2021 Annual Groundwater Monitoring and Corrective Action Report

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

Prepared for:

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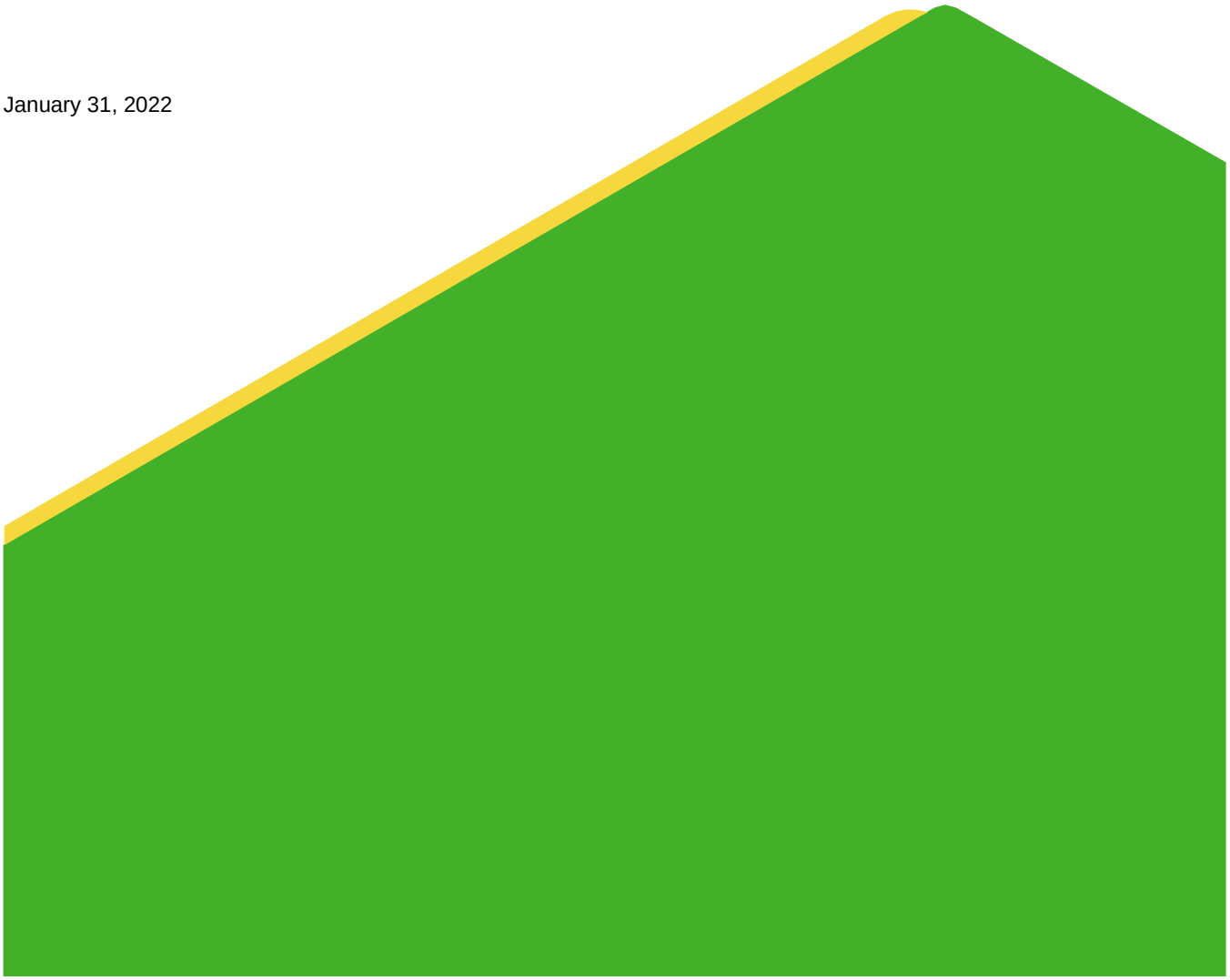

