	ICP-MS4	_210622B	Analysis	Analysis Date: 6/22/2021 12:06:00 PM			Prep Date:	6/21/20	)21
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RI	PDLimit Qual
Calcium				15.1	1.50	0	15.2				0.268	20
Sample ID:	2106123-0	2A PDS	Batch ID:	100960		TestNo:	sw	6020B		Units:	mg/L	
SampType:	PDS		Run ID:	ICP-MS4	_210622B	Analysis	Date: 6/2	2/2021 12:26	:00 PM	Prep Date:	6/21/20	021
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RI	PDLimit Qual
Calcium				19.5	0.300	5.00	15.2	86.4	75	125		
Sample ID:	2106123-0	2A MS	Batch ID:	100960		TestNo:	sw	/6020B		Units:	mg/L	
SampType:	MS		Run ID:	ICP-MS4	_210622B	Analysis	Date: 6/2	2/2021 12:29	:00 PM	Prep Date:	6/21/20	)21
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RI	PDLimit Qual
Calcium				20.3	0.300	5.00	15.2	104	75	125		
Sample ID:	2106123-0	2A MSD	Batch ID:	100960		TestNo:	sw	6020B		Units:	mg/L	
SampType:	MSD		Run ID:	ICP-MS4	_210622B	Analysis	Date: 6/2	2/2021 12:30	:00 PM	Prep Date:	6/21/20	021
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Calcium				19.7	0.300	5.00	15.2	90.5	75	125	3.25	15

**Qualifiers:** 

- В Analyte detected in the associated Method Blank
- Analyte detected between MDL and RL J ND
  - Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL
- DF Dilution Factor MDL Method Detection Limit
- R RPD outside accepted control limits

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- S Spike Recovery outside control limits
- Ν Parameter not NELAP certified

CLIENT:	Golder				AN	ALYT	ICAL (	QC SU	J <b>MMAR</b>	XY R	EPO	RT
Work Order: Project:	Luminant-	OGSES-C	CR-Ash L	andfill 1.			RunII	): I	CP-MS4_2	21062	2B	
Sample ID: MB-100	960	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L		
SampType: <b>MBLK</b>		Run ID:	ICP-MS4	_210622B	Analysis	s Date: <b>6/22</b>	2/2021 2:45:	00 PM	Prep Date:	6/21/	2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD	RPDLimit	t Qual
Boron			<0.0100	0.0300								
Sample ID: LCS-10	0960	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L		
SampType: <b>LCS</b>		Run ID:	ICP-MS4	_210622B	Analysis	s Date: 6/22	2/2021 2:47:	00 PM	Prep Date:	6/21/	2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD	RPDLimit	t Qual
Boron			0.218	0.0300	0.200	0	109	80	120			
Sample ID: LCSD-1	00960	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L		
SampType: <b>LCSD</b>		Run ID:	ICP-MS4	_210622B	Analysis	s Date: 6/22	2/2021 2:49:	00 PM	Prep Date:	6/21/	2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD	RPDLimit	t Qual
Boron			0.220	0.0300	0.200	0	110	80	120	0.692	15	
Sample ID: 2106123	3-02A SD	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L		
SampType: <b>SD</b>		Run ID:	ICP-MS4	_210622B	Analysis	s Date: 6/22	2/2021 2:55:	00 PM	Prep Date:	6/21/	2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD	RPDLimit	t Qual
Boron			0.155	0.150	0	0.107				36.3	20	R
Sample ID: 2106123	3-02A PDS	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L		
SampType: <b>PDS</b>		Run ID:	ICP-MS4	_210622B	Analysis	s Date: 6/22	2/2021 3:13:	00 PM	Prep Date:	6/21/	2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD	RPDLimit	t Qual
Boron			0.302	0.0300	0.200	0.107	97.7	75	125			
Sample ID: 2106123	3-02A MS	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L		
SampType: <b>MS</b>		Run ID:	ICP-MS4	_210622B	Analysis	s Date: 6/22	2/2021 3:16:	00 PM	Prep Date:	6/21/	2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD	RPDLimit	t Qual
Boron			0.310	0.0300	0.200	0.107	101	75	125			
Sample ID: 2106123	3-02A MSD	Batch ID:	100960		TestNo:	SW	6020B		Units:	mg/L		
SampType: <b>MSD</b>		Run ID:	ICP-MS4	_210622B	Analysis	s Date: 6/22	2/2021 3:18:	00 PM	Prep Date:	6/21/	2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD	RPDLimit	t Qual
Boron			0.315	0.0300	0.200	0.107	104	75	125	1.77	15	

**Qualifiers:** 

#### В Analyte detected in the associated Method Blank

- Analyte detected between MDL and RL J ND
  - Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit R RPD outside accepted control limits
  - S Spike Recovery outside control limits

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Ν Parameter not NELAP certified

CLIENT:	0.000	Golder				A	NALYT	ICAL (	QC SU	MMA	RY R	EPORT
Project:	er:	Luminant-	OGSES-C	CCR-Ash L	andfill 1			RunID	): I(	CP-MS4_	_210622	B
Sample ID:	ICV-210	622	Batch ID:	R115891		TestN	o: SW6	6020B		Units:	mg/L	
SampType:	ICV		Run ID:	ICP-MS4	_210622B	Analy	sis Date: <b>6/22</b>	/2021 10:53	:00 AM	Prep Date:		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD R	PDLimit Qual
Boron Calcium				0.101 2.49	0.0300 0.300	0.100 2.50	0 0	101 99.5	90 90	110 110		
Sample ID:	LCVL-2	10622	Batch ID:	R115891		TestN	o: <b>SW6</b>	6020B		Units:	mg/L	
SampType:	LCVL		Run ID:	ICP-MS4	_210622B	Analy	sis Date: <b>6/22</b>	/2021 11:03	:00 AM	Prep Date:	:	
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD R	PDLimit Qual
Boron Calcium				0.0200 0.111	0.0300 0.300	0.0200 0.100	0 0	100 111	80 80	120 120		
Sample ID:	CCV1-2	10622	Batch ID:	R115891		TestN	o: SW6	6020B		Units:	mg/L	
SampType:	ccv		Run ID:	ICP-MS4	_210622B	Analy	sis Date: <b>6/22</b>	/2021 11:44	:00 AM	Prep Date:		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD R	PDLimit Qual
Calcium				5.10	0.300	5.00	0	102	90	110		
Sample ID:	CCV2-2	10622	Batch ID:	R115891		TestN	o: SW6	6020B		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS4	_210622B	Analy	sis Date: <b>6/22</b>	/2021 12:32	:00 PM	Prep Date:	:	
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD R	PDLimit Qual
Calcium				4.94	0.300	5.00	0	98.8	90	110		
Sample ID:	CCV4-2	10622	Batch ID:	R115891		TestN	o: <b>SW6</b>	6020B		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS4	_210622B	Analy	sis Date: <b>6/22</b>	/2021 2:24:0	00 PM	Prep Date:	:	
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD R	PDLimit Qual
Boron				0.202	0.0300	0.200	0	101	90	110		
Calcium				4.92	0.300	5.00	0	98.4	90	110		
Sample ID:	CCV5-2	10622	Batch ID:	R115891		TestN	o: <b>SW</b> 6	6020B		Units:	mg/L	
SampType:	CCV		Run ID:	ICP-MS4	_210622B	Analy	sis Date: 6/22	/2021 2:38:0	00 PM	Prep Date:		
Analyte				Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD R	PDLimit Qual
Boron				0.199	0.0300	0.200	0	99.6 98.7	90 90	110 110		
Sampla ID:	001/6.2	10622	Botoh ID:	4.33	0.300	J.00	0 0: 0:	50.7	30		ma/l	
SampType:	CCV0-2	10022	Run ID:	ICP-MS4	210622B	Analy	o. 300	/2021 3:25:0	00 PM	Prep Date:	ing/∟	
Analvte				Result	 RL	SPK value	Ref Val	%REC	LowLimit	HiahLimit	%RPD R	PDLimit Qual
Boron				0.212	0.0300	0.200	0	106	90	110		
Qualifiers:	B J ND RL	Analyte dete Analyte dete Not Detected Reporting Li	ected in the a ected betwee d at the Met imit	associated Me in MDL and F hod Detectior	ethod Blank RL 1 Limit	DF MDL R S	Dilution Facto Method Detec RPD outside a Spike Recover	or tion Limit accepted contr ry outside con	ol limits trol limits		I	Page 4 of 9

RL Reporting Limit

J Analyte detected between SDL and RL Ν Parameter not NELAP certified

CLIENT:	Golder				AN	ALYT	ICAL (	DC SU	J <b>MMA</b> I	RY I	REPORT
Work Order:	2106123										
Project:	Luminant-	-OGSES-0	CCR-Ash	Landfill 1			RunII	): I	C2_21052	27A	
Sample ID: DCS3	-100738	Batch ID:	100738		TestNo	: <b>E30</b>	)		Units:	mg/	L
SampType: <b>DCS3</b>		Run ID:	IC2_210	527A	Analysi	s Date: <b>5/27</b>	/2021 4:13:	05 PM	Prep Date:	5/27	//2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it 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:** 

В

Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

R RPD outside accepted control limits

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- S Spike Recovery outside control limits
- N Parameter not NELAP certified

# ANALYTICAL QC SUMMARY REPORT

**Project:** 

Work Order: 2106123

Luminant-OGSES-CCR-Ash Landfill 1

**RunID:** IC2\_210621A

The QC data in batch 100964 applies to the following samples: 2106123-01B, 2106123-02B, 2106123-03B, 2106123-04B, 2106123-05B, 2106123-06B, 2106123-07B

Sample ID:	MB-100964	Batch ID:	100964		TestNo: <b>E300</b>		0		Units:	mg/L			
SampType:	MBLK	Run ID:	IC2_210	621A	Analys	is Date: <b>6/21</b>	/2021 12:06	:40 PM	Prep Date:	6/21/	6/21/2021		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimi	t Qual	
Chloride			<0.300	1.00									
Fluoride			<0.100	0.400									
Sulfate			<1.00	3.00									
Sample ID:	LCS-100964	Batch ID:	100964		TestNo	e: <b>E30</b>	0		Units:	mg/L			
SampType:	LCS	Run ID:	IC2_210	621A	Analys	is Date: <b>6/21</b>	/2021 12:22	:40 PM	Prep Date:	6/21/	2021		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimi	t Qual	
Chloride			9.89	1.00	10.00	0	98.9	90	110				
Fluoride			3.72	0.400	4.000	0	93.0	90	110				
Sulfate			29.3	3.00	30.00	0	97.5	90	110				
Sample ID:	LCSD-100964	Batch ID:	100964		TestNo	: <b>E30</b>	0		Units:	mg/L			
SampType:	LCSD	Run ID:	IC2_210	621A	Analys	is Date: <b>6/21</b>	/2021 12:38	:40 PM	Prep Date:	6/21/	21/2021		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimi	t Qual	
Chloride			9.89	1.00	10.00	0	98.9	90	110	0.056	20		
Fluoride			3.71	0.400	4.000	0	92.7	90	110	0.260	20		
Sulfate			29.3	3.00	30.00	0	97.6	90	110	0.114	20		
Sample ID:	2106122-04BMS	Batch ID:	100964		TestNo	E30	0		Units:	mg/L			
SampType:	MS	Run ID:	IC2_210	621A	Analys	is Date: <b>6/21</b>	/2021 6:02:	58 PM	Prep Date:	6/21/	2021		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimi	t Qual	
Chloride			2380	100	2000	416.3	98.3	90	110				
Fluoride			1960	40.0	2000	0	97.9	90	110				
Sulfate			1810	300	2000	145.8	83.2	90	110			S	
Sample ID:	2106122-04BMSD	Batch ID:	100964		TestNo	E30	0		Units:	mg/L			
SampType:	MSD	Run ID:	IC2_210	621A	Analys	is Date: <b>6/21</b>	/2021 6:18:	58 PM	Prep Date:	6/21/	2021		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimi	t Qual	
Chloride			2370	100	2000	416.3	97.9	90	110	0.307	20		
Fluoride			1960	40.0	2000	0	97.8	90	110	0.024	20		
Sulfate			1810	300	2000	145.8	83.4	90	110	0.233	20	S	

**Qualifiers:** Analyte detected in the associated Method Blank DF Dilution Factor В 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

> Analyte detected between SDL and RL J

Ν Parameter not NELAP certified Page 6 of 9

CLIENT:	Golder
	Goldel

Work Order:

