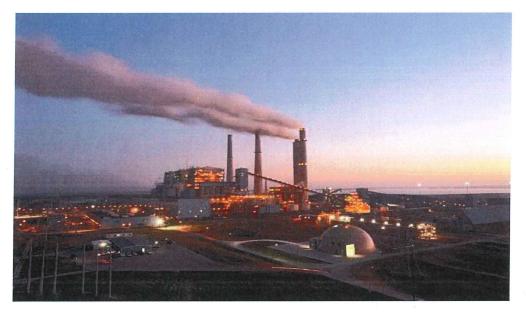


COAL COMBUSTION RESIDUAL LANDFILL

ANNUAL GROUNDWATER MONITORING REPORT

Calendar Year 2019

LOWER COLORADO RIVER AUTHORITY (LCRA) FAYETTE POWER PROJECT, LA GRANGE, TEXAS JANUARY 31, 2020



Prepared by:

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Lower Colorado River Authority Fayette Power Plant Project 6549 Power Plant Rd. La Grange, Texas 78945



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2019 Groundwater Monitoring Report Fayette Power Project La Grange, TX

1.0 BACKGROUND

The LCRA Fayette Power Project (FPP) is a coal-fired power plant located east of La Grange in Fayette County, Texas. Coal Combustion Residuals (CCRs) generated at the facility are disposed of in the Combustion Byproducts Landfill (CBL) located south of the power plant and north of the railroad that borders the FPP site (Figure 1). The existing CBL consists of Cell 1 and Sub-cell 2D. Cell 1 was constructed in 1988 and sub-cell 2 D in 2015, therefore both active cells are considered existing units under the U.S. Environmental Protection Agency's Coal Combustion Residuals (CCR) Rules as codified in Title 40 of the Code of Federal Regulations (CFR), Chapter 257, Subpart D.

2.0 PURPOSE

This report was prepared pursuant to 40 CFR § 257.90(e), which requires the owner or operator of an existing CCR landfill to prepare an annual groundwater monitoring report for the preceding calendar year.

3.0 GROUNDWATER MONITORING SYSTEM

The groundwater monitoring well network for 2019 consisted of six wells as described below and additionally in Table 1:

- Background CBL-340I
- Down-gradient CBL-301I, CBL-302I, CBL-306I, CBL-308I and CBL-341I

No groundwater monitoring wells were installed or decommissioned in 2019. The location of the monitoring wells are shown on Figure 1.

In accordance with 40 CFR § 257.93(c), groundwater elevations were measured in each monitor well prior to purging and sampling for each semi-annual sampling event. Consistent with prior CBL potentiometric surface elevation maps, the inferred groundwater flow direction is towards the south-southwest. Groundwater flow rates were estimated along two transects for each groundwater sampling event, one along the western area having an approximate rate of 23- 26

feet per year and one along the eastern area, having a flow rate an approximate rate of 50-72 feet per year. Detailed information is contained in the December 12, 2019 Technical Memorandum prepared by Wood Environmental and Infrastructure Solutions, Inc. (Wood), which is included in Appendix A.

During the 2019 first quarter sampling event, the pH field reading for CBL301I was recorded as 7.50 on January 17, 2019. This value was found to be a clerical error in transferring data from field notes to the field sheets and the value was changed to 7.16 on 4/19/19 as indicated on the field sheet in Attachment E. The final analytical report originally issued on February 1, 2019 was revised and reissued on April 22, 2019 with the noted change.

Screening level statistical analysis indicated the January 17, 2019 sample event was anomalous for pH in monitoring well CBL-301I. A review of the field notes verified the groundwater sample was collected the day after purging due to lack of sufficient groundwater recharge immediately following purging. The field parameter Specific Conductance was anomalously low. Analysis of the sample indicated uncharacteristically low calcium and chloride concentrations and low field conductivity measurements. In response to this information, CBL-301I was resampled on May 2, 2019. Field parameters and analytical results for this sample were consistent with historic analytical results.

During the 2019 third quarter sampling event, CBL-306I was resampled due to anomalous and uncharacteristic values of analytes, including fluoride. The resampling occurred within the third quarter.

4.0 STATUS OF THE GROUNDWATER MONITORING PROGRAM

During calendar year 2019, all groundwater sampling was conducted in accordance with 40 CFR § 257.93 - Groundwater sampling and analysis requirements and § 257.94. - Detection Monitoring. Table 2 summarizes the sampling events. As discussed in Section 5, the CBL will remain in detection monitoring for 2020.

Although not expressly required by 40 CFR 257.90(e) or 257.105(h), Table 3 contains a summary of the analytic data collected in 2019.

5.0 STATISTICAL EVALUATIONS AND ALTERNATE SOURCE DETERMINATION

5.1 Statistical Analysis of First Quarter 2019 Data

In April 2019 WOOD completed the statistical analysis of the first quarter detection monitoring Appendix III constituent data utilizing the prediction limit intrawell method. The results indicated that there was a single exceedance for pH in monitoring well CBL-301I. Analysis of the sample indicated uncharacteristically low calcium and chloride concentrations and low field conductivity measurements. Field notes indicated the groundwater sample was collected the day after purging due to lack of sufficient groundwater recharge immediately following purging. Therefore, LCRA pursued an Alternate Source Demonstration and CBL 301I was resampled on May 2, 2019. The field parameters and analytical results were consistent with historic analytical results. Using the May 2, 2019, results, there were no SSIs for any constituents in any well. Detailed information is contained the July 8, 2019 Technical Memorandum prepared by WOOD which is included in Appendix B and the Alternate Source Demonstration prepared and certified by WOOD on July 8, 2019 which is included in Appendix C.

5.2 Statistical Analysis Third Quarter 2019 Data

In November 2019 Wood completed the statistical analysis of the third quarter detection monitoring Appendix III constituent data utilizing the prediction limit intrawell method. The results indicated that there were no SSI for any constituents in any well. Well 306I was resampled on August, 23, 2019 due to anomalous and uncharacteristic values, but within the third quarter and before conducting the statistical analysis. Detailed information is contained the December 13, 2019 Technical Memorandum prepared by Wood which is included in Appendix D.

6.0 KEY ACTIONS

Key actions for 2019 are detailed in Section 5. Key actions for 2020 include continued semiannual detection monitoring with associated statistical analysis and responding in accordance with the CCR rules as new information is developed.

TABLE 1

MONITORING WELL DETAILS

Well ID	CBL-340i (Background Well)	CBL-301i	CBL-302i	CBL-306i	CBL-308i	CBL -341i
Installation Date	12/17/2015	5/23/2011	5/24/2011	6/3/2011	12/20/2011	11/14/2016
Hydrogeologic Unit Monitored	Intermediate Sand	Intermediate Sand	Intermediate Sand	Intermediate Sand	Intermediate Sand	Intermediate Sand
Casing Type	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC	2" PVC
Total Well Depth (ft bgs)	37	51	24	12.5	- 32	43
Screened Interval (ft bgs)	22-37	41-51	14-24	9-14	22-32	33-43
Ground Surface Elevation (ft MSL)	374.69	369.75	355.99	337.93	364.93	364.03
TOC Elevation (ft MSL)	376.98	372.11	358.99	339.96	368.67	366.65
Northing	9949069.45	9946563.44	9947806.017	9946445.582	9947619.46	9947139.86
Easting	3428311.38	3429862.181	3429260.844	3428730.533	3428574.38	3429525.31
Survey Datum	Horizontal Datum: NAD83/2011- EPOCH 2012 Vertical Datum: NAVD88- GEOIDIZA	Horizontal Datum: NAD83/NSRS 2007 Vertical Datum: NAVD88	Horizontal Datum: NAD83/2011- EPOCH 2012 Vertical Datum: NAVD88-GEOIDIZA			