TABLE OF CONTENTS

LIST OF FIGURES II

LIST OF TABLES II

LIST OF ATTACHMENTS II

ACRONYMS AND ABBREVIATIONS III

EXECUTIVE SUMMARY IV

1.0 INTRODUCTION 1

2.0 MONITORING AND CORRECTIVE ACTION PROGRAM STATUS 3

3.0 KEY ACTIONS COMPLETED IN 2021 5

4.0 PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS 6

5.0 KEY ACTIVITIES PLANNED FOR 2022 7

6.0 REFERENCES 8

LIST OF FIGURES

Figure 1 Ash Landfill 1 Detailed Site Plan

LIST OF TABLES

Table 1 Statistical Background Values

Table 2 Appendix III Analytical Results

LIST OF ATTACHMENTS

Attachment 1 Alternate Source Demonstration Report

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

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 Federal CCR Program requirements for detection and assessment monitoring in 30 T.A.C. §352.941 and 30 T.A.C. §352.951, respectively. Pursuant to 30 T.A.C. § 352.902, this report will be submitted to TCEQ for review no later than 30 days after the report has been placed in the facility's operating record. For existing CCR landfills and surface impoundments, the CCR Rule requires that the owner or operator prepare an annual groundwater monitoring and corrective action report to document the status of the groundwater monitoring and corrective action program for the CCR unit for the previous calendar year. Per §257.90(e) of the CCR Rule, the report should contain the following information, to the extent available:

(1) A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;

(2) Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;

(3) In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;

(4) A narrative discussion of any transition between monitoring programs (*e.g.,* the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels); and

(5) Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.

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

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

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

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

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

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

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

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

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

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

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

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

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

2.0 MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

The 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:

Detection Monitoring Program Summary

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

The statistical background values and Appendix III analytical data are presented in Tables 1 and 2, respectively. SSIs of Appendix III parameters were identified 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 Source Demonstration based on the 2020 sample

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

Detection Monitoring Program groundwater samples were collected from the CCR groundwater monitoring network on a semi-annual basis in 2021, as required by the CCR Rule. The first 2021 semi-annual Detection Monitoring Program sampling event was conducted in June 2021. The second 2021 semi-annual Detection Monitoring Program sampling event was conducted in October 2021. The 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.

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. A copy of the Alternate Source Demonstration is provided in Attachment 1.