# ANALYTICAL QC SUMMARY REPORT

**Project:** Luminant-OGSES-CCR-Ash Landfill 1

2106123

**RunID:** 

IC2\_210621A

Sample ID: 2106122-08BMS	Batch ID:	100964		TestNo	: <b>E30</b>		Units:	mg/L	-		
SampType: <b>MS</b>	Run ID:	IC2_210	621A	Analys	is Date: <b>6/21</b>	/2021 6:50:	58 PM	Prep Date:	6/21/	/2021	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimi	t Qual
Chloride		3950	100	2000	2228	86.0	90	110			S
Fluoride		1930	40.0	2000	0	96.6	90	110			
Sulfate		1960	300	2000	310.0	82.3	90	110			S
Sample ID: 2106122-08BMSD	Batch ID:	100964		TestNo	E30	0		Units:	mg/L	_	
Sample ID: <b>2106122-08BMSD</b> SampType: <b>MSD</b>	Batch ID: Run ID:	100964 IC2_210	621A	TestNc Analys	: <b>E30</b> is Date: <b>6/21</b>	0 /2021 7:06:	58 PM	Units: Prep Date:	mg/L 6/21/	- /2021	
Sample ID: <b>2106122-08BMSD</b> SampType: <b>MSD</b> Analyte	Batch ID: Run ID:	100964 IC2_2100 Result	621A RL	TestNo Analys SPK value	: <b>E30</b> is Date: <b>6/21</b> Ref Val	0 /2021 7:06: %REC	58 PM LowLim	Units: Prep Date: it HighLimit	<b>mg/L</b> 6/21/ %RPD	- / <b>2021</b> RPDLimi	t Qual
Sample ID: 2106122-08BMSD SampType: MSD Analyte Chloride	Batch ID: Run ID:	100964 IC2_2100 Result 3990	621A RL 100	TestNo Analys SPK value 2000	E300 is Date: 6/21 Ref Val	0 /2021 7:06: %REC 88.3	58 PM LowLim 90	Units: Prep Date: it HighLimit 110	<b>mg/L</b> 6/21/ %RPD 1.17	- / <b>2021</b> RPDLimi 20	t Qual S
Sample ID: 2106122-08BMSD SampType: MSD Analyte Chloride Fluoride	Batch ID: Run ID:	100964 IC2_2100 Result 3990 1960	621A RL 100 40.0	TestNo Analys SPK value 2000 2000	: <b>E30</b> is Date: <b>6/21</b> Ref Val 2228 0	0 /2021 7:06: %REC 88.3 97.8	58 PM LowLim 90 90	Units: Prep Date: it HighLimit 110 110	<b>mg/L</b> 6/21/ %RPD 1.17 1.31	- / <b>2021</b> RPDLimi 20 20	t Qual S

**Qualifiers:** 

В Analyte detected in the associated Method Blank Analyte detected between MDL and RL

J ND Not Detected at the Method Detection Limit

- Reporting Limit
- RL
- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit

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- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- Ν Parameter not NELAP certified

CLIENT: Work Ord	Golder	2			AN	ALYT	ICAL Q	QC SI	U <b>MMA</b> I	RY REF	ORT
Project:	Lumina	nt-OGSES-C	CR-Ash	Landfill 1			RunID	: ]	[C2_21062	21A	
Sample ID:	ICV-210621	Batch ID:	R11588	31	TestNo	: <b>E30</b>	0		Units:	mg/L	
SampType:	ICV	Run ID:	IC2_21	0621A	Analys	is Date: 6/21	/2021 11:34:	40 AM	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPD	Limit Qual
Chloride			25.2	1.00	25.00	0	101	90	110		
Fluoride			9.67	0.400	10.00	0	96.7	90	110		
Sulfate			76.5	3.00	75.00	0	102	90	110		
Sample ID:	CCV1-210621	Batch ID:	R11588	81	TestNo	D: <b>E30</b>	0		Units:	mg/L	
SampType:	CCV	Run ID:	IC2_21	0621A	Analys	is Date: 6/21	/2021 10:02:	58 PM	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPD	Limit Qual
Chloride			9.75	1.00	10.00	0	97.5	90	110		
Fluoride			3.83	0.400	4.000	0	95.8	90	110		
Sulfate			28.9	3.00	30.00	0	96.4	90	110		
Sample ID:	CCV2-210621	Batch ID:	R11588	31	TestNo	: <b>E30</b>	0		Units:	mg/L	
SampType:	CCV	Run ID:	IC2_21	0621A	Analys	is Date: <b>6/22</b>	/2021 2:02:5	8 AM	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPD	Limit Qual
Chloride			9.97	1.00	10.00	0	99.7	90	110		
Fluoride			3.94	0.400	4.000	0	98.6	90	110		
Sulfate			29.4	3.00	30.00	0	98.2	90	110		
Sample ID:	CCV3-210621	Batch ID:	R11588	31	TestNo	: <b>E30</b>	0		Units:	mg/L	
SampType:	CCV	Run ID:	IC2_21	0621A	Analys	is Date: 6/22	/2021 6:02:5	8 AM	Prep Date:	•	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPD	Limit Qual
Chloride			9.97	1.00	10.00	0	99.7	90	110		
Fluoride			3.96	0.400	4.000	0	99.1	90	110		
Sulfate			29.2	3.00	30.00	0	97.2	90	110		
Sample ID:	CCV4-210621	Batch ID:	R11588	81	TestNo	D: <b>E30</b>	0		Units:	mg/L	
SampType:	CCV	Run ID:	IC2_21	0621A	Analys	is Date: 6/22	/2021 8:42:5	8 AM	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPD	Limit Qual
Chloride			9.98	1.00	10.00	0	99.8	90	110		
Fluoride			3.96	0.400	4.000	0	98.9	90	110		
Sulfate			29.4	3.00	30.00	0	98.0	90	110		

**Qualifiers:** В Analyte detected in the associated Method Blank DF Dilution Factor MDL Method Detection Limit J Analyte detected between MDL and RL 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

**CLIENT:** 

Golder

30

Ν

Parameter not NELAP certified

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CLIENT:	Golder				ΔΝ	ΔΙ.ΥΤ	TCAL C	)C SI	IMMAL	V RE	PORT
Work Order:	2106123										
Project:	Luminant-(	OGSES-C	CCR-Ash	Landfill 1			RunID	): \	WC_21062	1 <b>B</b>	
The QC data in batch 06B, 2106123-07B	100962 app	olies to the	following	amples: 210	6123-01B, 2106	6123-02B, 2	2106123-03B	, 210612	3-04B, 21061	23-05B, 2	106123-
Sample ID: MB-1009	962	Batch ID:	100962		TestNo:	M2	540C		Units:	mg/L	
SampType: <b>MBLK</b>		Run ID:	WC_21	0621B	Analysis	s Date: 6/21	1/2021 2:10:0	00 PM	Prep Date:	6/21/20	21
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	%RPD RF	PDLimit Qual
Total Dissolved Solid	s (Residue,	Filtera	<10.0	10.0							
Sample ID: LCS-100	962	Batch ID:	100962		TestNo:	M2	540C		Units:	mg/L	
SampType: <b>LCS</b>		Run ID:	WC_21	0621B	Analysis	s Date: 6/21	1/2021 2:10:0	00 PM	Prep Date:	6/21/20	21
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	%RPD RF	DLimit Qual
Total Dissolved Solid	s (Residue,	Filtera	774	10.0	745.6	0	104	90	113		
Sample ID: <b>2106122</b>	-08B-DUP	Batch ID:	100962		TestNo:	M2	540C		Units:	mg/L	
SampType: <b>DUP</b>		Run ID:	WC_21	0621B	Analysis	s Date: 6/21	1/2021 2:10:0	00 PM	Prep Date:	6/21/20	21
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	%RPD RF	DLimit Qual
Total Dissolved Solid	s (Residue,	Filtera	4810	50.0	0	4870				1.34	5
Sample ID: <b>2106122</b>	-09B-DUP	Batch ID:	100962		TestNo:	M2	540C		Units:	mg/L	
SampType: <b>DUP</b>		Run ID:	WC_21	0621B	Analysis	s Date: 6/21	1/2021 2:10:0	00 PM	Prep Date:	6/21/20	21
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	iit HighLimit %	%RPD RF	DLimit Qual
Total Dissolved Solid	s (Residue,	Filtera	1140	50.0	0	1155				1.75	5

**CLIENT:** 

Golder

**Qualifiers:** В Analyte detected in the associated Method Blank DF Dilution Factor Analyte detected between MDL and RL MDL Method Detection Limit J 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 Ν Parameter not NELAP certified

Page 9 of 9

CLIENT: Golder										
<b>Work Order:</b> 2106123										
Project: Luminant-OGS	Luminant-OGSES-CCR-Ash Landfill 1									
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								

# MQL SUMMARY REPORT





Will Vienne Golder 2201 Double Creek Dr #4004 Round Rock, Texas 78664 TEL: (512) 671-3434 FAX: (512) 671-3446 RE: Luminant-OGSES-Ash Landfill-CCR Dear Will Vienne:

Order No.: 2110096

DHL Analytical, Inc. received 7 sample(s) on 10/13/2021 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



2300 Double Creek Drive • Round Rock, TX 78664 • Phone (512) 388-8222 • FAX (512) 388-8229 www.dhlanalytical.com

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Miscellaneous Documents	
CaseNarrative 2110096	
WorkOrderSampleSummary 2110096	
PrepDatesReport 2110096	
AnalyticalDatesReport 2110096	
Analytical Report 2110096	
AnalyticalQCSummaryReport 2110096	
MQLSummaryReport 2110096	

								0 Double Creek Dr. Round Rock, TX 78664 Phone 512.388.8222							CHAIN-OF-CUSTODY															
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A N A L	ΥT	ICAL	•			Em	ail: I	logi	n@d	ihla	inal	ytic	al.c	om													PA	GE _		OF
CLIENT: GOLDER						DA	TE: _		10	-12	2-2	21								LABORATORY USE ONLY										
ADDRESS: 2201 DOUBL	E CR	EEK DA	2 454004	rou	ND RICI	HPO#								DHL WORKORDER #: 2110096																
PHONE: 512.671-34	34	_EMAIL:					)#:							,		· · · · ·					_			Λ		,				
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🗆 Yes 🛛 No	Use	S=SOIL		SL=SL	UDGE	S			etate	RVE	ES	00 83	Ē		밐		-P PE	8270	DISS.		ALINI			1858						
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	DHL DIS	SPOSAL @	5.00 each		🗆 Retu	rn															1	DHL	. CO	CF	REV	3	MA	R 20		

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	Sample	Receipt Che	ecklist			
Client Name Golder			Date Recei	ved:	10/13/2021	
Work Order Number 2110096			Received by	/: EL		
$\land$						
Checklist completed by:	10/13/20	21	Reviewed by	y S4	10/13/2021	
Signature	Date			Initials	Date	
V	Carrier name:	Hand Delivere	d			
Shipping container/cooler in good condition?		Yes 🗹	Νο	Not Preser	nt 🗌	
Custody seals intact on shippping container/coo	ler?	Yes	No 🗌	Not Preser	nt 🔽	
Custody seals intact on sample bottles?		Yes 🗌	No 🗌	Not Preser	nt 🔽	
Chain of custody present?		Yes 🗹	Νο			
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 🗹	Νο			
Sample containers intact?		Yes 🗹	Νο			
Sufficient sample volume for indicated test?		Yes 🗹	Νο			
All samples received within holding time?		Yes 🗹	Νο			
Container/Temp Blank temperature in complian	ce?	Yes 🗹	No 🗌	<b>4.3</b> °C		
Water - VOA vials have zero headspace?		Yes	No 🗌	No VOA vial	s submitted 🗹	
Water - pH<2 acceptable upon receipt?		Yes 🗹	Νο	NA	LOT # 13171	
		Adjusted?	No	Checked	Iby R.A.	
Water - ph>9 (S) or ph>10 (CN) acceptable upo	on receipt?	Yes	Νο	NA 🗹 🛛 I	LOT #	
		Adjusted?		Checked	d by	
Any No response must be detailed in the comm	ents section below.					
						-
Client contacted:	Date contacted:		Per	son contacte	a	
Contacted by:	Regarding:		20 m	<u></u>		
Comments:						
			-		·	
		· · · · · · · · · · · · · · · · · · ·				
Corrective Action:						
		<u>, ,, ,, ,, , , , , , , , , , , , , , ,</u>				