TABLE 2

2019 CCR GROUNDWATER MONITORING EVENTS

	Date of sample	# samples collected	
Well #	collection	for analysis	Monitoring program
CBL 340I	1/22/2019	1	Detection monitoring
	7/29/2019	1	Detection monitoring
CBL 3011	1/17/2019	1	Detection monitoring
retest	5/2/2019	1	Alternate Source Demonstration
	7/31/2019	1	Detection monitoring
CBL 302I	1/22/2019	1	Detection monitoring
	7/31/2019	1	Detection monitoring
CBL 306I	1/16/2019	1	Detection monitoring
-	7/29/2019	1	Detection monitoring
retest	8/23/2019	1	Detection monitoring
CBL 308I	1/16/2019	1	Detection monitoring
	7/31/2019	1	Detection monitoring
CBL 341I	1/22/2019	1	Detection monitoring
	7/29/2019	1	Detection monitoring

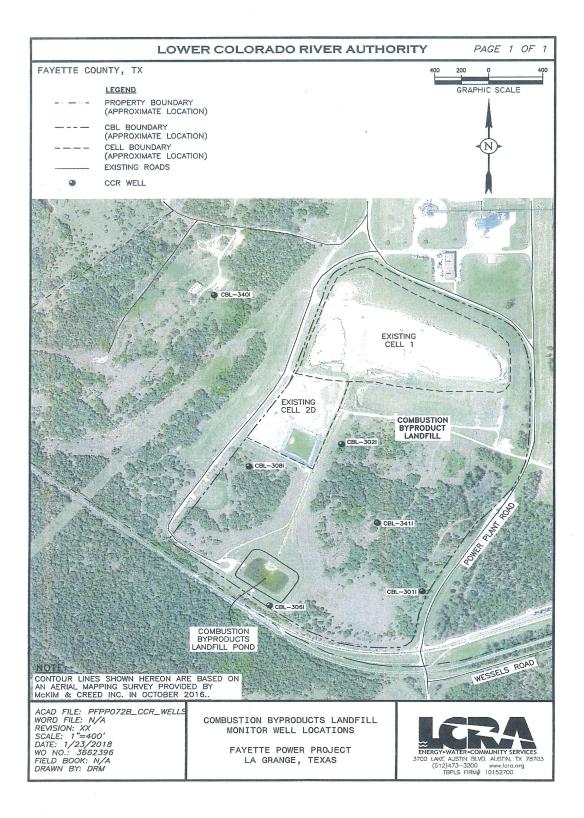
TABLE 3

2019 Groundwater Monitoring Results Summary

Sample ID/ Location	Date Sampled	Boron	Calcium	Chloride	Fluoride	рН	Sulfate	Total Dissolved Solids
CBL Background well		E.						
CBL-340I	1/22/2019	<0.0500	518	2250	0.83	6.59	639	4720
CBL-3401	7/29/2019	0.124	518	2280	0.88	6.45	684	5560
CBL Wells								
CBL-301	1/17/2019	<0.05	156	619	0.219	7.16	104	1460
CBL-301 retest	5/2/2019	<0.05	762	1910	0.112	6.14	389	5650
CBL-3011	7/31/2019	<.05	783	2240	0.051	6.19	332	6040
CBL-302I CBL-302I	1/22/2019 7/31/2019	<0.05 <0.05	855 914	1690 1540	0.0402	6.44 6.15	1250 1260	5060 4190
CBL-3061	1/16/2019	<0.0500	180	215	1.98	6.78	292	1220
CBL-3061	7/29/2019	0.0824	106	538	9.26	6.92	816	676
CBL-306I retest	8/23/2019	<0.0500	226	318	2.66	6.83	387	1710
CBL-308I	1/10/2010	10.05.00	700	2440	1.68	C 20	1520	4760
CBL-3081	1/16/2019 7/31/2019	<0.0500 <0.0500	760 840	2440 2290	1.68	6.39 6.25	1520 1420	5820
	773172013	<0.0500	840	2250	1.02	0.25	1420	5620
CBL-341I	1/22/2019	<0.05	782	1790	0.0546	6.38	358	3870
CBL-3411	7/29/2019	<0.05	714	1650	0.1	6.23	329	5370
<u>Notes:</u>								
All concentrations reported in mg/L (milligrams per liter).								

FIGURE 1

MONITOR WELL LOCATION MAP



APPENDIX A

CCR Groundwater Detection Monitoring Program Evaluation of First and Third Quarter 2019 Potentiometric Surface Data Collected from the CBL, Wood Environmental and Infrastructure Solutions, Inc, December 12, 2019

wood.

Technical Memorandum

То:	Nancy Overesch, PG	File No:	6706190019
From:	Charlie Macon, PG	cc:	File
Date:	December 12, 2019		

Subject: CCR GROUNDWATER DETECTION MONITORING PROGRAM EVALUATION OF FIRST AND THIRD QUARTER 2019 POTENTIOMETRIC SURFACE DATA COLLECTED FROM THE CBL Fayette Power Project – La Grange, Texas

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the evaluation of the Intermediate Sand groundwater bearing unit potentiometric surface data obtained during completion of the first quarter and third quarter 2019 groundwater monitoring events. The monitoring is being performed, as part of the Combustion Byproducts Landfill (CBL) Groundwater Monitoring Program (GMP) pursuant to the Coal Combustion Residuals (CCR) regulations as codified in 40 Code of Federal Regulations (CFR) 257.93.. The CBL is located at the Lower Colorado River Authority's (LCRA's) Fayette Power Project (FPP) facility near La Grange, Texas. This potentiometric surface evaluation, and subsequent determination of groundwater flow rate and direction, is conducted for each groundwater monitoring event pursuant to the GMP requirements of 40 CFR 257.93(c).

2.0 POTENTIOMETRIC SURFACE DATA COLLECTION AND MAPPING

All groundwater monitoring and sampling activities were performed by an LCRA technician. Prior to conducting well purging and collection of groundwater samples for chemical analysis, the technician used an electronic well probe to determine depth to the Intermediate Sand groundwater surface below the surveyed top of casing elevation. Table 1 presents the summary of groundwater measurements obtained from the CBL Groundwater Monitoring Well network in 2019.

Based on the measured groundwater elevations, potentiometric surface maps were prepared to document the January-First Quarter 2019 monitoring event (Figure 1), and the July-Third Quarter 2019 monitoring event (Figure 2). These maps show a relatively consistent groundwater potentiometric surface, and are similar to those presented for the February 2018 and July-August 2018 monitoring events.

3.0 GROUNDWATER FLOW DIRECTION AND FLOW RATE CALCULATION

Consistent with prior CBL GMP maps, a groundwater flow direction inferred by potentiometric surface elevation, is toward the south-southwest (Figures 1 and 2). The inferred groundwater gradient is slightly less to the west, consistent with past findings.

Groundwater flow rate was estimated along two transects for each event, one along the western area having a lesser gradient, and one along the eastern area. As documented in the CBL Hydrogeology Report (Amec, 2013), a hydraulic conductivity value (K) of 6.3×10^{-4} centimeters per second (cm/sec) has been estimated for the Intermediate Sand, based on rising-head slug test data obtained from monitoring well CBL-302I. In



CCR Groundwater Detection Monitoring Evaluation of First and Third Quarter 2018 Potentiometric Surface Data Collected from the CBL

calculating groundwater flow rate, this hydraulic conductivity value was utilized for the January 2019 and July 2019 events, consistent with past evaluations of the Intermediate Sand. In addition, also consistent with past evaluations, an assumed porosity value of 0.30 was utilized.