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

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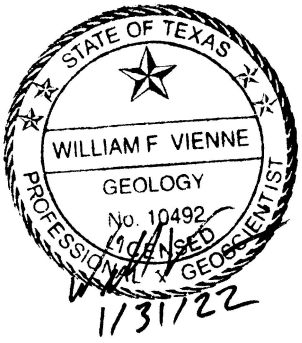
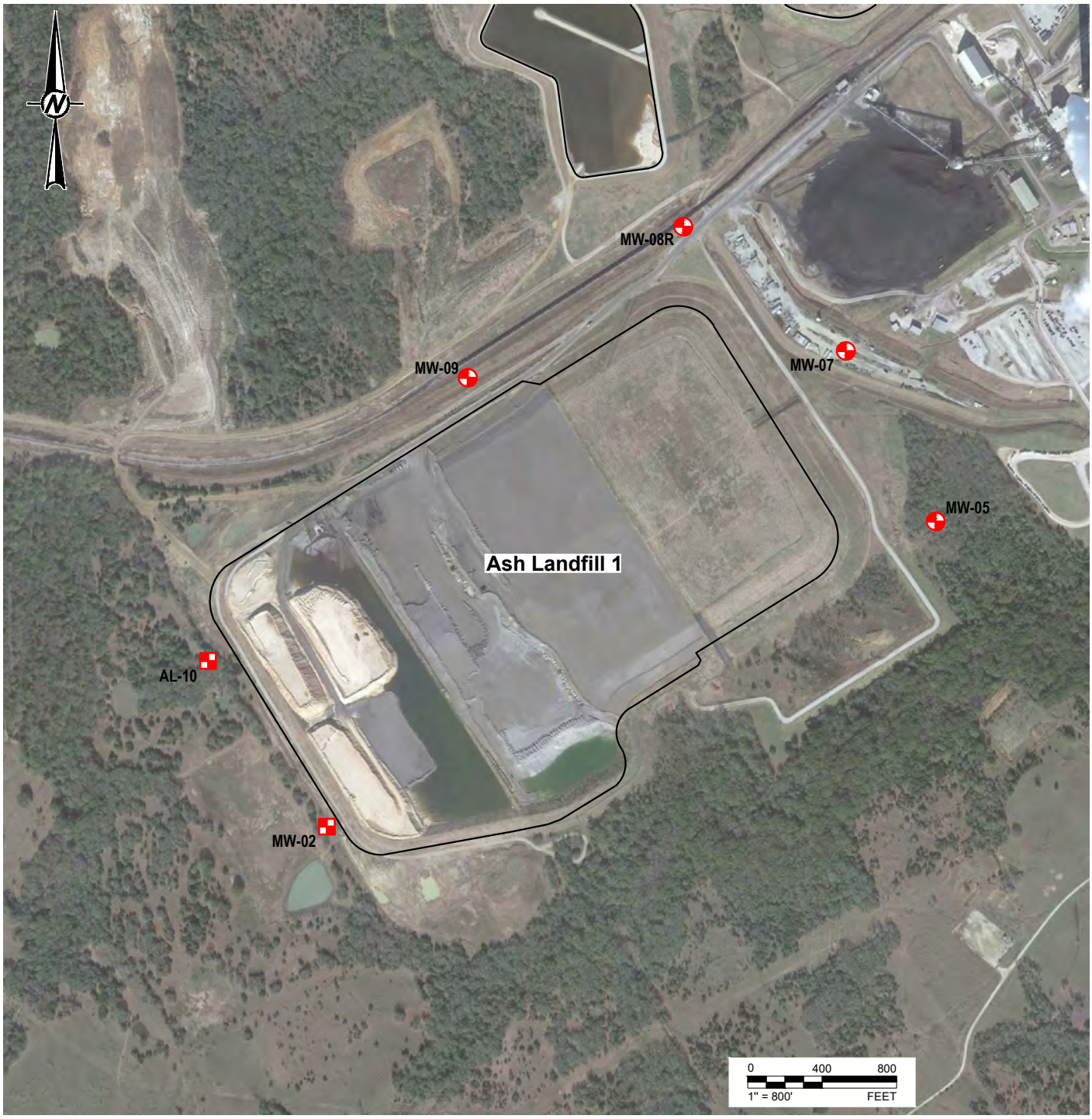


FIGURES



LEGEND

- DOWNGRADIENT CCR MONITORING WELL
- UPGRADIENT CCR MONITORING WELL

REFERENCE(S)

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 12/9/18.

CLIENT
LUMINANT

PROJECT
OAK GROVE STEAM ELECTRIC STATION
ROBERTSON COUNTY, TEXAS

TITLE
DETAILED SITE PLAN - ASH LANDFILL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-01-23
DESIGNED	AJD
PREPARED	AJD
REVIEWED	WFV
APPROVED	WFV

PROJECT NO.	REV.	FIGURE
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TABLES

Table 1
Statistical Background Value
OGSES Ash Landfill 1

Parameter	Statistical Background Value
Boron (mg/L)	0.124
Calcium (mg/L)	74.9
Chloride (mg/L)	353
Fluoride (mg/L)	0.4
field pH (s.u.)	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 Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	F (mg/L)	pH (s.u.)	SO_4 (mg/L)	TDS (mg/L)
Upgradient Wells								
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	6.87	11.8	333
	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	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	0.0981	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
	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 Wells								
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
	05/17/19	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
	06/16/21	0.0753	17.7	77.7	0.415	6.69	10	255
	10/12/21	0.0615	20.9	83.6	0.433	6.52	11.7	282
	10/12/2021 DUP	0.0703 J	20.9	85.5	0.425	6.52	12.1	272