Page 1 of 1

7								
Lab	ora	tory Name: DHL Analytical, Inc.						
Lab	ora	tory Review Checklist: Reportable Data						
Proje	ect Na	ame: Luminant-OGSES-Ash Landfill-CCR LRC Date:	10/20/2021					
Revie	ewer	Name: Angie O'Donnell Laboratory	Work Order: 2110096					
Prep	Bate	h Number(s): See Prep Dates Report Run Batch:	: See Analytical Dates Report					
#1	A <sup>2</sup>	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
		Chain-of-Custody (C-O-C)						
R1	OI	1) Did samples meet the laboratory's standard conditions of sample account	eptability upon receipt?	Χ				R1-01
		2) Were all departures from standard conditions described in an exception	on report?			Χ		
R2	OI	Sample and Quality Control (QC) Identification						
		1) Are all field sample ID numbers cross-referenced to the laboratory ID	) numbers?	X				
D3	OI	2) Are all laboratory ID numbers cross-referenced to the corresponding	QC data?	Χ				
KJ	01	1) Were all samples prepared and analyzed within holding times?		x				
		2) Other than those results < MOL, 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?		Χ				
		5) Were sample detection limits reported for all analytes not detected?		Χ				
		6) Were all results for soil and sediment samples reported on a dry weig	ht basis?			Χ		
		7) Were % moisture (or solids) reported for all soil and sediment sample	es?			X		
		<b>8)</b> Were bulk soils/solids samples for volatile analysis extracted with me	ethanol per EPA Method 5035?			X		
R4	0	Surrogate Recovery Data				Λ		
Ц		1) Were surrogates added prior to extraction?				X		
		2) Were surrogate percent recoveries in all samples within the laborator	y QC limits?			X		
R5	OI	Test Reports/Summary Forms for Blank Samples						
		1) Were appropriate type(s) of blanks analyzed?		Χ				
		2) Were blanks analyzed at the appropriate frequency?		X				
		3) Where method blanks taken through the entire analytical process, inc	luding preparation and, if	х				
		applicable, cleanup procedures?		v				
		5) For analyte(s) detected in a blank sample, was the concentration una	diusted for sample specific	Λ				
		factors, in all associated field samples, greater than 10 times the concer	itration in the blank sample?			X		
<b>R6</b>	OI	Laboratory Control Samples (LCS):	•					
		1) Were all COCs included in the LCS?		Χ				
		2) Was each LCS taken through the entire analytical procedure, includin	ng prep and cleanup steps?	X				
		3) Were LCSs analyzed at the required frequency?	1	X				
		4) Were LCS (and LCSD, if applicable) %Rs within the laboratory QC	limits?	Χ				
		to calculate the SDLs?	steet the COCs at the MDL used	Х				
		6) Was the LCSD RPD within QC limits (if applicable)?		Х				
<b>R7</b>	OI	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Data						
		1) Were the project/method specified analytes included in the MS and M	4SD?	Χ				
		2) Were MS/MSD analyzed at the appropriate frequency?		X				
		3) Were MS (and MSD, if applicable) %Rs within the laboratory QC lin (1) Were MS (A(SD DDD = within 1-b system) QC limits?	nits?	v	X			R7-03
DQ	OI	4) were MS/MSD RPDs within laboratory QC limits?		Λ				
по	01	1) Were appropriate analytical duplicates analyzed for each matrix?		x				
		2) Were analytical duplicates analyzed to each matrix:		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 dat	a package?	Χ				
		2) Do the MQLs correspond to the concentration of the lowest non-zero	calibration standard?	X				
D10	OI	5) Are unadjusted MQLs and DCSs included in the laboratory data pack	tage?	X				_
KIU		1) Are all known problems/anomalies/special conditions noted in this L	RC and FR?	X				
		2) Was applicable and available technology used to lower the SDL to m	inimize the matrix interference	<u>л</u>			-+	
		affects on the sample results?		X				
1		3) Is the laboratory NELAC-accredited under the Texas Laboratory Acc	reditation Program for the	v				
		analytes, matrices and methods associated with this laboratory data pack	cage?	Л				

Lab	ora	tory Name: DHL Analytical, Inc.						
Lab	ora	tory Review Checklist (continued): Supporting	Data					
Proje	ct Na	ame: Luminant-OGSES-Ash Landfill-CCR LRC	<b>Date:</b> 10/20/2021					
Revie	wer	Name: Angie O'Donnell Labo	ratory Work Order: 2110096					
Prep	Bate	h Number(s): See Prep Dates Report Run	Batch: See Analytical Dates Report					
#1	$A^2$	Description		Yes	No	NA <sup>3</sup>	NR <sup>4</sup>	ER# <sup>5</sup>
S1	OI	Initial Calibration (ICAL)		105	110	1.1.1	1111	111
		1) Ware regrange factors and/or relative regrange factors for each s	angly to within OC limits?	v				
		2) Were percent RSDs or correlation coefficient criteria met?	analyte within QC mints?					
		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 standa	rd 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 appropria	te second source standard?	X				
S2	OI	Initial and Continuing calibration Verification (ICCV and CC)	V) and Continuing Calibration					
		blank (CCB):	,					
		1) Was the CCV analyzed at the method-required frequency?		Χ				
		2) Were percent differences for each analyte within the method-rec	uired QC limits?	Х				
		3) Was the ICAL curve verified for each analyte?		Х				
		4) Was the absolute value of the analyte concentration in the inorga	anic CCB < MDL?	Х				
<b>S3</b>	0	Mass Spectral Tuning:						
		1) Was the appropriate compound for the method used for tuning?		Χ				
		2) Were ion abundance data within the method-required QC limits	?	Χ				
<b>S4</b>	0	Internal Standards (IS):						
		1) Were IS area counts and retention times within the method-requ	ired QC limits?	X				
<b>S</b> 5	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?						
<u>86</u>	0	Dual Column Confirmation	0.02			N		
07	0	1) Did dual column confirmation results meet the method-required	QC?			X		
87	0	1) If TIC: many memory damaged and the many and the set of the set				V		
60	T	1) If Thes were requested, were the mass spectra and The data subj	ject to appropriate checks?			Λ		
30	1	1) Were percent recoveries within method OC limits?		v				
50	T	Serial Dilutions Post Digestion Spikes and Method of Standar	d Additions	Λ				
57	1	1) W						
		i) were percent differences, recoveries, and the linearity with method?	in the QC limits specified in the	X				
<b>S10</b>	OI	Method Detection Limit (MDL) Studies						
		1) Was a MDL study performed for each reported analyte?		Χ				
		2) Is the MDL either adjusted or supported by the analysis of DCSs	s?	X				
S11	OI	Proficiency Test Reports:		_				
		1) Was the lab's performance acceptable on the applicable proficient	ncy tests or evaluation studies?	X				
S12	OI	Standards Documentation	1.0					
612	01	1) Are all standards used in the analyses NIST-traceable or obtaine	d from other appropriate sources?	X				
813	OI	Compound/Analyte Identification Procedures	4 19	N				
614	OI	1) Are the procedures for compound/analyte identification docume	nted?	Χ				
514		1) Was DOC conducted consistent with NELAC Chanter 5	ndiv C2	v		-		
		1) was DOC conducted consistent with NELAC Chapter $3 - Appendix 2$ .	file?					
S15	OI	Verification/Validation Documentation for Mathada (NELAC)	Thanter 5)	Λ				
515	01	1) Are all the methods used to superior the data 1	d vanified and1: 1-t-1 1					
1		annlicable?	u, verified, and validated, where	Х				
011	C.							
<u>816</u>	OI	Laboratory Standard Operating Procedures (SOPs):						
		1) Are laboratory SOPs current and on file for each method perform	ned?	X				

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 1 the letter "S" should be retained and made available upon request for the appropriate retention period. O = organic analyses; I = inorganic analyses (and general chemistry, when applicable).

<sup>2</sup> 

<sup>3</sup> NA = Not applicable.

<sup>4</sup> NR = Not Reviewed.

<sup>5</sup> 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:

R4

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).
  - 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

flow mit

10/20/21 Date

CLIENT:GolderProject:Luminant-OGSES-Ash Landfill-CCRLab Order:2110096

# 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

Exception Report R1-01

The samples were received and log-in performed on 10/13/2021. A total of 7 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 one anion (each) for the Matrix Spike and Matrix Spike Duplicate(s) (2110094-10, 2110096-07 MS/MSD) was below the method control limits. These are flagged accordingly in the QC Summary Report. These anions were within method control limits in the associated LCS. No further corrective action was taken.

\_

Date: 20-Oct-21

CLIENT: Project: Lab Order:	Golder Luminant-OGSES 2110096	Ash Landfill-CCR	Work Order Sample Summary				
Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved			
2110096-01	MW-02		10/12/21 01:30 PM	10/13/2021			
2110096-02	MW-09		10/12/21 04:20 PM	10/13/2021			
2110096-03	AL-10		10/12/21 03:20 PM	10/13/2021			
2110096-04	MW-08R		10/12/21 05:15 PM	10/13/2021			
2110096-05	MW-05		10/12/21 06:05 PM	10/13/2021			
2110096-06	DUP-1		10/12/21 06:05 PM	10/13/2021			
2110096-07	MW-07		10/13/21 08:10 AM	10/13/2021			

Lab Order:2110096Client:Golder

Project: Luminant-OGSES-Ash Landfill-C

# PREP DATES REPORT

Sample ID	Client Sample ID	<b>Collection Date</b>	Matrix	Test Number	Test Name	Prep Date	Batch ID
2110096-01A	MW-02	10/12/21 01:30 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
2110096-01B	MW-02	10/12/21 01:30 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-02	10/12/21 01:30 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-02	10/12/21 01:30 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110096-02A	MW-09	10/12/21 04:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
2110096-02B	MW-09	10/12/21 04:20 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-09	10/12/21 04:20 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-09	10/12/21 04:20 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110096-03A	AL-10	10/12/21 03:20 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
2110096-03B	AL-10	10/12/21 03:20 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	AL-10	10/12/21 03:20 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	AL-10	10/12/21 03:20 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110096-04A	MW-08R	10/12/21 05:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
	MW-08R	10/12/21 05:15 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
2110096-04B	MW-08R	10/12/21 05:15 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-08R	10/12/21 05:15 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-08R	10/12/21 05:15 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110096-05A	MW-05	10/12/21 06:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
2110096-05B	MW-05	10/12/21 06:05 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-05	10/12/21 06:05 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-05	10/12/21 06:05 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110096-06A	DUP-1	10/12/21 06:05 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
2110096-06B	DUP-1	10/12/21 06:05 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	DUP-1	10/12/21 06:05 PM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	DUP-1	10/12/21 06:05 PM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408
2110096-07A	MW-07	10/13/21 08:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
	MW-07	10/13/21 08:10 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/18/21 10:17 AM	102438
2110096-07B	MW-07	10/13/21 08:10 AM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420

Page 1 of 2

Lab Order:	2110096
Client:	Golder
Project:	Luminant-OGSES-Ash Landfill-C

# PREP DATES REPORT

Sample ID	Client Sample ID	<b>Collection Date</b>	Matrix	Test Number	Test Name	Prep Date	Batch ID
2110096-07B	MW-07	10/13/21 08:10 AM	Aqueous	E300	Anion Preparation	10/15/21 10:07 AM	102420
	MW-07	10/13/21 08:10 AM	Aqueous	M2540C	TDS Preparation	10/14/21 12:19 PM	102408

**Lab Order:** 2110096

Client: Golder

Project: Luminant-OGSES-Ash Landfill-C

# ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2110096-01A	MW-02	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	1	10/19/21 02:49 PM	ICP-MS4_211019A
2110096-01B	MW-02	Aqueous	E300	Anions by IC method - Water	102420	10	10/15/21 05:39 PM	IC2_211015A
	MW-02	Aqueous	E300	Anions by IC method - Water	102420	1	10/16/21 01:07 AM	IC2_211015A
	MW-02	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110096-02A	MW-09	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	1	10/19/21 02:51 PM	ICP-MS4_211019A
2110096-02B	MW-09	Aqueous	E300	Anions by IC method - Water	102420	10	10/15/21 05:55 PM	IC2_211015A
	MW-09	Aqueous	E300	Anions by IC method - Water	102420	1	10/16/21 01:23 AM	IC2_211015A
	MW-09	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110096-03A	AL-10	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	1	10/19/21 02:53 PM	ICP-MS4_211019A
2110096-03B	AL-10	Aqueous	E300	Anions by IC method - Water	102420	10	10/15/21 06:11 PM	IC2_211015A
	AL-10	Aqueous	E300	Anions by IC method - Water	102420	1	10/16/21 01:39 AM	IC2_211015A
	AL-10	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110096-04A	MW-08R	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	10	10/19/21 03:12 PM	ICP-MS4_211019A
	MW-08R	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	1	10/19/21 02:55 PM	ICP-MS4_211019A
2110096-04B	MW-08R	Aqueous	E300	Anions by IC method - Water	102420	1	10/16/21 01:55 AM	IC2_211015A
	MW-08R	Aqueous	E300	Anions by IC method - Water	102420	10	10/15/21 06:27 PM	IC2_211015A
	MW-08R	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110096-05A	MW-05	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	1	10/19/21 02:57 PM	ICP-MS4_211019A
2110096-05B	MW-05	Aqueous	E300	Anions by IC method - Water	102420	10	10/15/21 06:43 PM	IC2_211015A
	MW-05	Aqueous	E300	Anions by IC method - Water	102420	1	10/16/21 02:11 AM	IC2_211015A
	MW-05	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110096-06A	DUP-1	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	1	10/19/21 02:59 PM	ICP-MS4_211019A
2110096-06B	DUP-1	Aqueous	E300	Anions by IC method - Water	102420	10	10/15/21 06:59 PM	IC2_211015A
	DUP-1	Aqueous	E300	Anions by IC method - Water	102420	1	10/16/21 02:27 AM	IC2_211015A
	DUP-1	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C
2110096-07A	MW-07	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	1	10/19/21 03:01 PM	ICP-MS4_211019A
	MW-07	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	102438	10	10/19/21 03:14 PM	ICP-MS4_211019A
2110096-07B	MW-07	Aqueous	E300	Anions by IC method - Water	102420	10	10/15/21 07:15 PM	IC2_211015A