Groundwater gradients for the January 2019, and August 2019 events are estimated as follows:

<u>January 2019 Event</u> Eastern Transect: 0.0335 feet/foot (ft/ft) Western Transect: 0.0119 ft/ft

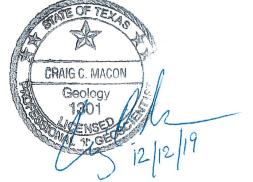
<u>July 2019 Event</u> Eastern Transect: 0.0230 ft/ft Western Transect: 0.0108 ft/ft

Given the constants $K = 6.3 \times 10^{-4}$ cm/sec (=648.9 ft/year), and Porosity = 0.30, the following groundwater flow velocities are calculated:

<u>January 2019 Event</u> Eastern Transect: 72 feet per year (ft/yr) Western Transect: 26 ft/yr

<u>July 2019 Event</u> Eastern Tract: 50 ft/yr Western Transect: 23 ft/yr





Amec Environment & Infrastructure, Inc. (Amec), 2013: *Hydrogeologic Evaluation of Combustion Byproducts Landfill (CBL) Area Report, Fayette Power Project*, December 2013.

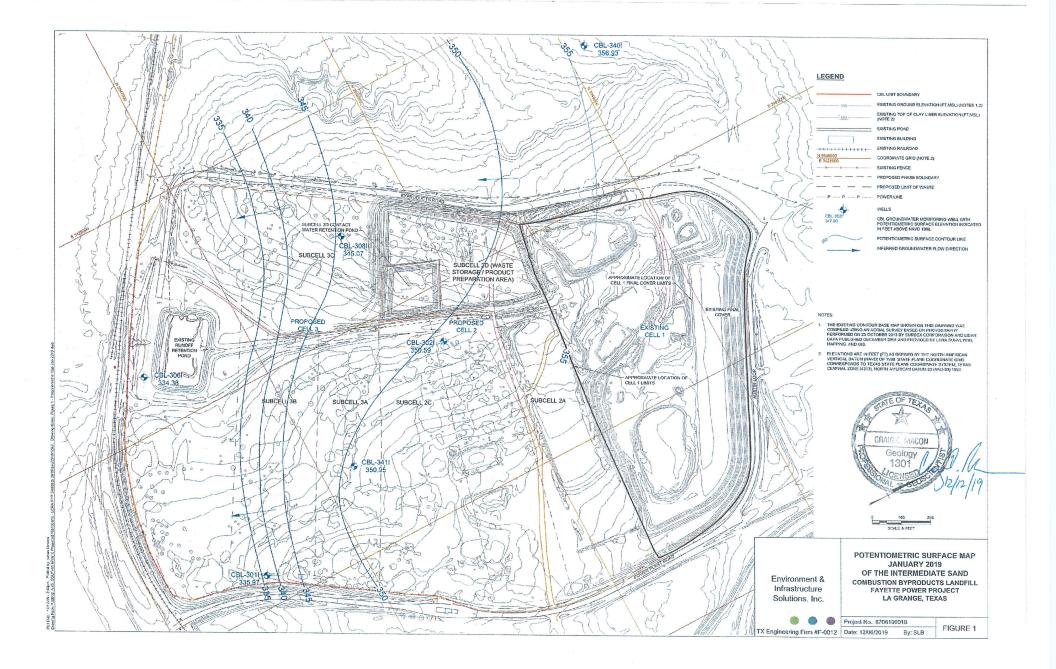
TABLE 1 **Combustion Byproducts Landfill** Groundwater Monitoring Well System 2019 Potentiometric Surface Data Fayette Power Project La Grange, Texas

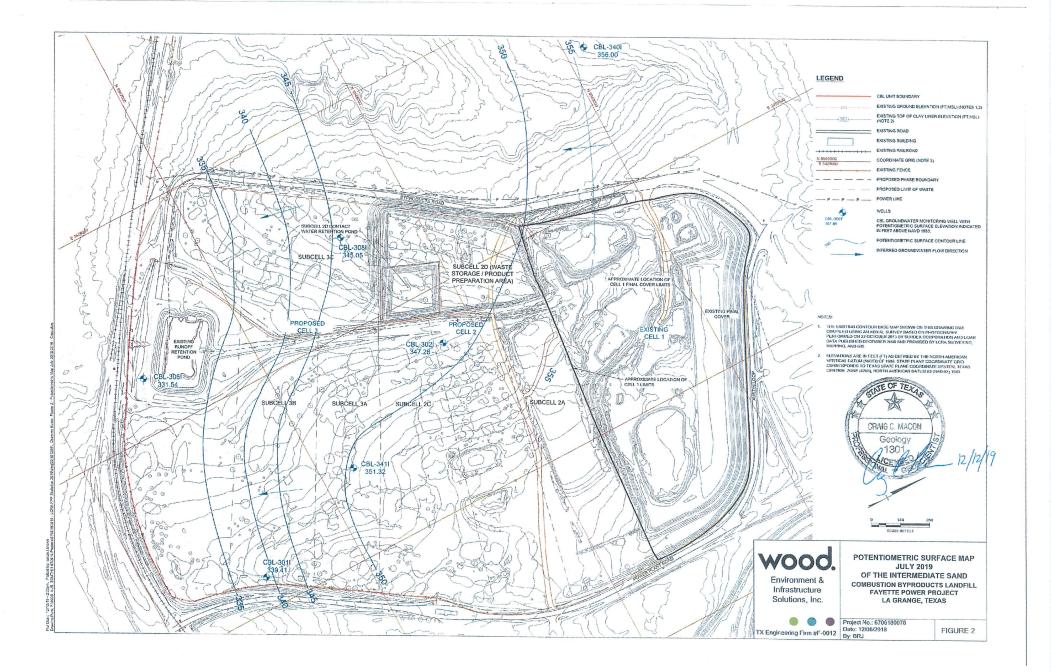
Well ID	Well ID CBL-340I		CBL	CBL-301I CBL-302I		CBL-306I		CBL-308I		CBL -3411		
Well Top of Casing Elevation	3/6.48 372.11 259.00 000		9.96	368.67		366.65						
Date	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)	DTW (ft btoc)	Elevation (ft NGVD)
1/16/2019	NM	NM	NM	NM	NM	NM	5.58	334.38	23.60	345.07	NM	NM
1/17/2019	NM	NM	36.14	335.97	NM	NM	NM	NM	NM	NM	NM	NM
1/22/2019	20.05	356.93	NM	NM	8.40	350.59	NM	NM	NM	NM	15.70	350.95
7/29/2019	20.98	356.00	NM	NM	NM	NM	8.42	331.54	NM	NM	15.33	351.32
7/30/2019	NM	NM	32.70	339.41	NM	NM	NM	NM	NM	NM	NM	NM
7/31/2019	NM	NM	NM	NM	11.71	347.28	NM	NM	23.62	345.05	NM	NM

Notes:

NM = Not Measured

ft btoc = feet below top of casing ft NGVD = feet above National Geodetic Vertical Datum





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APPENDIX B

CCR Groundwater Detection Monitoring Evaluation of First Quarter 2019 and Associated Resampling Data Collected form the CBL, Wood Environmental and Infrastructure Solutions, Inc, July 8, 2019

wood.

Technical Memorandum

То:	Charlie Macon, PG	File No:	6706190019
From:	Carla Landrum, PhD	cc:	File
Date:	July 8, 2019		

Subject: CCR GROUNDWATER DETECTION MONITORING EVALUATION OF FIRST QUARTER 2019 AND ASSOCIATED RESAMPLING DATA COLLECTED FROM THE CBL Fayette Power Project – La Grange, Texas

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the statistical evaluation of detection monitoring data collected in the first quarter of 2019 (1Q 2019), and the subsequent resampling of one well from the Combustion Byproducts Landfill (CBL) located at the Lower Colorado River Authority's (LCRA) Fayette Power Project (FPP) facility. The evaluation consists of comparing CBL compliance (i.e., downgradient) sample data to Appendix III baseline threshold values (BTVs) using the intrawell prediction limit statistical method declared in the *Statistical Analysis Updates of Detection Monitoring Appendix III Constituent Data* (1Q 2018 Tech Memo) (AMECFW, 2018a). Therefore, CBL 340I is sampled as required by 40 CFR 257.94 but is not included in the intrawell statistical comparison. The 1Q 2018 Tech Memo is in support of the initial detection monitoring assessment results documented for the CBL (AMECFW, 2018b). This Tech Memo was prepared pursuant to 40 CFR § 257.93.