TABLE 2
APPENDIX III ANALYTICAL RESULTS
OGSES ASH LANDFILL 1

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	F (mg/L)	pH (s.u.)	SO_4 (mg/L)	TDS (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	0.344 J	6.68	19.0	256
	06/16/21	0.116	15.3	43.5	0.263 J	6.76	9.26	266
	10/12/21	0.107	32.8	268	<0.1	6.76	136	874
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
	06/15/16	0.0778	43.1	174	<0.1	6.52	98.7	574
	08/25/16	0.0829	45.6	195	<0.1	6.76	116	715
	10/04/16	0.0803	47.8	179	0.256 J	6.64	108	648
	12/22/16	0.0776	42.6	290	0.159 J	6.87	116	791
	10/02/17	0.106	58.2	140	<0.100	6.76	95.3	433
	06/04/18	0.091	21.7	6.48	0.162 J	6.28	6.08	135
	09/06/18	0.0999	49.8	186	0.134 J	5.61	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 J	6.68	17.3	212
	09/09/20	0.123	48.5	156	0.152 J	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.

ATTACHMENT 1

ALTERNATE SOURCE DEMONSTRATION REPORT

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 AL-10	MW-05 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 above background prediction limits, 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

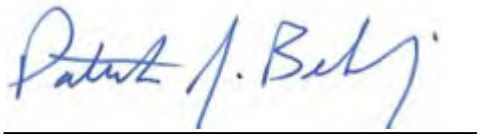
SSIs or potential SSIs were observed in downgradient wells MW-05, MW-07, and MW-09 and upgradient well MW-02 and AL-10 during the 2020 Detection Monitoring Program sampling events at Ash Landfill 1. However, all SSIs are attributed to natural variation in groundwater quality due to the heterogeneity 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.

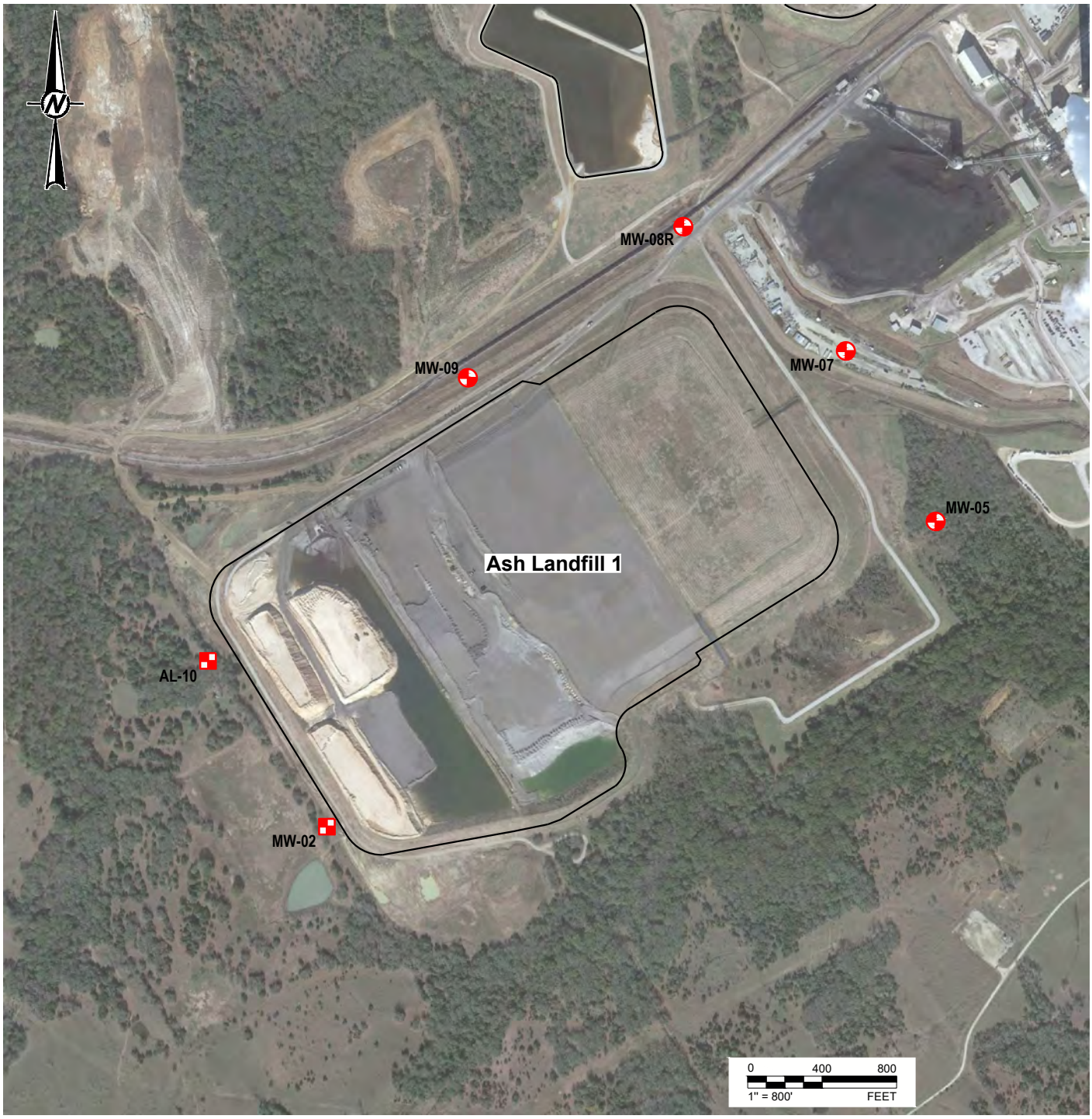
TABLE 1
CCR Groundwater Detection Monitoring Data Summary
Oak Grove Steam Electric Station