Page 1 of 2

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID
Project:	Luminant-OGSI	ES-Ash Landfi	ll-C		
Client:	Golder				ANA
Lab Order:	2110096				

# ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2110096-07B	MW-07	Aqueous	E300	Anions by IC method - Water	102420	1	10/16/21 02:43 AM	IC2_211015A
	MW-07	Aqueous	M2540C	Total Dissolved Solids	102408	1	10/14/21 04:30 PM	WC_211014C

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Date: 20-Oct-21
```

**Date Analyzed** 

Analyses	R	esult SDL	RL	Qual U	nits DF
Lab Order:	2110096			Matrix	: AQUEOUS
Project No:	1912262		Colle	ection Date	e: 10/12/21 01:30 PM
Project:	Luminant-OGSES-Ash Landfi	ll-CCR		Lab ID	: 2110096-01
CLIENT:	Golder		Client	Sample ID	<b>•:</b> MW-02

TRACE METALS: ICP-MS - WAT	ER	SW60	20B				Analyst: SP
Boron	0.0848	0.0100	0.0300		mg/L	1	10/19/21 02:49 PM
Calcium	23.8	0.100	0.300		mg/L	1	10/19/21 02:49 PM
ANIONS BY IC METHOD - WATE	R	E30	0				Analyst: <b>BM</b>
Chloride	56.6	3.00	10.0		mg/L	10	10/15/21 05:39 PM
Fluoride	0.360	0.100	0.400	J	mg/L	1	10/16/21 01:07 AM
Sulfate	20.7	1.00	3.00		mg/L	1	10/16/21 01:07 AM
TOTAL DISSOLVED SOLIDS		M254	0C				Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	245	10.0	10.0		mg/L	1	10/14/21 04:30 PM

0 110	ND Net Detected at the CDL
Quanners:	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

```
Date: 20-Oct-21
```

CLIENT:	Golder	Client
Project:	Luminant-OGSES-Ash Landfill-CCR	
<b>Project No:</b>	1912262	Coll
Lab Order:	2110096	

# lient Sample ID: MW-09 Lab ID: 2110096-02

ollection Date: 10/12/21 04:20 PM

### Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER	२	SW60	20B			Analyst: SP
Boron	0.0821	0.0100	0.0300	mg/L	1	10/19/21 02:51 PM
Calcium	20.7	0.100	0.300	mg/L	1	10/19/21 02:51 PM
ANIONS BY IC METHOD - WATER		E30	0			Analyst: <b>BM</b>
Chloride	29.9	0.300	1.00	mg/L	1	10/16/21 01:23 AM
Fluoride	<0.100	0.100	0.400	mg/L	1	10/16/21 01:23 AM
Sulfate	31.2	1.00	3.00	mg/L	1	10/16/21 01:23 AM
TOTAL DISSOLVED SOLIDS		M254	0C			Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	223	10.0	10.0	mg/L	1	10/14/21 04:30 PM

Qualifiers:	ND - Not Detected at the SI	DL

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

```
Date: 20-Oct-21
```

CLIENT:	Golder	C
Project:	Luminant-OGSES-Ash Landfill-CCR	
Project No:	1912262	
Lab Order:	2110096	

#### Client Sample ID: AL-10 Lab ID: 2110096-03

Collection Date: 10/12/21 03:20 PM

#### Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATE	R	SW60	20B			Analyst: <b>SP</b>
Boron	0.0878	0.0100	0.0300	mg/L	1	10/19/21 02:53 PM
Calcium	15.1	0.100	0.300	mg/L	1	10/19/21 02:53 PM
ANIONS BY IC METHOD - WATER	R	E30	00			Analyst: BM
Chloride	51.4	3.00	10.0	mg/L	10	10/15/21 06:11 PM
Fluoride	<0.100	0.100	0.400	mg/L	1	10/16/21 01:39 AM
Sulfate	9.84	1.00	3.00	mg/L	1	10/16/21 01:39 AM
TOTAL DISSOLVED SOLIDS		M254	10C			Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	269	10.0	10.0	mg/L	1	10/14/21 04:30 PM

Qualifiers:	ND - Not Detected at the SI	)L

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	<b>Client Sample ID:</b>	MW-08R
Project:	Luminant-OGSES-Ash Landfill-CCR	Lab ID:	2110096-04
Project No:	1912262	<b>Collection Date:</b>	10/12/21 05:15 PM
Lab Order:	2110096	Matrix:	AQUEOUS

Analyses	Result	SDL	RL	Qual Units	DF	Date Analyzed	
TRACE METALS: ICP-MS - WATI	ER	SW60	20B			Analyst: SP	
Boron	0.107	0.0100	0.0300	mg/L	1	10/19/21 02:55 PM	
Calcium	32.8	1.00	3.00	mg/L	10	10/19/21 03:12 PM	
ANIONS BY IC METHOD - WATE	R	E30	0			Analyst: <b>BM</b>	
Chloride	268	3.00	10.0	mg/L	10	10/15/21 06:27 PM	
Fluoride	<0.100	0.100	0.400	mg/L	1	10/16/21 01:55 AM	
Sulfate	136	1.00	3.00	mg/L	1	10/16/21 01:55 AM	
TOTAL DISSOLVED SOLIDS		M254	OC			Analyst: <b>JS</b>	
Total Dissolved Solids (Residue, Filterable)	874	10.0	10.0	mg/L	1	10/14/21 04:30 PM	

<b>Oualifiers</b> :	ND - Not Detected at the S	DL.
Quanners.	The Thot Detected at the b	

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

```
Date: 20-Oct-21
```

CLIENT:	Golder			Clier	nt Sample ID: MW-0	)5	
Project:	Luminant-OGSES-As	h Landfill-CCR			Lab ID: 21100	96-05	
Project No:	1912262			Co	llection Date: 10/12/	/21 06:05 P	ΡM
Lab Order:	2110096				Matrix: AQUE	EOUS	
Analyses		Result	SDL	RL	Qual Units	DF	Date Analyzed
TRACE META	LS: ICP-MS - WATER		SW60	20B			Analyst: <b>SP</b>
Boron		0.0615	0.0100	0.0300	mg/L	1	10/19/21 02:57 PM
Calcium		20.9	0.100	0.300	mg/L	1	10/19/21 02:57 PM
ANIONS BY IC	METHOD - WATER		E30	00			Analyst: <b>BM</b>
Chloride		83.6	3.00	10.0	mg/L	10	10/15/21 06:43 PM

Fluoride	0.433	0.100	0.400	mg/L	1	10/16/21 02:11 AM
Sulfate	11.7	1.00	3.00	mg/L	1	10/16/21 02:11 AM
TOTAL DISSOLVED SOLIDS		M2540	DC			Analyst: <b>JS</b>
Total Dissolved Solids (Residue,	282	10.0	10.0	mg/L	1	10/14/21 04:30 PM

Filterable)

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

```
Date: 20-Oct-21
```

CLIENT:	Golder	Client Sample ID: DUP-1
Project:	Luminant-OGSES-Ash Landfill-CCR	Lab ID: 2110096-06
<b>Project No:</b>	1912262	Collection Date: 10/12/21 06:05 PM
Lab Order:	2110096	Matrix: AQUEOUS

Analyses	Result	SDL	RL	Qual Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WAT	ER	SW60	20B			Analyst: SP
Boron	0.0703	0.0100	0.0300	mg/L	1	10/19/21 02:59 PM
Calcium	20.9	0.100	0.300	mg/L	1	10/19/21 02:59 PM
ANIONS BY IC METHOD - WATE	ER	E30	0			Analyst: <b>BM</b>
Chloride	85.5	3.00	10.0	mg/L	10	10/15/21 06:59 PM
Fluoride	0.425	0.100	0.400	mg/L	1	10/16/21 02:27 AM
Sulfate	12.1	1.00	3.00	mg/L	1	10/16/21 02:27 AM
TOTAL DISSOLVED SOLIDS		M254	0C			Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	272	10.0	10.0	mg/L	1	10/14/21 04:30 PM

Oualifiers:	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: 20-Oct-21
```

CLIENT:	Golder	Client Sample ID: MW-07
Project:	Luminant-OGSES-Ash Landfill-CCR	Lab ID: 2110096-07
<b>Project No:</b>	1912262	Collection Date: 10/13/21 08:10 AM
Lab Order:	2110096	Matrix: AQUEOUS
Analyses	Result SDL	RL Oual Units DF

Analyses	Result	SDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		SW60	20B				Analyst: SP
Boron	0.181	0.0100	0.0300		mg/L	1	10/19/21 03:01 PM
Calcium	31.6	1.00	3.00		mg/L	10	10/19/21 03:14 PM
ANIONS BY IC METHOD - WATER		E30	0				Analyst: <b>BM</b>
Chloride	29.6	0.300	1.00		mg/L	1	10/16/21 02:43 AM
Fluoride	0.353	0.100	0.400	J	mg/L	1	10/16/21 02:43 AM
Sulfate	130	1.00	3.00		mg/L	1	10/16/21 02:43 AM
TOTAL DISSOLVED SOLIDS		M254	0C				Analyst: <b>JS</b>
Total Dissolved Solids (Residue, Filterable)	422	10.0	10.0		mg/L	1	10/14/21 04:30 PM

<b>Oualifiers:</b>	ND - Not Detected at the SDL
Quanners.	The Proceeded at the SPL

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

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### DHL Analytical, Inc.

# CLIENT:GolderWork Order:2110096Project:Luminant-OGSES-Ash Landfill-CCR

## ANALYTICAL QC SUMMARY REPORT

#### RunID: I

### ICP-MS4\_210803A

Sample ID: DCS2-101483	Batch ID:	101483		TestNo:	SV	V6020B		Units:	mg/L	
SampType: <b>DCS2</b>	Run ID:	ICP-MS4_	210803A	Analysis	Date: 8/3	3/2021 1:21:00	РМ	Prep Date:	8/2/2	021
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit Qual
Calcium		0.278	0.300	0.300	0	92.6	70	130	0	0
Sample ID: DCS4-101483	Batch ID:	101483		TestNo:	SV	V6020B		Units:	mg/L	
SampType: <b>DCS4</b>	Run ID:	ICP-MS4_	210803A	Analysis	Date: 8/3	3/2021 1:27:00	РМ	Prep Date:	8/2/2	021
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 BlankJ Analyte detected between MDL and RL

- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDLMethod Detection LimitRRPD outside accepted control limits

  - S Spike Recovery outside control limits
  - N Parameter not NELAP certified

CLIENT:	Golder				ΔΝ	JALVT	ICAL	C SI	IMMAL	V R	EPORT
Work Order:	2110096				1 11						
Project:	Luminant-	OGSES-A	Ash Landfi	ll-CCR			RunII	): I	CP-MS4_	211019	A
The QC data in batch 06A, 2110096-07A	n 102438 ap	plies to the	following s	amples: 211	0096-01A, 211	0096-02A, 2	110096-03 <i>A</i>	, 211009	6-04A, 21100	96-05A,	2110096-
Sample ID: MB-1024	438	Batch ID:	102438		TestNo	: SW	6020B		Units:	mg/L	
SampType: <b>MBLK</b>		Run ID:	ICP-MS4	_211019A	Analys	is Date: <b>10/1</b>	9/2021 2:01	:00 PM	Prep Date:	10/18/:	2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Boron			<0.0100	0.0300							
Calcium			<0.100	0.300							
Sample ID: LCS-102	2438	Batch ID:	102438		TestNo	: SW	6020B		Units:	mg/L	
SampType: <b>LCS</b>		Run ID:	ICP-MS4	_211019A	Analys	is Date: <b>10/1</b>	9/2021 2:03	8:00 PM	Prep Date:	10/18/:	2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Boron			0.184	0.0300	0.200	0	91.9	80	120		
Calcium			5.43	0.300	5.00	0	109	80	120		
Sample ID: LCSD-1	02438	Batch ID:	102438		TestNo	: SW	6020B		Units:	mg/L	
SampType: <b>LCSD</b>		Run ID:	ICP-MS4	_211019A	Analys	is Date: <b>10/1</b>	9/2021 2:05	5:00 PM	Prep Date:	10/18/:	2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Boron			0.196	0.0300	0.200	0	97.8	80	120	6.17	15
Calcium			5.73	0.300	5.00	0	115	80	120	5.34	15
Sample ID: <b>2110094</b>	-01A SD	Batch ID:	102438		TestNo	: SW	6020B		Units:	mg/L	
SampType: <b>SD</b>		Run ID:	ICP-MS4	_211019A	Analys	is Date: <b>10/1</b>	9/2021 2:11	:00 PM	Prep Date:	10/18/:	2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Boron			0.130	0.150	0	0.116				12.0	20
Calcium			15.7	1.50	0	15.6				0.484	20
Sample ID: <b>2110094</b>	-01A PDS	Batch ID:	102438		TestNo	: SW	6020B		Units:	mg/L	
SampType: <b>PDS</b>		Run ID:	ICP-MS4	_211019A	Analys	is Date: <b>10/1</b>	9/2021 2:31	:00 PM	Prep Date:	10/18/	2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Boron			0.281	0.0300	0.200	0.116	82.7	75	125		
Calcium			19.7	0.300	5.00	15.6	82.9	75	125		
Sample ID: <b>2110094</b>	-01A MS	Batch ID:	102438		TestNo	: SW	6020B		Units:	mg/L	
SampType: <b>MS</b>		Run ID:	ICP-MS4	_211019A	Analys	is Date: <b>10/1</b>	9/2021 2:33	8:00 PM	Prep Date:	10/18/:	2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Boron			0.285	0.0300	0.200	0.116	84.8	75	125		
Calcium			20.9	0.300	5.00	15.6	106	75	125		