2.0 SAMPLING AND SCREENING LEVEL DATA EVALUATION

The 1Q 2019 sampling event constitutes the eleventh sampling round for the detection monitoring program for the CBL. Detection monitoring program sampling for 1Q 2019 was initiated on January 16, 2019, with the purging of monitoring wells CBL-301I, CBL-306I, and CBL-308I. Samples were collected using low-flow sampling techniques from CBL-306I and CBL-308I. Because CBL-301I purged dry, sample collection from this well was conducted the following day (January 17, 2019) using a disposable bailer, after allowing the well to recharge. Monitoring wells CBL-302I, CBL-340I, and CBL-341I were purged and sampled on January 22, 2019. LCRA received the final analytical data reports for all wells on February 1, 2019. Table 1 presents the 1Q 2019 sample results for Appendix III constituents.

Screening level statistical analysis was completed on April 11, 2019 and indicated a single initial exceedance for pH in monitoring well sample CBL-301I. Based on this initial exceedance, the LCRA used professional judgement to move forward with an Alternate Source Demonstration, as summarized below. A formal ASD certification, including Engineer's seal, has been provided to LCRA separately.

3.0 ALTERNATE SOURCE DEMONSTRATION

Screening-level statistical analysis indicated the January 17, 2019 sample event was anomalous for pH in monitoring well CBL-301I. A review of the field notes verified the groundwater sample was collected the day after purging due to lack of sufficient groundwater recharge immediately following purging. The field

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parameter Specific Conductance was anomalously low. Analysis of the sample indicated uncharacteristically low calcium and chloride concentrations and low field conductivity measurements. These results suggested the sample was not representative of groundwater at this sample location (based on a comparison to past CBL 301I results).

In response to this information, a resampling event for this well was conducted on May 2, 2019. The field parameters and analytical results for the May 2, 2019 sampling event were consistent with historic analytical results and, therefore, confirm that the January 17th analyses was invalid and not representative of intrinsic groundwater conditions. These findings indicate the January 17th sample is invalid and should not be used in the statistical evaluation.

Table 1 presents the resampling data analysis for CBL-301I, and the intrawell BTVs for this 1Q 2019 and associated resampling statistical comparisons.

3.1 Updates to Temporal Trends and Baseline Threshold Values

The BTVs presented in Table 1 reflect those previously declared in the 2018 Tech Memo for the CBL with the following exceptions: calcium for monitoring well CBL-306I; chloride for monitoring well CBL-306I; and sulfate for monitoring wells CBL-302I and CBL-306I (Wood, 2018). In these specific cases, the prediction limits are time-dependent and are calculated around a persistent and statistically significant (p<0.05) temporal trend; thereby, requiring the inclusion of the 10th sampling event (3Q 2018) to generate a BTV representative of the temporally variable intrinsic groundwater conditions. This update is conditional upon the 3Q 2018 sampling event not exhibiting a statistically significant increase (SSI) over its respective BTV (Wood, 2018). For reference, the results of the 3Q 2018 detection monitoring statistical evaluation are documented in the *CCR Groundwater Detection Monitoring Evaluation of Third Quarter 2018 Data Collected from the CBL* Technical Memorandum (3Q 2018 Tech Memo) (Wood, 2018). A discussion of updates to temporal trend significance and BTVs (by constituent) follows.

Temporal Trends. The premise of intrawell comparisons is to evaluate if constituent concentrations at a geographic location downgradient of the CBL are, in part, changing over time respective to a baseline concentration calculated for that specific geographic location. On this basis, intrawell statistical comparisons should consider the presence of statistically significant (p<0.05) temporal trends to interpret if there is a release from the CBL, particularly if the temporal trend is: 1) increasing, 2) incongruent with the conceptual site model as it relates to alternative source demonstration(s) and/or 3) inconsistent with past temporal trend analyses. Table 1 color-codes constituents that exhibit statistically significant increasing (blue) or decreasing (yellow) temporal trends for the most recent sampling event. Many constituent/monitoring well pairs maintain their temporal trend declaration made in the 3Q 2018 Tech Memo (e.g., chloride in 302I). However, the most recent sampling event (1Q 2019) introduces the presence of statistically significant (p<0.05) temporal trends in the following monitoring wells (constituent/trend direction/trend significance): CBL-308I (TDS/decreasing/p=0.030) and CBL-341I (calcium/decreasing/p=0.02 and pH/increasing/p=0.02). Table 1 also identifies well/constituent pairs that no longer support the presence of a previously declared statistically significant temporal trend (p < 0.05) when incorporating the 3Q 2018 and/or 1Q-2Q 2019 sample data, including CBL-301I (calcium, chloride and sulfate) and CBL-306I (fluoride). Recommendations follow to help manage changes in temporal trend significance over time.

Calcium. Monitoring well CBL-306I exhibits a statistically significant (p<0.05) increasing temporal trend for calcium. The temporal trend significance and direction are consistent for the 1Q 2018, 3Q 2018 and 1Q 2019 sampling events. The approximate p-values for the Mann-Kendall trend test, range among

0.0047, 0.0024, 0.00060 and 0.0041 (all well below p < 0.05) for the initial 8 detection monitoring sampling events and subsequent inclusion of the 1Q 2018, 3Q 2018 and 1Q 2019 detection monitoring sampling events, respectively. The upper prediction limit in Table 1 for calcium in monitoring well CBL-306I reflects the temporal trend for the tenth sampling event. The eleventh sampling event is subsequently compared to this time-dependent upper prediction limit to complete this statistical evaluation. The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

Chloride. Monitoring well CBL-306I exhibits a statistically significant (p<0.05) increasing temporal trend for chloride. The temporal trend significance and direction are consistent for the 1Q 2018, 3Q 2018 and 1Q 2019 sampling events. The approximate p-values for the Mann-Kendall trend test range among 0.018, 0.0046, 0.010 and 0.031 (all below p<0.05) for the initial 8 detection monitoring sampling events and subsequent inclusion of the 1Q 2018, 3Q 2018 and 1Q 2019 detection monitoring sampling events, respectively. The upper prediction limit in Table 1 for chloride in monitoring well CBL-306I reflects the temporal trend for the tenth sampling event. The eleventh sampling event is subsequently compared to this time-dependent upper prediction limit to complete this statistical evaluation. The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

Sulfate. Monitoring wells CBL-302I and CBL-306I exhibit statistically significant increasing temporal trends for sulfate. The temporal trend significance and direction are consistent for the 1Q 2018, 3Q 2018 and 1Q 2019 sampling events. For monitoring well CBL-302I, the approximate p-values for the Mann-Kendall trend range among 0.023, 0.0059, 0.0015 and 0.0007 (all below p<0.05) for the initial eight detection monitoring sampling events and subsequent inclusion of the 1Q 2018, 3Q 2018 and 1Q 2019 detection monitoring sampling events, respectively. For monitoring well CBL-306I, the approximate p-values for the Mann-Kendall trend test, range among 0.018, 0.0082, 0.016 and 0.043 for the initial 8 detection monitoring sampling events and subsequent inclusion of the 1Q 2018, 3Q 2018 and 1Q 2019 detection monitoring sampling events, respectively. The upper prediction limit in Table 1 for chloride in monitoring wells CBL-302I and CBL-306I reflect the temporal trend for the tenth sampling event. The eleventh sampling event for each well is subsequently compared to its respective time-dependent upper prediction limit to complete this statistical evaluation. The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

3.2 Exceedance Assessment

The LCRA pursued an ASD based on the initial exceedance shown in Table 1 for pH in monitoring well CBL-301I that was sampled on January 17, 2019. As described above, the May 2, 2019 resampling event yielded results consistent with past findings regarding both field collection data and analytical data. Accordingly, it has been determined through the ASD process that the initial exceedance for pH was due to sampling influences and not actual water quality.