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	F (mg/L)	pH (s.u.)	SO_4 (mg/L)	TDS (mg/L)
Prediction Limit		0.124	74.9	353	0.4	6.31 7.09	97.4	948
Upgradient Wells								
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	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	0.0476	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	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	0.0981	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	0.0838	--	--	--		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	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

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

Sample Location	Date Sampled	B (mg/L)	Ca (mg/L)	Cl (mg/L)	F (mg/L)	pH (s.u.)	SO_4 (mg/L)	TDS (mg/L)
Prediction 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
	06/15/16	0.0778	43.1	174	<0.1	6.52	98.7	574
	08/25/16	0.0829	45.6	195	<0.1	6.76	116	715
	10/04/16	0.0803	47.8	179	0.256 J	6.64	108	648
	12/22/16	0.0776	42.6	290	0.159 J	6.87	116	791
	10/02/17	0.106	58.2	140	<0.100	6.76	95.3	433
	06/04/18	0.091	21.7	6.48	0.162 J	6.28	6.08	135
	09/06/18	0.0999	49.8	186	0.134 J	5.61	104	704
	11/06/18	--	--	--	--	--	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 J	6.68	17.3	212
	9/9/2020	0.123	48.5	156	0.152 J	6.72	99.6	468

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.



LEGEND

- DOWNGRADIENT CCR MONITORING WELL
- UPGRADIENT CCR MONITORING WELL

REFERENCE(S)

BASE MAP TAKEN FROM GOOGLE EARTH, IMAGERY DATED 12/9/18.

CLIENT
LUMINANT

PROJECT
OAK GROVE STEAM ELECTRIC STATION
ROBERTSON COUNTY, TEXAS

TITLE
DETAILED SITE PLAN - ASH LANDFILL

CONSULTANT
GOLDER

YYYY-MM-DD	2020-01-23
DESIGNED	AJD
PREPARED	AJD
REVIEWED	WFV
APPROVED	WFV

PROJECT NO.	REV.	FIGURE
19122262	0	1

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

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Path: \\texarkanadata\Projects - Round Rock_2019\19122262 - Luminant\F - Oak Grove\ | File Name: FIG 1 - Detaile Site Plan (Ash Landfill).dwg

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