**Qualifiers:** В Analyte detected in the associated Method Blank DF Analyte detected between MDL and RL MDL Method Detection Limit J

- ND Not Detected at the Method Detection Limit
- RL Reporting Limit

**CLIENT:** 

Golder

- J Analyte detected between SDL and RL
- Dilution Factor
- R RPD outside accepted control limits
- S Spike Recovery outside control limits

Page 2 of 9

Ν Parameter not NELAP certified

CLIENT:	Golder				۸N			C ST			FPORT
Work Order:	2110096						ICAL				
Project:	Luminant-	OGSES-A	sh Landfill	I-CCR			RunID	: I	CP-MS4_	_21101	.9A
Sample ID: 211009	4-01A MSD	Batch ID:	102438		TestNo	SW	6020B		Units:	mg/L	
SampType: <b>MSD</b>		Run ID:	ICP-MS4_	_211019A	Analysi	s Date: <b>10/1</b>	9/2021 2:35:	00 PM	Prep Date:	10/18	3/2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit	%RPD	RPDLimit Qual
Boron			0.297	0.0300	0.200	0.116	90.7	75	125	4.03	15
Calcium			20.7	0.300	5.00	15.6	103	75	125	0.757	15

**Qualifiers:** 

В

Analyte detected in the associated Method Blank Analyte detected between MDL and RL

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit R RPD outside accepted control limits Page 3 of 9

- S Spike Recovery outside control limits
- N Parameter not NELAP certified

CLIENT: Work Order:	Golder 2110096				AN	ALYI	FICAL Q	QC SI	UMMA	RY F	REPORT
Project:	Luminant	-OGSES-A	Ash Landf	ill-CCR			RunID	: 1	ICP-MS4_	_21101	9A
Sample ID: ICV-21	1019	Batch ID:	R117572	2	TestNo	SW	/6020B		Units:	mg/L	
SampType: <b>ICV</b>		Run ID:	ICP-MS	4_211019A	Analysi	s Date: <b>10/</b>	/19/2021 10:3	6:00 A	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit	%RPD	RPDLimit Qual
Boron			0.0970	0.0300	0.100	0	97.0	90	110		
Calcium			2.59	0.300	2.50	0	104	90	110		
Sample ID: LCVL·	211019	Batch ID:	R117572	2	TestNo	SW	6020B		Units:	mg/L	
SampType: <b>LCVL</b>		Run ID:	ICP-MS	4_211019A	Analysi	s Date: <b>10/</b>	/19/2021 10:4	5:00 A	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit	%RPD	RPDLimit Qual
Boron			0.0174	0.0300	0.0200	0	87.1	80	120		
Calcium			0.101	0.300	0.100	0	101	80	120		
Sample ID: CCV3	211019	Batch ID:	R117572	2	TestNo	SW	6020B		Units:	mg/L	
SampType: <b>CCV</b>		Run ID:	ICP-MS	4_211019A	Analysi	s Date: <b>10/</b>	/19/2021 12:20	6:00 P	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit	%RPD	RPDLimit Qual
Boron			0.191	0.0300	0.200	0	95.4	90	110		
Calcium			5.28	0.300	5.00	0	106	90	110		
Sample ID: CCV4	211019	Batch ID:	R117572	2	TestNo	SW	/6020B		Units:	mg/L	
SampType: <b>CCV</b>		Run ID:	ICP-MS	4_211019A	Analysi	s Date: 10/	19/2021 2:39:	00 PM	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit	%RPD	RPDLimit Qual
Boron			0.186	0.0300	0.200	0	93.2	90	110		
Calcium			5.32	0.300	5.00	0	106	90	110		
Sample ID: CCV5	211019	Batch ID:	R11757	2	TestNo	SW	6020B		Units:	mg/L	
SampType: <b>CCV</b>		Run ID:	ICP-MS	4_211019A	Analysi	s Date: <b>10/</b>	19/2021 3:08:	00 PM	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit	%RPD	RPDLimit Qual
Boron			0.195	0.0300	0.200	0	97.7	90	110		
Calcium			5.30	0.300	5.00	0	106	90	110		
Sample ID: CCV6	211019	Batch ID:	R117572	2	TestNo	SW	6020B		Units:	mg/L	
SampType: <b>CCV</b>		Run ID:	ICP-MS	4_211019A	Analysi	s Date: <b>10/</b>	19/2021 3:17:	00 PM	Prep Date:		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit	%RPD	RPDLimit Qual
Calcium			5.40	0.300	5.00	0	108	90	110		

**Qualifiers:** В Analyte detected in the associated Method Blank DF Dilution Factor J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit R

> RL Reporting Limit

**CLIENT:** 

Golder

- J Analyte detected between SDL and RL
- MDL Method Detection Limit
- RPD outside accepted control limits

Page 4 of 9

- S Spike Recovery outside control limits
- Ν Parameter not NELAP certified

CLIENT:	Golder		ΑΝΑΙ	VTICAL OCS
Work Order:	2110096		ANAL	ATTICAL QU S
Project:	Luminant-OGSES-Ash	Landfill-CCR		RunID:
Sample ID: DCS2	-102216 Batch ID: 10	02216	TestNo:	E300

### ANALYTICAL QC SUMMARY REPORT

IC2\_210928A

Sample ID:	DCS2-102216	Batch ID:	102216		TestNo	E30	0		Units:	mg/	L
SampType:	DCS2	Run ID:	IC2_21	0928A	Analys	is Date: <b>9/28</b>	/2021 1:38:	01 PM	Prep Date	: 9/28	8/2021
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimit Qual
Chloride			0.533	1.00	0.5000	0	107	70	130	0	0
Fluoride			0.179	0.400	0.2000	0	89.5	70	130	0	0
Sulfate			1.55	3.00	1.500	0	104	70	130	0	0

**Qualifiers:** 

В

Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDLMethod Detection LimitRRPD outside accepted control limits

Page 5 of 9

- S Spike Recovery outside control limits
- b Spike Receivery outside control min
- N Parameter not NELAP certified

#### **CLIENT:** Golder

#### Work Order: 2110096

#### Luminant-OGSES-Ash Landfill-CCR

### ANALYTICAL QC SUMMARY REPORT

**Project:** 

**RunID:** IC2\_211015A

The QC data in batch 102420 applies to the following samples: 2110096-01B, 2110096-02B, 2110096-03B, 2110096-04B, 2110096-05B, 2110096-06B, 2110096-07B

Sample ID:	MB-102420	Batch ID:	102420		TestNo	: E30	0		Units:	mg/L		
SampType:	MBLK	Run ID:	IC2_211	015A	Analysi	s Date: <b>10/1</b>	5/2021 12:2	0:32 P	Prep Date:	10/1	5/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimit	t Qual
Chloride			<0.300	1.00								
Fluoride			<0.100	0.400								
Sulfate			<1.00	3.00								
Sample ID:	LCS-102420	Batch ID:	102420		TestNo	: E30	0		Units:	mg/L		
SampType:	LCS	Run ID:	IC2_211	015A	Analysi	s Date: <b>10/1</b>	5/2021 12:3	6:33 P	Prep Date:	10/1	5/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimit	t Qual
Chloride			10.3	1.00	10.00	0	103	90	110			
Fluoride			4.04	0.400	4.000	0	101	90	110			
Sulfate			31.4	3.00	30.00	0	105	90	110			
Sample ID:	LCSD-102420	Batch ID:	102420		TestNo	: E30	0		Units:	mg/L		
SampType:	LCSD	Run ID:	IC2_211	015A	Analysi	s Date: <b>10/1</b>	5/2021 12:5	2:32 P	Prep Date:	10/1	5/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimit	t Qual
Chloride			10.2	1.00	10.00	0	102	90	110	1.25	20	
Fluoride			4.04	0.400	4.000	0	101	90	110	0.063	20	
Sulfate			31.4	3.00	30.00	0	105	90	110	0.235	20	
Sample ID:	2110094-10BMS	Batch ID:	102420		TestNo	: E30	0		Units:	mg/L		
SampType:	MS	Run ID:	IC2_211	015A	Analysi	s Date: <b>10/1</b>	5/2021 4:51	:37 PM	Prep Date:	10/1	5/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimit	t Qual
Chloride			428	10.0	200.0	272.7	77.4	90	110			S
Fluoride			214	4.00	200.0	0	107	90	110			
Sulfate			317	30.0	200.0	131.5	92.8	90	110			
Sample ID:	2110094-10BMSD	Batch ID:	102420		TestNo	E30	0		Units:	mg/L	i.	
SampType:	MSD	Run ID:	IC2_211	015A	Analysi	s Date: <b>10/1</b>	5/2021 5:07	:37 PM	Prep Date:	10/1	5/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD	RPDLimit	t Qual
Chloride			429	10.0	200.0	272.7	78.0	90	110	0.289	20	S
Fluoride			215	4.00	200.0	0	107	90	110	0.353	20	
Sulfate			316	30.0	200.0	131.5	92.2	90	110	0.334	20	

**Qualifiers:** Analyte detected in the associated Method Blank DF Dilution Factor В 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

> Analyte detected between SDL and RL J

Ν Parameter not NELAP certified Page 6 of 9

CLIENT:	Golder
	001001

Work Order:

## ANALYTICAL QC SUMMARY REPORT

Project: Luminant-OGSES-Ash Landfill-CCR

2110096

ES-Ash Landfill-CCR

RunID: IC2\_211015A

Sample ID:	2110096-07BMS	Batch ID:	102420		TestNo	E30	0		Units:	mg/L		
SampType:	MS	Run ID:	IC2_2110	015A	Analysi	is Date: <b>10/1</b>	5/2021 7:31	:37 PM	Prep Date:	10/15	/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit '	%RPD F	RPDLimit	t Qual
Chloride			215	10.0	200.0	28.21	93.2	90	110			
Fluoride			210	4.00	200.0	0	105	90	110			
Sulfate			298	30.0	200.0	121.6	88.1	90	110			S
Sample ID: 2110096-07BMSD Batch ID: 102420												
Sample ID:	2110096-07BMSD	Batch ID:	102420		TestNo	E30	0		Units:	mg/L		
Sample ID: SampType:	2110096-07BMSD MSD	Batch ID: Run ID:	102420 IC2_2110	015A	TestNo Analysi	: E30 is Date: 10/1	0 5/2021 7:47	7:37 PM	Units: Prep Date:	mg/L 10/15	/2021	
Sample ID: SampType: Analyte	2110096-07BMSD MSD	Batch ID: Run ID:	102420 IC2_2110 Result	015A RL	TestNo Analysi SPK value	: <b>E30</b> is Date: <b>10/1</b> Ref Val	0 5/2021 7:47 %REC	7:37 PM LowLimi	Units: Prep Date: t HighLimit	<b>mg/L</b> 10/15 %RPD F	<b>/2021</b> RPDLimit	t Qual
Sample ID: SampType: Analyte Chloride	2110096-07BMSD MSD	Batch ID: Run ID:	102420 IC2_2110 Result 212	015A RL 10.0	TestNo Analysi SPK value 200.0	28.21	0 5/2021 7:47 %REC 92.1	7:37 PM LowLimi 90	Units: Prep Date: t HighLimit 4	mg/L 10/15 %RPD F 1.06	<b>/2021</b> RPDLimit	t Qual
Sample ID: SampType: Analyte Chloride Fluoride	2110096-07BMSD MSD	Batch ID: Run ID:	102420 IC2_2110 Result 212 209	015A RL 10.0 4.00	TestNo Analysi SPK value 200.0 200.0	E300 is Date: 10/1 Ref Val 28.21 0	0 5/2021 7:47 %REC 92.1 105	7:37 PM LowLimi 90 90	Units: Prep Date: t HighLimit 4 110 110	mg/L 10/15 %RPD F 1.06 0.627	<b>/2021</b> RPDLimit 20 20	t Qual

**Qualifiers:** 

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

RL Reporting Limit

- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit
  - R RPD outside accepted control limits