As indicated in Table 1, there is insufficient statistical evidence to declare an initial exceedance for boron, calcium, chloride, fluoride, sulfate, pH or total dissolved solids in 1Q 2019 because sample concentrations are less than their respective BTVs.

4.0 **RECOMMENDATIONS**

Wood maintains the recommendation put forth in the 1Q 2018 Tech Memo (AmecFW, 2018a) declaring the reiterative calculation of the prediction limit if a statistically significant temporal trend is present for a constituent. This recommendation ensures that the prediction limit calculation honors the temporal trend, or systematic change in constituent concentrations over time. This recommendation assumes the temporal trend remains statistically significant over time, the data meet statistical assumptions and the CBL is not impacting groundwater (AMECFW, 2018a).

For the majority of monitoring well/constituent pairs, the intrawell BTVs derive from stationary datasets (no temporal trend is present) and, therefore, remain constant for each subsequent statistical comparison test. In these cases, the BTV was derived using a relatively small sample dataset (n=8). Therefore, this small dataset likely underrepresents local and regional temporal variability in constituent concentrations beneath the CBL. Wood recommends updating the intrawell BTVs in Table 1 for the 1Q 2020. Updating BTVs to reflect larger sample sizes over time will improve the overall power of future statistical tests. This recommendation is conditional upon the absence of initial exceedances in constituent concentrations above their respective BTVs.

For a few monitoring well/constituent pairs the temporal trend is inconsistent over time. In general, this is expected since the temporal trends are characterized by relatively few samples and a few of the temporal trends border on the threshold of being statistically significant. Trend definition and significance will improve as sample datasets build over time. Wood recommends testing the significance of temporal trends after each sampling event (e.g. semiannually).

5.0 REFERENCES

Amec Foster Wheeler (AMECFW), 2018a. Technical Memorandum – Client Draft. Statistical Analysis Updates of Detection Monitoring Appendix III Constituent Data. Fayette Power Project – La Grange, Texas. Technical Memorandum dated April 6, 2018.

Amec Foster Wheeler (AMECFW), 2018b. Technical Memorandum – Client Draft. Statistical Analysis of Initial Detection Monitoring Appendix III Constituent Data. Fayette Power Project – La Grange, Texas. Technical Memorandum dated January 14, 2018.

Wood, 2018. CCR Groundwater Detection Monitoring Evaluation of Third Quarter 2018 Data Collected from the CBL. Fayette Power Project – La Grange, Texas. Technical Memorandum dated October 17, 2018.

U.S. Environmental Protection Agency (U.S. EPA), 2013. ProUCL (Version 5.0.00) User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations. EPA/600/R-07/041. Washington D.C. September.

U.S. Environmental Protection Agency (U.S. EPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.

Table 1
Statistical Results Summary - LCRA Combustion Byproducts Landfill
Appendix III Statistical Comparison

	3011						
Appendix III Constituent	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)*	Sulfate (mg/L)	TDS (mg/L)
Intrawell Statistical Test	NP-UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-LPL	P-UPLT	P-UPL
BTV	0.07	1135	2676	0.3	6.33/5.95	410	7905
First Quarter 2019 Compliance Sample Value	<0.0500	156 ^b	619 ^c	0.219	<u>7.16</u>	104 ^b	1460
ASD 2019 Resample Compliance Sample Value**	<0.0500	762 ^b	1910 ^b	0.112	6.14	389 ^b	5650
				302			
Appendix III Constituent	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)*	Sulfate (mg/L)	TDS (mg/L)
Intrawell Statistical Test	NP-UPL	P-UPL	P-UPL	P-UPL	P-UPL/P-LPL	P-UPLT	P-UPL
BTV	0.3	1154	2328	0.3	8.21/3.57	1565	7940
First Quarter 2019 Compliance Sample Value	<0.0500	855	1690 ^b	0.0402	6.44	1250 ^d	5060
				306			
Appendix III Constituent	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)*	Sulfate (mg/L)	TDS (mg/L)
Intrawell Statistical Test	P-UPL	P-UPLT	P-UPLT	P-UPL	P-UPL/P-LPL	P-UPLT	P-UPL
BTV	0.2	458	780	4	7.29/4.41	1077	2064
First Quarter 2019 Compliance Sample Value	<0.0500	180 ^d	215 ^d	1.98 ^ª	6.78	292 ^d	1220 ^b
				308			
Appendix III Constituent	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)*	Sulfate (mg/L)	TDS (mg/L)
Intrawell Statistical Test	P-UCL	P-UPL	P-UPL	P-UPL	P-UPL/P-LPL	P-UPL	P-UPL
BTV	0.7	995	3079	3	7.15/5.26	1702	12186
First Quarter 2019 Compliance Sample Value	<0.0500	760	2440	1.68	6.38	1528	3870 ^c
	3411						
Appendix III Constituent	Boron (mg/L)	Calcium (mg/L)	Chloride (mg/L)	Fluoride (mg/L)	pH (S.U.)*	Sulfate (mg/L)	TDS (mg/L)
Intrawell Statistical Test	P-UPL	P-UPL	P-UPL	NP-UPL	P-UPL/P-LPL	P-UPL	P-UPL
BTV	0.09	981	2661	0.53	6.69/4.93	466	6295
First Quarter 2019 Compliance Sample Value	<0.0500	782 ^c	1790	0.055 ^e	6.38 ^c	358	3870

Table 1

Statistical Results Summary - LCRA Combustion Byproducts Landfill Appendix III Statistical Comparison

Footnotes:

^aThe temporal trend becomes statistically insignificant.

^bThe temporal trend maintains its statistical significance or insignificance status observed during the 3Q 2018 sampling event, however, the trend status is known to be inconsistent throughout the CCR Detection Monitoring program.

^cThe temporal trend becomes statistically significant.

^dThe temporal trend remains statistically significant. The prediction limit calculation honors the trend by incorporating the third quarter 2018 sample event.

^eThe temporal trend remains statistically significant and the prediction limit honors the non-parametric calculation.

*pH represents an upper and lower limit (upper limit method/lower limit method)

**ASD resampling event for monitoring well CBL-301I occurred on May 2, 2019. This sample holds precedence for detection monitoring.

.

Legend

There is insufficient evidence to declare an SSI Statistically significant increasing temporal trend (p<0.05)

Statistically significant decreasing temporal trend (p<0.05)

There is sufficient statistical evidence to declare an SSI

NP-LPL: Non-Parametric Lower Prediction Limit

NP-UPL: Non-Parametric Upper Prediction Limit

P-UPL: Parametric Upper Prediction Limit

P-LPL: Parametric Lower Prediction Limit

P-UPLT: Parametric Upper Prediction Limit with a Trend

APPENDIX C

Groundwater Monitoring System Certification of Alternate Source Demonstration, Wood Environmental and Infrastructure Solutions, Inc,

July 8, 2019

GROUNDWATER MONITORING SYSTEM CERTIFICATION OF ALTERNATE SOURCE DEMONSTRATION LOWER COLORADO RIVER AUTHORITY COAL COMBUSTION RESIDUALS UNIT: COMBUSTION BYPRODUCTS LANDFILL FAYETTE POWER PROJECT

La Grange, Texas

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS, INC. (Consultant) was retained by the Lower Colorado River Authority (LCRA) to perform an alternate source demonstration (ASD) in response to the April 11, 2019 screening level analysis identification of a statistically significant increase (SSI) for pH, detected in the groundwater monitoring system compliance well CBL-301I, for the Combustion Byproducts Landfill (CBL). The CBL is a coal combustion residuals (CCR) unit, at the Fayette Power Project in La Grange, Texas. The ASD was performed in accordance with 40 C.F.R. § 257.94(e)(2).

Additional discussion regarding the findings of the ASD, and the Professional Engineer's (P.E.'s) certification verifying the accuracy of the information used in making the ASD, are provided herein.

1.0 ALTERNATE SOURCE DEMONSTRATION

Semiannual compliance monitoring and analysis for the CBL groundwater monitoring program was conducted in January 2019, referenced as the 1Q 2019 event. The initial statistical screening of 1Q 2019 data identified a SSI for pH in monitoring well CBL-3011. As such, LCRA initiated an ASD.

The ASD task began with evaluation of the field conditions observed during groundwater sampling conducted on January 17, 2019 for CBL-3011. CBL-3011 had been purged for sampling on the prior day, however, the well purged dry, and a sample could not be collected. On January 17, 2019, CBL-3011 was accessed again for collection of a groundwater sample using a bailer, as the well appeared to have recharged sufficiently for sampling. However, it is evident that the field data showed anomalously low specific conductivity, and relatively elevated pH as compared to historic results.

Based on the anomalous field data, and analytical results, LCRA conducted a resampling of CBL-3011 on May 2, 2019 for full Appendix III analyses. Field conditions (pH, specific conductivity, recharge rates) and analytical results were found to be generally consistent with historical conditions. The sample was collected using low-flow sampling technique the same day of purging.

The resampling data underwent statistical evaluation, and it was confirmed that an SSI is not present. Based on the above findings, the January 17, 2019 sample for CBL-301I is considered invalid. The May 2, 2019 sampling event data for CBL-301I is accepted, and will be utilized in future statistical analyses and trend evaluations.

2.0 LIMITATIONS

The Consultant's signature on this document represents that, to the best of the Consultant's knowledge, information, and professional judgment, the aforementioned information is accurate as of the signature date. The Consultant's opinions and decisions are made on the basis of the Consultant's experience, qualifications, and professional judgment, and are not to be construed as warranties or guaranties. In addition, opinions relating to environmental, geologic, and geotechnical conditions (or other estimates) are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

3.0 CERTIFICATION

I, Seth Green, being a Registered P.E. in the State of Texas, do hereby certify to the best of my knowledge, information, and belief, that the information used in the ASD is accurate, and that the SSI identified in the April 11, 2019 screening level analysis was not a result of a release from the monitored unit, but instead was a result of analysis of a January 17, 2019 sample deemed not representative of true groundwater conditions at CBL-301I. As such, per 40 C.F.R. § 257.94(e)(2), the Detection Monitoring Program shall continue, and shall continue to utilize the existing prediction limit intrawell analysis for identification of an SSI.

of an SSI.	THE OF TELLS	
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	109563	
	A STONAD C'	
	thet of	
	7/2/15	
SIGNATURE	MUL A DATE 7/8/19	

I, **Craig C. Macon**, being a Professional Geoscientist in the State of Texas, do hereby certify to the best of my knowledge, information, and belief, that information used in the ASD is accurate, and that the SSI identified in the April 11, 2019 screening level analysis was not a result of a release from the monitored unit, but instead was result of analysis of a January 17, 2019 sample deemed not representative of true groundwater conditions at CBL-3011. As such, per 40 C.F.R. § 257.94(e)(2), the Detection Monitoring Program shall continue, utilizing the prediction limit intrawell analysis for identification of an SSI.

CRAIG C. MACON Geology 30 DATE

SIGNATURE

APPENDIX D

CCR Groundwater Detection Monitoring Evaluation of Third Quarter 2019 Data Collected form the CBL, Wood Environmental and Infrastructure Solutions, Inc,

December 13, 2019

wood.

Technical Memorandum

То:	Charlie Macon, PG	File No:	6706180078
From:	Tim Glover, Senior Geochemist/Statistician	cc:	File
Date:	December 13, 2019		

Subject: CCR GROUNDWATER DETECTION MONITORING EVALUATION OF THIRD QUARTER 2019 DATA COLLECTED FROM THE CBL Fayette Power Project – La Grange, Texas

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents an evaluation of detection monitoring data collected in the third quarter of 2019 (3Q 2019) and subsequent resampling of one well from the Combustion Byproducts Landfill (CBL) located at the Lower Colorado River Authority's (LCRA) Fayette Power Project (FPP) facility. The evaluation consists of comparing CBL compliance (i.e., downgradient) sample data to Appendix III baseline threshold values (BTVs) using the intrawell prediction limit statistical method declared in the *Statistical Analysis Updates of Detection Monitoring Appendix III Constituent Data* (2018 Tech Memo) (AMECFW, 2018b). Therefore, CBL 340I is sampled as required by 40 CFR 257.94 but is not included in the intrawell statistical comparison. The 3Q 2019 Tech Memo is in support of the initial detection monitoring assessment results documented for the CBL (AMECFW, 2018b). This Tech Memo was prepared pursuant to 40 CFR § 257.93. Statistical comparisons and check for statistically significant increases were completed within 90 days of receipt of laboratory data.

2.0 EVALUATION

The 3Q 2019 sampling event constitutes the 12th sampling round for the detection monitoring program for the CBL. Wells were initially sampled July 29-31, 2019. Well CBL-306I was resampled on August 23, 2019 due to anomalous and uncharacteristic values of analytes, including fluoride. LCRA received the final analytical data reports dated August 13, 2019, and the CBL-306I resampling results on September 19, 2019. Table 1 presents the 3Q 2019 sample results for Appendix III constituents. Screening level statistical analyses were completed on November 13, 2019.

Table 1 presents the sample concentrations of Appendix III constituents collected from CBL compliance monitoring wells CBL-301I, CBL-302I, CBL-306I and CBL-308I on July 29-31, 2019, and monitoring well CBL-306I on August 23, 2019. Applicable BTVs are presented in Table 1 for this third quarter 2019 statistical comparison.

2.1 Updates to Temporal Trends and Background Threshold Values

The BTVs presented in Table 1 reflect those previously declared in the 2018 Tech Memo for the CBL with the following exceptions: calcium for monitoring well CBL-306I; chloride for monitoring well CBL-306I; and sulfate for monitoring wells CBL-302I and CBL-306I. In these specific cases, the prediction limits are time-dependent and are calculated around a persistent and statistically significant (p<0.05) temporal trend;

. . .

thereby, requiring the inclusion of the **10th** sampling event **(3Q 2018)** to generate a BTV representative of the temporally variable intrinsic groundwater conditions. This update is conditional upon the 3Q 2018 sampling event not exhibiting a statistically significant increase (SSI) over its respective BTV (Wood, 2018). For reference, the results of the 3Q 2018 detection monitoring statistical evaluation are documented in the *CCR Groundwater Detection Monitoring Evaluation of Third Quarter 2018 Data Collected from the CBL* Technical Memorandum (3Q 2018 Tech Memo) (Wood, 2018). A discussion of updates to temporal trend significance and BTVs (by constituent) follows.

To provide context regarding the consistency of temporal trends over time, the initial detection monitoring trends (AMECFW, 2018a) and 1Q 2018 temporal trends are referenced below.

Temporal Trends. The premise of intrawell comparisons is to evaluate if constituent concentrations at a geographic location downgradient of the CBL are, in part, changing over time respective to a baseline concentration calculated for that specific geographic location. On this basis, intrawell statistical comparisons should consider the presence of statistically significant (p<0.05) temporal trends to interpret if there is a release from the CBL, particularly if the temporal trend is: 1) increasing, 2) incongruent with the conceptual site model as it relates to alternative source demonstration(s) and/or 3) inconsistent with past temporal trend analyses. Using nonparametric Mann-Kendal trend testing, (3Q 2019) found the presence of statistically significant (p<0.05) temporal trends in the following monitoring wells (constituent/trend direction):

- CBL-302I
 - o Chloride/decreasing
 - o Sulfate/increasing
- CBL-306I
 - o Calcium/increasing
 - o Chloride/increasing
 - $\circ \quad \text{Sulfate/increasing} \\$
 - Fluoride/increasing
 - o TDS/increasing.
- CBL-308I
 - o TDS/decreasing
- CBL-341I
 - o Calcium/decreasing
 - \circ Fluoride/decreasing
 - o **pH/increasing**

Recommendations follow to help manage changes in temporal trend significance over time. Reference to the conceptual site model and professional judgement/interpretation are necessary to confirm if the temporal trends in the downgradient monitoring wells indicate there is a release from the CBL.