Page 7 of 9

- S Spike Recovery outside control limits
- N Parameter not NELAP certified

Project:	Lumina	nt-OGSES-A	sh Landi	fill-CCR			RunII	<b>):</b> ]	IC2_2110	15A	
Sample ID: I	CV-211015	Batch ID:	R11753	9	TestNo	E300	0		Units:	mg/L	
SampType: I	cv	Run ID:	IC2_21	1015A	Analysi	s Date: <b>10/1</b>	5/2021 11:4	8:32 A	Prep Date	e:	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLin	nit HighLimit	%RPD RP	DLimit Qual
Chloride			26.0	1.00	25.00	0	104	90	110		
Fluoride			10.6	0.400	10.00	0	106	90	110		
Sulfate			80.8	3.00	75.00	0	108	90	110		
Sample ID: C	CCV1-211015	Batch ID:	R11753	9	TestNo	E300	0		Units:	mg/L	
SampType: <b>C</b>	CCV	Run ID:	IC2_21	1015A	Analysi	is Date: 10/1	5/2021 8:51	:37 PM	Prep Date	):	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLin	nit HighLimit	%RPD RP	DLimit Qual
Chloride			10.2	1.00	10.00	0	102	90	110		
Fluoride			4.07	0.400	4.000	0	102	90	110		
Sulfate			31.4	3.00	30.00	0	105	90	110		
Sample ID: C	CCV2-211015	Batch ID:	R11753	9	TestNo	: <b>E30</b>	0		Units:	mg/L	
SampType: <b>C</b>	ccv	Run ID:	IC2_21	1015A	Analysi	s Date: <b>10/1</b>	6/2021 12:3	5:37 A	Prep Date	):	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLin	nit HighLimit	%RPD RP	DLimit Qual
Chloride			10.3	1.00	10.00	0	103	90	110		
Fluoride			4.16	0.400	4.000	0	104	90	110		
Sulfate			31.6	3.00	30.00	0	105	90	110		
Sample ID: C	CCV3-211015	Batch ID:	R11753	9	TestNo	: <b>E30</b>	0		Units:	mg/L	
SampType: <b>C</b>	ccv	Run ID:	IC2_21	1015A	Analysi	s Date: <b>10/1</b>	6/2021 3:31	:37 AM	Prep Date	):	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLin	nit HighLimit	%RPD RP	DLimit Qual
Chloride			10.4	1.00	10.00	0	104	90	110		
Fluoride			4.17	0.400	4.000	0	104	90	110		
Sulfate			32.1	3.00	30.00	0	107	90	110		

**Qualifiers:** 

**CLIENT:** 

Work Order:

Golder

2110096

В Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL DF Dilution Factor

MDL Method Detection Limit R RPD outside accepted control limits Page 8 of 9

S Spike Recovery outside control limits

Ν Parameter not NELAP certified

## ANALYTICAL QC SUMMARY REPORT

IC2 211015A

CLIENT:	Golder				۸N	AI VT	ICAT (			V REPO	рт
Work Order:	2110096										
Project:	Luminant-	OGSES-A	sh Land	fill-CCR			RunII	): V	VC_21101	4C	
The QC data in batch 06B, 2110096-07B	ו 102408 ap	plies to the	following	samples: 2110	0096-01B, 2110	096-02B, 2	110096-03B	5, 2110096	6-04B, 21100	96-05B, 21100	96-
Sample ID: MB-102	408	Batch ID:	102408		TestNo:	M25	540C		Units:	mg/L	
SampType: <b>MBLK</b>		Run ID:	WC_21	1014C	Analysis	5 Date: <b>10/1</b>	4/2021 4:30	:00 PM	Prep Date:	10/14/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	&RPD RPDLim	it Qual
Total Dissolved Solid	ls (Residue,	Filtera	<10.0	10.0							
Sample ID: LCS-102	2408	Batch ID:	102408		TestNo:	M25	640C		Units:	mg/L	
SampType: <b>LCS</b>		Run ID:	WC_21	1014C	Analysis	5 Date: <b>10/1</b>	4/2021 4:30	:00 PM	Prep Date:	10/14/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	6RPD RPDLim	it Qual
Total Dissolved Solid	ls (Residue,	Filtera	744	10.0	745.6	0	99.8	90	113		
Sample ID: 2110088	-01A-DUP	Batch ID:	102408		TestNo:	M25	640C		Units:	mg/L	
SampType: <b>DUP</b>		Run ID:	WC_21	1014C	Analysis	a Date: 10/1	4/2021 4:30	:00 PM	Prep Date:	10/14/2021	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	&RPD RPDLim	it Qual
Total Dissolved Solid	ls (Residue,	Filtera	962	10.0	0	972.0				1.03 5	

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**Qualifiers:** 

Analyte detected in the associated Method Blank Analyte detected between MDL and RL

J ND Not Detected at the Method Detection Limit

RL Reporting Limit

В

J Analyte detected between SDL and RL DF Dilution Factor

MDL Method Detection Limit R RPD outside accepted control limits

S Spike Recovery outside control limits

Ν Parameter not NELAP certified

# DHL Analytical, Inc.

CLIENT:	Golder	
Work Order:	2110096	
Project:	Luminant-OGSES-Ash I	andfill-CCR
TestNo: E300	MDL	MQL
Analyte	mg/L	mg/L
Chloride	0.300	1.00

Chionde	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

# MQL SUMMARY REPORT

**ATTACHMENT 2** 

ALTERNATE SOURCE DEMONSTRATION REPORT

SOLDER

### ALTERNATE SOURCE DEMONSTRATION SUMMARY

### **OAK GROVE STEAM ELECTRIC STATION – ASH LANDFILL 1**

### Introduction

This Alternate Source Demonstration Summary was prepared to document that a source other than the Ash Landfill 1 (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").

### Ash Landfill 1 CCR Monitoring Well Network

A Site Plan showing Ash Landfill 1 and vicinity is shown on Figure 1. The CCR groundwater monitoring well system at the Ash Landfill 1 consists of six monitoring wells (MW-02, MW-05, MW-07, MW-08R, MW-09, and AL-10) that are each screened in the uppermost aquifer at the Site. The uppermost aquifer at the Site occurs under unconfined conditions within the shallow sand units at the Site (PBW, 2017a). Groundwater elevations have consistently been highest west of the Ash Landfill 1 and lowest east of the Ash Landfill 1 during the background and detection monitoring period, with a groundwater flow direction from west to east. Based on the observed groundwater potentiometric surface at the Site, the location of each CCR monitoring well relative to the Ash Landfill 1 is as follows:

Upgradient/Background Wells	Downgradient Wells
MW-02	MW-05
AL-10	MW-07
	MW-08R
	MW-09

### 2020 Semi-Annual Detection Monitoring Results and Discussion

Detection Monitoring Program groundwater data collected from the Ash Landfill 1 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 from the Site CCR monitoring well network in 2020 in accordance with 40 CFR 257.94. Golder collected the first semi-annual 2020 Detection Monitoring Program groundwater samples in May 2020 and the second semi-annual Detection Monitoring Program groundwater samples in September 2020.

Based on the 2020 semi-annual groundwater sample results, SSIs were identified for boron in downgradient wells MW-05 and MW-07 (maximum boron concentration of 0.302 mg/L) and sulfate in downgradient well MW-07 and MW-09 (maximum sulfate concentration of 123 mg/L). Boron sample concentrations also exceeded background prediction limits in upgradient wells MW-02 and AL-10 and sulfate sample concentrations exceeded background prediction limits in upgradient well AL-10 in 2020. Based on the generally similar concentrations of boron and sulfate in upgradient and downgradient wells and the elevated concentrations of boron and sulfate in upgradient wells the SSIs identified in 2020 in downgradient wells are attributed to natural variation in groundwater quality related to the heterogeneity of the uppermost aquifer at the Site rather than a release from the Ash Landfill 1.

#### Conclusion

SSIs or potential SSIs were observed in downgradient wells MW-05, MW-07, and MW-09 and upgradient well MW-02 and AL-10 during the 2020 Detection Monitoring Program sampling events at Ash Landfill 1. However, all SSIs are attributed to natural variation in groundwater quality due to the heterogeneity of the groundwater system and 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), 2017a. Coal Combustion Residual Rule, Groundwater Monitoring System Certification, Oak Grove Steam Electric Station, Ash Landfill 1, Robertson County, Texas. October 16, 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 Oak Grove Steam Electric Station