Calcium. Monitoring well CBL-306I continues to exhibit a statistically significant (p<0.05) increasing temporal trend for calcium. The temporal trend significance and direction maintain consistency for the initial 8 detection monitoring sampling events and subsequent inclusion of events. The upper prediction limit in Table 1 for calcium in monitoring well CBL-306I reflects the trend for the 10th sampling event (Table

1). The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

Chloride. Monitoring well CBL-306I continues to exhibit a statistically significant (p<0.05) increasing temporal trend for chloride. The temporal trend significance and direction maintain consistency for the initial 8 detection monitoring sampling events and subsequent inclusion of events. The upper prediction limit in Table 1 for chloride in monitoring well CBL-306I reflects the temporal trend for the 10th sampling event (Table 1). The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

Sulfate. Monitoring wells CBL-302I and CBL-306I continue to exhibit statistically significant increasing temporal trends for sulfate. The temporal trend significance and direction maintain consistency for the initial 8 detection monitoring sampling events and subsequent inclusion of events. The upper prediction limit in Table 1 for sulfate in monitoring wells CBL-302I and CBL-306I reflect the temporal trend for the 10th sampling event. The upper prediction limit calculation honors a 1 of 2 resampling strategy and Equation 10-13 in the ProUCL Technical Guide (U.S. EPA, 2013).

Fluoride and TDS. Monitoring well CBL-306I exhibits a statistically significant (p<0.05) increasing temporal trend for fluoride and TDS. Additional sampling is needed to confirm these temporal trends.

2.2 Exceedance Assessment

As indicated in Table 1, there is insufficient evidence at this time to declare an initial exceedance for calcium, chloride, fluoride, pH, or total dissolved solids because the 3Q 2019 sample concentrations are less than their respective BTVs in either the initial sampling or a subsequent resampling.

There is a single potential initial exceedance for fluoride in monitoring well CBL-306I. Because of the potential exceedance and additional uncharacteristic values of the other analytes in that sample, a resampling event was completed approximately a month later (August 23, 2019). Review of these results suggest the initial sample result is anomalous across many analytes, and should not be included in future statistical analysis. On this basis, and the resampled fluoride concentration being below the BTV, there is insufficient evidence to declare an initial exceedance for fluoride at monitoring well CBL-306I for the 3Q 2019 sampling event.

3.0 **RECOMMENDATIONS**

There is no evidence of initial exceedances in any well or analyte at this time.

For the majority of monitoring well/constituent pairs, the initial detection monitoring sample events (AMECFW, 2018b) represent a non-trending (i.e. stationary) BTV and these BTVs remain constant for each statistical comparison test. A sample size equal to eight is relatively small and likely underrepresents long-term temporal variability in constituent concentrations beneath the CBL. Wood recommends updating the intrawell BTVs in Table 1 for the 3Q 2020 sampling event, which will incorporate sampling events between 1Q 2018 and 1Q 2020 into the intrawell BTV calculations. This recommendation is conditional upon the absence of initial exceedances in constituent concentrations above their respective BTVs. Updating BTVs to reflect larger sample sizes over time will improve the overall power of future statistical tests.

For a few monitoring well/constituent pairs the temporal trend is inconsistent over time. In general, this is expected since the trends are characterized by relatively few samples. Trend definition and significance will improve as sample datasets build over time. Wood recommends testing the significance of temporal trends after each sampling event (e.g. semiannually).

Wood maintains the recommendation put forth in the 2018 Tech Memo declaring the reiterative calculation of the prediction limit around a temporal trend for each statistical evaluation, assuming the temporal trend remains statistically significant over time and the dataset meet the method assumptions (AMECFW, 2018b).

4.0 **REFERENCES**

Amec Foster Wheeler (AMECFW), 2018a. Technical Memorandum – Client Draft. Statistical Analysis of Initial Detection Monitoring Appendix III Constituent Data. Fayette Power Project – La Grange, Texas. Technical Memorandum dated January 14, 2018.

Amec Foster Wheeler (AMECFW), 2018b. Technical Memorandum – Client Draft. Statistical Analysis Updates of Detection Monitoring Appendix III Constituent Data. Fayette Power Project – La Grange, Texas. Technical Memorandum dated April 6, 2018.

U.S. Environmental Protection Agency (U.S. EPA), 2013. ProUCL (Version 5.0.00) User Guide, Statistical Software for Environmental Applications for Data Sets with and without Nondetect Observations. EPA/600/R-07/041. Washington D.C. September.

U.S. Environmental Protection Agency (U.S. EPA), 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities Unified Guidance. EPA 530/R-09-007. Environmental Protection Agency Office of Resource Conservation and Recovery.

3011									
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS		
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)		
Intrawell Statistical Test	NP- UPL	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP- LPL	P- UPLT	P-UPL		
BTV	0.07	1135	2676	0.3	6.33/5.95	410	7905		
Compliance Sample	<0.05	783	2240	0.051	6.19	332	6040		

Table 1 Statistical Results Summary - LCRA Combustion Byproducts Landfill 3Q2019 Appendix III Statistical Comparison

3021									
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS		
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)		
Intrawell	NP-	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-	P-	P-UPL		
Statistical Test	UPL				LPL	UPLT			
BTV	0.3	1154	2328	0.3	8.21/3.57	1565	7940		
Compliance Sample	0.05	914	1540	0.0605	6.15	1260	4190		

3061									
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS		
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)		
Intrawell	NP-	DUDIT	P-UPL	NP-UPL	NP-UPL/NP-	P-	P-UPL		
Statistical Test	UPL	P-UPLT	P-OPL	NP-OPL	LPL	UPLT			
BTV	0.2	458	780	4	7.29/4.41	1077	2064		
Compliance Sample	0.0824	106	538	9.26	6.92	816	676		
Resample	<0.05	226	318	2.66	6.83	387	1710		

3081									
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS		
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)		
Intrawell	NP-		P-UPL	NP-UPL	NP-UPL/NP-	P-	P-UPL		
Statistical Test	UPL	P-UPLT	P-UPL	NP-OPL	LPL	UPLT	P-OPL		
BTV	0.7	995	3079	3	7.15/5.26	1702	12186		
Compliance Sample	<0.05	840	2290	1.62	6.25	1420	5820		

CCR Groundwater Detection Monitoring Evaluation of Third Quarter 2018 Data Collected from the CBL

3411									
	Boron	Calcium	Chloride	Fluoride	pH*	Sulfate	TDS		
	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(S.U)	(mg/L)	(mg/L)		
Intrawell	NP-	P-UPLT	P-UPL	NP-UPL	NP-UPL/NP-	P-	P-UPL		
Statistical Test	UPL				LPL	UPLT			
BTV	0.09	981	2661	0.53	6.69/4.93	466	6295		
Compliance Sample	<0.05	714	1650	0.1	6.23	329	5370		

*pH represents an upper and lower limit (upper limit method/lower limit method) Green highlights - sample below or within limits Yellow highlights - sample potentially exceeds limits

NP-LPL: Non-Parametric Lower Prediction Limit

NP-UPL: Non-Parametric Upper Prediction Limit

P-UPL: Parametric Upper Prediction Limit

P-LPL: Parametric Lower Prediction Limit

P-UPLT: Parametric Upper Prediction Limit with a Trend

APPENDIX E

Analytical Data for Calendar Year 2019



LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744

> Phone: (512)730-6022 Fax: (512)730-6021

February 1, 2019

BECKIE LOEVE FAYETTE POWER PLANT 6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945

RE: Final Analytical Report

ELS Workorder Q1902854

Attn: BECKIE LOEVE

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 356-6022. We look forward to assisting you again.