Location         Sampled         (mg/L)         (mg/	Sample	Date	В	Ca	CI	F	рН	SO4	TDS	
Prediction Limit         0.124         74.9         353         0.4         6.317.09         97.4         948           AL-10         11/04/15         0.0682         34.5         149         0.149 J         6.86         72.6         590           AL-10         12/18/15         0.0637         48.6         108         0.175 J         6.47         23.6         549           04/15/16         0.0573         44.8         86         0.133         6.51         23.6         549           06/16/16         0.0053         44.8         86         0.133         6.51         23.6         549           06/16/16         0.0756         35.1         57.2         0.195 J         6.78         21.5         52.7           10/02/17         0.0759         32.5         57.2         0.195 J         6.78         21.5         52.7           10/02/17         0.0973         27         50.6         0.120 J         6.68         11.6         362           09/06/18         0.183         10.8         67.7         11.8         333         51.9         308           05/07/20         0.128         18.8         62.2         0.30.3         6.87         11.8 <t< th=""><th>Location</th><th>Sampled</th><th>(mg/L)</th><th>(mg/L)</th><th>(mg/L)</th><th>(mg/L)</th><th>(s.u.)</th><th>(mg/L)</th><th>(mg/L)</th></t<>	Location	Sampled	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)	(mg/L)	
Upgradient Wells         0.06         0.07	Predic	tion Limit	0.124	74.9	353	0.4	6.31 7.09	97.4	948	
AL-10         11/04/15         0.0632         34.5         149         0.149.J         6.86         72.6         590           02/10/16         0.0637         48.6         108         0.197.J         6.75         34.9         599           04/15/16         0.0573         44.8         86         0.133         6.51         23.6         549           08/16/16         0.0915         34.7         66.7         0.155.J         6.44         23.5         433           08/25/16         0.0756         35.1         57.3         0.278.J         6.92         20.1         507           10/02/17         0.07973         27         50.6         0.120.J         6.85         12.2         398           06/04/18         0.0875         21.9         62.1         0.183.J         6.67         11.6         362           06/07/20         0.139         16.8         62.2         -0.303.J         6.87         11.1         317           9/9/2020         0.139         16.8         49.2         0.208.J         6.86         10.6         301           0.07/20         0.128         18.8         52.2         <5.010         6.75         11.8         333	Upgradient Wel	Upgradient Wells								
12/18/15         0.0539         37.5         81         0.15         6.45         20.6         414           02/10/16         0.0637         44.8         86         0.133         6.51         23.6         549           06/16/16         0.0915         34.7         66.7         0.155         16.44         23.5         436           08/25/16         0.105         87.5         444         <0.1         6.61         96.3         1.120           10/04/16         0.0759         32.5         57.2         0.195.1         6.78         12.2         398           06/04/18         0.0975         21.9         62.1         0.183         6.67         11.6         362           09/06/18         0.113         21.9         56.7         0.260.0         6.86         11.8         371           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         313           05/07/20         0.128         18.8         50.2         20.100         6.78         11.1         313           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         313           05/07/20	AL-10	11/04/15	0.0682	34.5	149	0.149 J	6.86	72.6	590	
02/10/16         0.0637         44.6         108         0.197.J         6.75         34.9         559           06/16/16         0.0975         34.7         66.7         0.155 J         6.44         23.5         436           08/25/16         0.105         87.5         444         <0.1         6.61         96.3         1,120           10/02/17         0.0756         35.1         57.3         0.278 J         6.92         20.1         507           10/02/17         0.0973         27         50.6         0.120 J         6.85         12.2         398           06/04/18         0.0875         21.9         62.1         0.183 J         6.67         11.6         362           09/06/18         0.113         21.9         62.1         0.183 J         6.67         11.8         333           05/07/20         0.128         18.8         62.2         <0.100         6.78         11.1         317           9/9/2020         0.139         16.8         49.2         0.208 J         6.63         34         320           04/15/16         0.0476         29         61.7         0.118 J         6.83         14.40           06/16/16         0	-	12/18/15	0.0539	37.5	81	0.15 J	6.45	20.6	414	
04/15/16         0.0573         44.8         86         0.133         6.51         23.6         544           06/16/16         0.0915         34.7         66.7         0.155 J         6.44         23.5         436           08/25/16         0.105         35.7         444         <0.1         6.61         96.3         1.120           10/04/16         0.0759         32.5         57.2         0.195 J         6.78         21.5         527           10/02/17         0.0975         21.9         62.1         0.183 J         6.67         11.6         362           09/06/18         0.0875         21.9         62.1         0.183 J         6.67         11.6         362           08/07/19         0.114         16.8         62.2         0.64         12.4         340           08/07/20         0.128         16.8         49.2         0.208 J         6.86         10.6         301           MW-02         11/04/15         0.0476         29         61.7         0.18 J         6.89         34.3         320           04/15/16         0.0476         29         61.7         0.18 J         6.83         134.3         320           04/16 <th></th> <th>02/10/16</th> <th>0.0637</th> <th>48.6</th> <th>108</th> <th>0.197 J</th> <th>6.75</th> <th>34.9</th> <th>599</th>		02/10/16	0.0637	48.6	108	0.197 J	6.75	34.9	599	
O6/16/16         0.0915         34.7         66.7         0.155 J         6.44         23.5         436           08/25/16         0.105         87.5         444         <0.1         6.61         96.3         1.120           10/04/16         0.0756         35.1         57.2         0.195 J         6.78         21.5         527           10/02/17         0.0973         27         50.6         0.120 J         6.85         12.2         398           06/04/18         0.0875         21.9         65.7         0.260 J         6.66         11.6         362           09/06/18         0.113         21.9         56.7         0.260 J         6.66         11.8         371           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         313           05/07/20         0.139         16.8         49.2         0.208 J         6.86         10.6         301           011/04/15         0.064         32.5         138         0.135 J         6.92         71.4         539           02/10/16         0.0452         2.9         6.17         0.118 J         6.83         34.8         343           00/0		04/15/16	0.0573	44.8	86	0.133	6.51	23.6	549	
08/25/16         0.015         87.5         444         <0.1		06/16/16	0.0915	34.7	66.7	0.155 J	6.44	23.5	436	
10/04/16         0.0756         35.1         57.2         0.278 J         6.92         20.1         507           10/02/17         0.0973         27         50.6         0.120 J         6.85         12.2         398           06/04/18         0.0875         21.9         56.7         0.260 J         6.67         11.6         362           09/06/18         0.113         21.9         56.7         0.260 J         6.64         12.4         340           05/07/20         0.128         18.8         56.2         0.363 J         6.67         11.1         333           05/07/20         0.128         18.8         66.2         0.363 J         6.87         11.8         333           05/07/20         0.128         18.8         49.2         0.208 J         6.86         10.6         301           MW-02         11/04/15         0.0476         29         61.7         0.118 J         6.83         15.9         308           02/10/16         0.0853         25.4         83.5         0.229 J         6.63         34.4         320           04/15/16         0.0492         12.9         21.9         0.164 J         6.89         97.4         667		08/25/16	0.105	87.5	444	<0.1	6.61	96.3	1,120	
12/22/16         0.0759         32.5         57.2         0.195 J         6.78         21.5         527           10/02/17         0.0973         27         50.6         0.120 J         6.85         12.2         398           06/04/18         0.113         21.9         56.7         0.260 J         6.66         11.6         362           09/06/18         0.113         21.9         56.7         0.260 J         6.66         11.8         333           05/07/20         0.128         18.8         66.2         0.363 J         6.87         11.8         333           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         317           9/9/2020         0.139         16.8         0.49.2         0.208 J         6.86         10.6         304           02/10/16         0.0476         29         61.7         0.118 J         6.83         34         320           06/61/16         0.106         26.5         87.8         0.161 J         6.89         34.8         343           06/61/16         0.106         26.5         87.8         0.164 J         6.58         22.4         163           10/02		10/04/16	0.0756	35.1	57.3	0.278 J	6.92	20.1	507	
10/02/17         0.0973         27         50.6         0.120 J         6.85         12.2         398           06/04/18         0.0875         21.9         62.1         0.183 J         6.67         11.6         362           09/06/18         0.113         21.9         56.7         0.260 J         6.66         11.8         331           05/07/19         0.115         18.8         66.2         0.363 J         6.87         11.8         333           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         317           9/9/2020         0.139         16.8         49.2         0.208 J         6.86         10.6         301           MW-02         11/04/15         0.0476         29         61.7         0.118 J         6.83         15.9         308           02/101/6         0.0853         25.4         83.5         0.229 J         6.63         34.8         343           06/61/16         0.106         26.5         87.8         0.161 J         6.89         34.8         343           08/25/16         0.0492         12.9         21.9         0.164 J         6.89         9.67         310		12/22/16	0.0759	32.5	57.2	0.195 J	6.78	21.5	527	
06/04/18         0.0875         21.9         62.1         0.183 J         6.67         11.6         362           09/06/18         0.113         21.9         56.7         0.260 J         6.64         11.8         371           05/07/20         0.115         18.8         66.2         0.363 J         6.87         11.8         333           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         317           9/9/2020         0.139         16.8         49.2         0.208 J         6.86         10.6         301           MW-02         11/04/15         0.064         32.5         138         0.135 J         6.92         71.4         539           02/10/16         0.0633         25.4         83.5         0.229 J         6.63         34         320           04/15/16         0.0597         39.6         68         0.102 J         6.89         34.8         343           08/25/16         0.0492         12.9         21.9         0.164 J         6.58         32.4         163           10/02/17         0.0567         22.2         42.4         <0.109 J         6.28         12.1         740		10/02/17	0.0973	27	50.6	0.120 J	6.85	12.2	398	
09/06/18         0.113         21.9         66.7         0.260.J         6.66         11.8         371           05/17/19         0.114         16.8         67.9         0.262.J         6.64         12.4         340           08/20/19         0.115         18.8         66.2         0.363.J         6.87         11.8         333           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         317           9/9/2020         0.139         16.8         49.2         0.208.J         6.86         10.6         301           MW-02         11/04/15         0.0476         29         61.7         0.118.J         6.83         34         320           04/15/16         0.06597         39.6         68         0.102         6.51         18.1         440           06/16/16         0.0492         12.9         21.9         0.164.J         6.58         22.4         163           08/25/16         0.0492         12.9         21.9         0.164.J         6.68         9.67         310           06/04/18         0.144         82.4         275         0.139.J         6.28         121         740 <tr< th=""><th></th><th>06/04/18</th><th>0.0875</th><th>21.9</th><th>62.1</th><th>0.183 J</th><th>6.67</th><th>11.6</th><th>362</th></tr<>		06/04/18	0.0875	21.9	62.1	0.183 J	6.67	11.6	362	
05/17/19         0.114         16.8         67.9         0.282.J         6.64         12.4         340           08/20/19         0.115         18.8         66.2         0.363.J         6.87         11.8         333           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         317           9/9/2020         0.139         16.8         49.2         0.208.J         6.86         10.6         301           MW-02         11/04/15         0.064         32.5         138         0.135.J         6.92         71.4         539           12/18/15         0.064         32.5         138         0.161.J         6.83         15.9         308           02/10/16         0.0653         25.4         83.5         0.229.J         6.63         34.8         343           08/25/16         0.0492         12.9         21.9         0.164.J         6.58         22.4         163           10/04/16         0.114         47.8         185         0.22         1.83         34.8         590           10/02/17         0.5667         22.2         42.4         <0.100         6.68         9.67         310 <t< th=""><th></th><th>09/06/18</th><th>0.113</th><th>21.9</th><th>56.7</th><th>0.260 J</th><th>6.66</th><th>11.8</th><th>371</th></t<>		09/06/18	0.113	21.9	56.7	0.260 J	6.66	11.8	371	
08/20/19         0.115         18.8         66.2         0.363 J         6.87         11.8         333           05/07/20         0.128         18.8         52.2         <0.100         6.78         11.1         317           9/9/2020         0.139         16.8         49.2         0.208 J         6.86         10.6         301           MW-02         11/04/15         0.064         32.5         138         0.135 J         6.92         71.4         539           02/10/16         0.0853         25.4         83.5         0.229 J         6.63         34         320           04/15/16         0.0597         39.6         68         0.102         6.51         18.1         440           06/16/16         0.106         26.5         87.8         0.161 J         6.89         34.8         343           08/25/16         0.0492         12.9         21.9         0.185 J         6.69         97.4         667           10/04/16         0.113         61.4         222         0.185 J         6.89         967         310           006/04/18         0.144         82.4         275         0.139 J         6.28         121         740		05/17/19	0.114	16.8	67.9	0.262 J	6.64	12.4	340	
05/07/20         0.128         18.8         52.2         <0.100		08/20/19	0.115	18.8	66.2	0.363 J	6.87	11.8	333	
9/9/2020         0.139         16.8         49.2         0.208 J         6.86         10.6         301           MW-02         11/04/15         0.064         32.5         138         0.135 J         6.92         71.4         539           12/18/15         0.0476         29         61.7         0.118 J         6.83         15.9         308           02/10/16         0.0853         25.4         83.5         0.229 J         6.63         34         320           04/15/16         0.0597         39.6         68         0.102         6.51         18.1         440           06/16/16         0.106         26.5         87.8         0.161 J         6.89         34.8         343           08/25/16         0.0492         12.9         21.9         0.185 J         6.69         97.4         667           12/21/16         0.11         47.8         185         0.233 J         6.78         83.4         590           10/02/17         0.0567         22.2         42.4         <0.100         6.68         9.67         310           06/04/18         0.144         82.4         275         0.139 J         6.28         121         740		05/07/20	0.128	18.8	52.2	<0.100	6.78	11.1	317	
MW-02         11/04/15         0.064         32.5         138         0.135 J         6.92         71.4         539           12/18/15         0.0476         29         61.7         0.118 J         6.83         15.9         308           02/10/16         0.0853         25.4         83.5         0.229 J         6.63         34         320           04/15/16         0.0597         39.6         68         0.102         6.51         18.1         440           06/16/16         0.0492         12.9         21.9         0.164 J         6.58         22.4         163           08/25/16         0.0492         12.9         21.9         0.164 J         6.58         22.4         163           10/02/17         0.0567         22.2         2.4         4.4         6.78         83.4         590           10/02/17         0.0567         22.2         42.4         <0.100         6.68         9.67         310           06/04/18         0.144         82.4         275         0.139 J         6.28         121         740           09/02020         0.0875         19.9         53.8         0.558         6.59         20.1         260		9/9/2020	0.139	16.8	49.2	0.208 J	6.86	10.6	301	
12/18/15         0.0476         29         61.7         0.118 J         6.83         15.9         308           02/10/16         0.0853         25.4         83.5         0.229 J         6.63         34         320           04/15/16         0.0597         39.6         68         0.102         6.51         18.1         440           06/16/16         0.106         26.5         87.8         0.161 J         6.89         34.8         343           08/25/16         0.0492         12.9         21.9         0.164 J         6.58         22.4         163           10/04/16         0.111         47.8         185         0.293 J         6.78         83.4         590           10/02/17         0.0567         22.2         42.4         <0.100         6.68         9.67         310           06/04/18         0.148         70.9         259         0.221 J         6.03         31.1         306           05/17/19         0.0981         20         67.6         0.321 J         6.63         31.1         306           05/7/2020         0.0986         11.5         2.87         <0.100         6.63         6.14         106           9/9/2020<	MW-02	11/04/15	0.064	32.5	138	0.135 J	6.92	71.4	539	
Devingradient         02/10/16         0.0853         25.4         83.5         0.229 J         6.63         34         320           04/15/16         0.0597         39.6         68         0.102         6.51         18.1         440           06/16/16         0.106         26.5         87.8         0.161 J         6.89         34.8         343           08/25/16         0.0492         12.9         21.9         0.164 J         6.58         22.4         163           10/02/17         0.0567         22.2         42.4         <0.100         6.68         9.67         310           06/04/18         0.144         82.4         275         0.139 J         6.28         121         740           09/06/18         0.144         82.4         275         0.139 J         6.28         121         740           09/06/18         0.144         82.4         275         0.139 J         6.63         31.1         306           08/20/19         0.0875         19.9         53.8         0.558         6.59         20.1         260           5/7/2020         0.0996         11.5         2.87         <0.100         6.63         6.14         106		12/18/15	0.0476	29	61.7	0.118 J	6.83	15.9	308	
04/15/16         0.0597         39.6         68         0.102         6.51         18.1         440           06/16/16         0.106         26.5         87.8         0.161 J         6.89         34.8         343           08/25/16         0.0492         12.9         21.9         0.164 J         6.58         22.4         163           10/04/16         0.113         61.4         222         0.185 J         6.69         97.4         667           12/21/16         0.11         47.8         185         0.293 J         6.78         83.4         590           06/04/18         0.144         82.4         275         0.139 J         6.28         121         740           09/06/18         0.148         70.9         259         0.221 J         6.02         116         872           05/7/12020         0.0986         11.5         2.87         <0.100         6.63         6.14         106           9/9/2020         0.166         55.6         210         0.287 J         6.76         99.2         592           Downgradient Wells         MW-04         9/9/2020         0.0838           -         30.2           MW-0		02/10/16	0.0853	25.4	83.5	0.229 J	6.63	34	320	
06/16/16         0.106         26.5         87.8         0.161 J         6.89         34.8         343           08/25/16         0.0492         12.9         21.9         0.164 J         6.58         22.4         163           10/04/16         0.113         61.4         222         0.185 J         6.69         97.4         667           12/21/16         0.11         47.8         185         0.293 J         6.78         83.4         590           10/02/17         0.0567         22.2         42.4         <0.100         6.68         9.67         310           06/06/18         0.144         82.4         275         0.39 J         6.28         121         740           09/06/18         0.148         70.9         259         0.221 J         6.02         116         872           05/17/19         0.0981         20         67.6         0.321 J         6.63         6.14         106           9/9/2020         0.166         55.6         210         0.287 J         6.76         99.2         592           Downgradient Wells         MW-04         9/9/2020         0.0838           -         30.2		04/15/16	0.0597	39.6	68	0.102	6.51	18.1	440	
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$		06/16/16	0.106	26.5	87.8	0.161 J	6.89	34.8	343	
10/04/16         0.113         61.4         222         0.185 J         6.69         97.4         667           12/21/16         0.11         47.8         185         0.293 J         6.78         83.4         590           10/02/17         0.0567         22.2         42.4         <0.100         6.68         9.67         310           06/04/18         0.144         82.4         275         0.139 J         6.28         121         740           09/06/18         0.148         70.9         259         0.221 J         6.02         116         872           05/17/19         0.09875         19.9         53.8         0.558         6.59         20.1         260           5/7/2020         0.0996         11.5         2.87         <0.100         6.63         6.14         106           9/9/2020         0.166         55.6         210         0.287 J         6.76         99.2         592           Downgradient Wells         10/04/15         0.0628         15.4         64.8         0.272 J         7.11         13.6         285           12/18/15         0.0621         13         60.2         0.476         6.52         10.5         232 <th></th> <th>08/25/16</th> <th>0.0492</th> <th>12.9</th> <th>21.9</th> <th>0.164 J</th> <th>6.58</th> <th>22.4</th> <th>163</th>		08/25/16	0.0492	12.9	21.9	0.164 J	6.58	22.4	163	
12/21/16         0.11         47.8         185         0.293 J         6.78         83.4         590           10/02/17         0.0567         22.2         42.4         <0.100         6.68         9.67         310           06/04/18         0.144         82.4         275         0.139 J         6.28         121         740           09/06/18         0.148         70.9         259         0.221 J         6.02         116         872           05/17/19         0.0981         20         67.6         0.321 J         6.63         31.1         306           08/20/19         0.0875         19.9         53.8         0.558         6.59         20.1         260           5/7/2020         0.0996         11.5         2.87         <0.100         6.63         6.14         106           9/9/2020         0.166         55.6         210         0.287 J         6.76         99.2         592           Downgradient Wells         MW-04         9/9/2020         0.0628         15.4         64.8         0.272 J         7.11         13.6         285           12/18/15         0.0621         13         60.2         0.476         6.52         10.5		10/04/16	0.113	61.4	222	0.185 J	6.69	97.4	667	
10/02/17         0.0567         22.2         42.4         <0.100		12/21/16	0.11	47.8	185	0.293 J	6.78	83.4	590	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		10/02/17	0.0567	22.2	42.4	<0.100	6.68	9.67	310	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		06/04/18	0.144	82.4	275	0.139 J	6.28	121	740	
05/17/19         0.0981         20         67.6         0.321 J         6.63         31.1         306           08/20/19         0.0875         19.9         53.8         0.558         6.59         20.1         260           5/7/2020         0.0996         11.5         2.87         <0.100         6.63         6.14         106           9/9/2020         0.166         55.6         210         0.287 J         6.76         99.2         592           Downgradient Wells         MW-04         9/9/2020         0.0628         15.4         64.8         0.272 J         7.11         13.6         285           11/04/15         0.0628         15.4         64.8         0.272 J         7.11         13.6         285           12/18/15         0.0621         13         60.2         0.476         6.52         10.5         232           02/10/16         0.0447         14         59.7         0.397 J         6.67         11.9         235           04/15/16         0.058         14.2         60.4         0.306 J         6.61         11.8         287           10/04/16         0.059         15.4         57.9         0.477         6.87         10.9		09/06/18	0.148	70.9	259	0.221 J	6.02	116	872	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		05/17/19	0.0981	20	67.6	0.321 J	6.63	31.1	306	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$		08/20/19	0.0875	19.9	53.8	0.558	6.59	20.1	260	
9/9/2020         0.166         55.6         210         0.287 J         6.76         99.2         592           Downgradient Wells		5/7/2020	0.0996	11.5	2.87	<0.100	6.63	6.14	106	
Downgradient Wells           MW-04         9/9/2020         0.0838            30.2           MW-05         11/04/15         0.0628         15.4         64.8         0.272 J         7.11         13.6         285           12/18/15         0.0621         13         60.2         0.476         6.52         10.5         232           02/10/16         0.0447         14         59.7         0.397 J         6.67         11.9         235           04/15/16         0.0458         14.3         55.4         0.284         6.42         10.7         288           06/15/16         0.058         14.2         60.4         0.306 J         6.61         11.8         269           08/24/16         0.0877         13.1         63         0.262 J         6.75         11.8         287           10/04/16         0.059         15.4         57.9         0.477         6.87         10.9         253           12/22/16         0.0759         61.4         264         0.446         6.63         55.6         778           10/02/17         0.0665         17.5         58.6         0.295 J         6.89         10.4         2		9/9/2020	0.166	55.6	210	0.287 J	6.76	99.2	592	
MW-04         9/9/2020         0.0838            30.2           MW-05         11/04/15         0.0628         15.4         64.8         0.272 J         7.11         13.6         285           12/18/15         0.0621         13         60.2         0.476         6.52         10.5         232           02/10/16         0.0447         14         59.7         0.397 J         6.67         11.9         235           04/15/16         0.0458         14.3         55.4         0.284         6.42         10.7         288           06/15/16         0.058         14.2         60.4         0.306 J         6.61         11.8         269           08/24/16         0.0877         13.1         63         0.262 J         6.75         11.8         287           10/04/16         0.059         15.4         57.9         0.477         6.87         10.9         253           12/22/16         0.0759         61.4         264         0.446         6.63         55.6         778           10/02/17         0.0665         17.5         58.6         0.295 J         6.89         10.4         246           06/05/18	Downgradient V	Vells				I	1			
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	MW-04	9/9/2020	0.0838					30.2		
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	MVV-05	11/04/15	0.0628	15.4	64.8	0.272 J	7.11	13.6	285	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		12/18/15	0.0621	13	60.2	0.476	6.52	10.5	232	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		02/10/16	0.0447	14	59.7	0.397 J	6.67	11.9	235	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		04/15/16	0.0458	14.3	55.4	0.284	6.42	10.7	288	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$		00/13/10	0.056	14.2	60.4	0.306 J	6.01	11.0	209	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		10/24/10	0.0677	15.1	57.0	0.202 J	0.75	11.0	207	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		10/04/10	0.059	61.4	37.9	0.477	0.07	10.9	203	
10/02/11         0.0005         17.5         30.0         0.233         0.03         10.4         240           06/05/18         0.0739         16.8         60         0.391 J         6.43         12.1         253           09/07/18         0.077         15.8         63.3         0.392 J         6.11         10.6         249           05/17/19         0.0686         13.5         66.4         0.462         6.57         11.2         257           08/20/19         0.079         16         66.7         0.514         6.78         10.8         263           05/07/20         0.0985         18         71.8         0.344 J         6.68         10.6         264           09/09/20         0.201         20.5         79.8         0.372 J         6.81         66.5         407		12/22/10	0.0759	17.5	58.6	0.440	6.80	10.4	2/6	
09/07/18         0.07         15.8         63.3         0.392         0.11         10.6         249           05/17/19         0.0686         13.5         66.4         0.462         6.57         11.2         257           08/20/19         0.079         16         66.7         0.514         6.78         10.8         263           05/07/20         0.0985         18         71.8         0.344         6.68         10.6         264           09/09/20         0.201         20.5         79.8         0.372         6.81         66.5         407		06/05/18	0.0000	16.8	60	0.2000	6.43	12.4	253	
05/07/10         0.077         10.0         06.07         0.023         0.11         10.0         243           05/17/19         0.0686         13.5         66.4         0.462         6.57         11.2         257           08/20/19         0.079         16         66.7         0.514         6.78         10.8         263           05/07/20         0.0985         18         71.8         0.344 J         6.68         10.6         264           09/09/20         0.201         20.5         79.8         0.372 J         6.81         66.5         407		09/07/18	0.077	15.8	63.3	0.392 1	6 11	10.6	200	
08/20/19         0.079         16         66.7         0.514         6.78         10.8         263           05/07/20         0.0985         18         71.8         0.344 J         6.68         10.6         264           09/09/20         0.201         20.5         79.8         0.372 J         6.81         66.5         407		05/17/19	0.0686	13.5	66.4	0.092 0	6.57	11.0	257	
05/07/20 0.0985 18 71.8 0.344 J 6.68 10.6 264 09/09/20 0.201 20.5 79.8 0.372 J 6.81 66.5 407		08/20/19	0.079	16	66.7	0.402	6.78	10.8	263	
09/09/20 0.201 20.5 79.8 0.372 J 6.81 66.5 407		05/07/20	0.0985	18	71.8	0.344.1	6.68	10.6	264	
		09/09/20	0.201	20.5	79.8	0.372 J	6.81	66.5	407	

#### TABLE 1 CCR Groundwater Detection Monitoring Data Summary **Oak Grove Steam Electric Station**

Sample	Date	В	Са	CI	F	pН	SO4	TDS
Location	Sampled	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(s.u.)	(mg/L)	(mg/L)
Predic	tion Limit	0.124	74.9	353	0.4	6.31 7.09	97.4	948
MW-07	11/03/15	0.0483	8.57	20.2	0.289 J	6.42	11.5	276
	12/17/15	0.0539	8 75	17.7	0.319 J	6.86	14 7	243
	02/09/16	0.0547	13.3	28.9	0.276 J	7.18	25.3	283
	04/15/16	0.0567	10	20.9	0.187	6.71	16	341
	06/15/16	0.0639	10.5	22.9	0.226 J	6.75	23.2	294
	08/24/16	0.0691	9.58	20.4	0.159 J	6.89	21.8	290
	10/04/16	0.0549	10.3	15.6	0.277 J	6.82	17.1	256
	12/22/16	0.054	12.5	22.9	0.229 J	6.29	34.7	262
	10/02/17	0.0733	13.9	15.8	0.178 J	6.59	38.4	298
	06/05/18	0.105	17.5	15.7	0.169 J	5.98	61.1	316
	09/07/18	0.151	19.7	21.5	0.250 J	6.18	80.3	357
	11/06/18	0.154						
	05/17/19	0.132	17.1	20.2	0.244 J	6.83	84.1	355
	08/19/19	0.215	22.8	19.7	0.367 J	6.77	100	385
	05/07/20	0.302	29.7	22.4	0.234 J	6.84	123	432
	9/9/2020	0.297	26.9	24.7	0.302 J	6.58	121	413
MW-08	11/04/15	0.0631	120	599	0.17 J	6.81	138	2,070
	12/18/15	0.0604	70.4	488	0.158 J	6.78	49.8	1,140
	02/09/16	0.0695	140	612	0.175 J	6.42	170	1,530
	04/15/16	0.0726	133	566	<0.1	6.61	139	1,680
	06/16/16	0.0677	76.6	520	<0.1	6.76	83.6	1,090
	8/2016				Destroyed			
MW-08R	12/22/16	0.0702	32.4	166	0.355 J	6.93	39.7	617
	03/21/17	0.0662	117	563	0.2 J	5.83	98.3	1,220
	04/20/17	0.0696	115	560	0.149 J	5.91	94.9	1,190
	10/02/17	0.061	13.1	14.4	<0.100	6.63	28.7	243
	06/05/18	0.082	18.9	53.9	0.138 J	6.37	9.66	302
	09/07/18	0.0921	106	504	0.242 J	5.84	96.9	1,550
	11/06/18		15.7	19				268
	05/17/19	0.102	16.7	69.8	0.269 J	6.54	12.4	326
	08/20/19	0.096	24.9	48	0.501	6.84	30.7	255
	05/07/20	0.122	19	51.8	0.117 J	6.83	11.1	320
	9/9/2020	0.0977	15.8	55.5	0.344 J	6.68	19.0	256
MW-09	11/03/15	0.0722	36.4	155	0.149 J	6.45	74.9	583
	12/18/15	0.077	40.3	157	0.266 J	6.48	83.1	528
	02/09/16	0.072	38.4	158	0.152 J	6.16	80	445
	04/15/16	0.0734	42.2	151	<0.1	6.41	80.9	568
	00/15/10	0.0778	43.1	174	<0.1	0.52	98.7	574
	00/23/10	0.0829	43.0	195	<0.1	0.70	110	715
	10/04/10	0.0603	47.0	200	0.256 J	0.04	100	701
	10/02/17	0.0770	42.0	290	C 109 J	0.07	05.2	131
	06/04/19	0.100	21.7	6.49	~0.100	6.29	90.0 6.09	433
	00/04/10	0.091	<u>40.8</u>	186	0.102 J	5.61	10/	704
	11/06/18	0.0999	43.0		0.134 J	5.01	58.6	104
	05/17/19	0.12	17.2	366	0.541	6.72	53.2	935
	08/20/19	0.12	26	61.2	0.359 1	6.96	22.3	331
	05/07/20	0.0988	20.2	45.1	0.234	6.68	17.3	212
	9/9/2020	0.123	48.5	156	0 152 J	6 72	99.6	468
	5/5/2020	0.120	70.0	100	0.102.0	0.72	33.0	400

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



JONGOLTANT

PROJECT NO. 19122262

R	YYYY-MM-DD		2020-01-23	
	DESIGNED		AJD	
	PREPARED		AJD	
	REVIEWED		WFV	
	APPROVED		WFV	
		REV.		FIGURE
		0		1

ATTACHMENT 3

2021 GROUNDWATER POTENTIOMETRIC SURFACE MAPS



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