Authorized for release by:

Jam Kland

Jason Woods Project Manager jason.woods@lcra.org

Enclosures



Report ID: 364857 - 6920128

Page 1 of 12

Nancy Overesch

From: Sent: To: Cc: Subject: Attachments: Jason Woods Monday, April 22, 2019 8:16 AM Nancy Overesch; Beckie Loeve Ricky Nguyen; Madelyn Flannagan FPP - Groundwater - CCR Wells - Revised Analytical Report and EDD Q1902854_FPP_CCR_Groundwater_Revised EDD.xlsx; Q1902854_FPP_CCR_Groundwater_Revised Report.pdf

Nancy,

I have attached the revised report generated on 4/22/2019 to reflect the correction of an incorrect field pH result on sample Q1902854001 for the report originally generated on 2/01/2019. There was a data entry error documenting the pH result on the field information form.

Please let me know if you have any questions.

Thank You, Jason Woods Senior Environmental Scientist LCRA-Environmental Laboratory Services (EL-101) 3505 Montopolis Dr. Austin TX 78744 512-730-5339 Jason.Woods@lcra.org http://els.lcra.org

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LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744

> Phone: (512)730-6022 Fax: (512)730-6021

April 22, 2019

BECKIE LOEVE FAYETTE POWER PLANT 6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945

RE: Final Analytical Report

ELS Workorder Q1902854

Attn: BECKIE LOEVE

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 356-6022. We look forward to assisting you again.

Authorized for release by:

Jam Klow

Jason Woods Project Manager jason.woods@lcra.org

TNI FROMATORY

Enclosures

Report ID: 364857 - 6920128

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LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744

> Phone: (512)730-6022 Fax: (512)730-6021

SAMPLE SUMMARY

Workorder: Q1902854

Lab ID	Sample ID	Matrix	Date Collected	Date Received
Q1902854001	CBL - 3011	Aqueous	1/17/2019 14:00	1/18/2019 11:40
Q1902854002	CBL - 3061	Aqueous	1/16/2019 13:47	1/18/2019 11:40
Q1902854003	CBL - 3081	Aqueous	1/16/2019 14:50	1/18/2019 11:40

Report	t Definitions
LOD	Limit of Detection
LOQ	Limit of Quantitation
ML	Maximum Limit - Client Specified
DF	Dilution Factor
Qual	Qualifiers
ACCOUNT AND ADDRESS OF	

Report ID: 364857 - 6920128

Page 2 of 13



Fax: (512)730-6021

PROJECT SUMMARY

Workorder: Q1902854

Workorder Comments

Revised report generated on 4/22/2019 to reflect the correction of an incorrect field pH result on sample Q1902854001 for the report originally generated on 2/01/2019. There was a data entry error documenting the pH result on the field information form.

Report ID: 364857 - 6920128

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Lab ID: Q1902854	001		Dat	te Receive	d: 1/18/2019 11:40	Ma	atrix: Aque	eous	
Sample ID: CBL - 301	I		Dat	te Collecte	d: 1/17/2019 14:00	Sa	mple Type: SAM	PLE	
Project ID: FPP GWM	IP CCR								
Parameters	Results Units	LOQ	LOD	ML DF	Prepared	By	Analyzed	Ву	Qual
INORGANICS									
Analysis Desc: E300.0, A	nions Prej	paration Metho	od: E300.0,	Anions					
	Ana	lytical Method	: E300.0, A	nions					
Chloride	619 mg/L	10.0	4.00	10	01/23/19 15:12	ML	01/23/19 15:12	ML	
Fluoride	0.219 mg/L	0.0100	0.00400	1	01/22/19 23:52	FO	01/22/19 23:52	FO	
Sulfate	104 mg/L	10.0	4.00	10	01/23/19 15:12	ML	01/23/19 15:12	ML	
TOTAL DISSOLVED SOL	IDS								
Analysis Desc: SM2540C	, TDS Prep	paration Metho	d: SM2540	C, TDS					
	Ana	lytical Method:	SM2540C	, TDS					
Total Dissolved Solids(TD	S) 1460 mg/L	125	125	50	01/23/19 12:34	ADO	6 01/23/19 12:34	ADG	
INORGANICS									
Analysis Desc: SW6010B	ICP-AES Prep	aration Metho	d: SW3010	0A, Metals	Prep				
	Anal	ytical Method:	SW6010B	ICP-AES					
Boron Total	<0.0500 mg/L	0.0500	0.0200	1	01/25/19 10:34	ME	01/28/19 20:58	FM	
Calcium Total	156 mg/L	0.200	0.0700	1	01/25/19 10:34	ME	01/28/19 20:58	FM	
Field Parameters									
Analysis Desc: Field pH S	M4500H+B Prep	aration Metho	d: Field pH	SM4500H	+B TCEQ VOL 1				
TCEQ VOL 1	Anal	ytical Method:	Field pH S	M4500H+E	3 TCEQ VOL 1				
рН	7.16 рН			1	01/17/19 14:00	ERS	01/17/19 14:00	ERS	Ν

Report ID: 364857 - 6920128

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Workorder: Q190	2854									*****
Sample ID: CB	902854002 L - 306I P GWMP CCR					: 1/18/2019 11:40 : 1/16/2019 13:47		ttrix: Aque mple Type: SAM		
Parameters		Results Units	LOQ	LOD	ML DF	Prepared	Ву	Analyzed	Ву	Qual
INORGANICS										
Analysis Desc: E3	00.0, Anions	Prep	paration Metho	d: E300.0,	Anions					
		Ana	lytical Method:	E300.0, A	nions					
Chloride		215 mg/L	10.0	4.00	10	01/23/19 00:10	FO	01/23/19 00:10	FO	
Fluoride		1.98 mg/L	0.100	0.0400	10	01/23/19 00:10	FO	01/23/19 00:10	FO	
Sulfate		292 mg/L	10.0	4.00	10	01/23/19 00:10	FO	01/23/19 00:10	FO	
TOTAL DISSOLVE	ED SOLIDS									
Analysis Desc: SN	12540C, TDS	Prep	paration Metho	d: SM2540	C, TDS					
		Anal	ytical Method:	SM2540C	, TDS					
Total Dissolved So	lids(TDS)	1220 mg/L	25.0	25.0	10	01/22/19 14:30	ADG	6 01/22/19 14:30	ADG	
INORGANICS										
Analysis Desc: SV	6010B ICP-AES	Prep	aration Metho	d: SW3010	A, Metals F	Prep				
		Anal	ytical Method:	SW6010B	ICP-AES					
Boron Total		<0.0500 mg/L	0.0500	0.0200	1	01/25/19 10:34	ME	01/28/19 21:04	FM	
Calcium Total		180 mg/L	0.200	0.0700	1	01/25/19 10:34	ME	01/28/19 21:04	FM	
Field Parameters										
Analysis Desc: Fiel TCEQ VOL 1	ld pH SM4500H+E					-B TCEQ VOL 1				
			ytical Method:	Field pH S	M4500H+B	TCEQ VOL 1				
pH		6.78 pH			1	01/16/19 13:47	ERS	01/16/19 13:47	ERS	Ν

Report ID: 364857 - 6920128

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Workorder: Q	1902854									
Lab ID: Sample ID: Project ID:	Q1902854003 CBL - 308I FPP GWMP CCR					: 1/18/2019 11:40 : 1/16/2019 14:50		atrix: Aque Imple Type: SAM		
Parameters		Results Units	LOQ	LOD	ML DF	Prepared	By	Analyzed	Ву	Qual
INORGANICS	5									
Analysis Desc	:: E300.0, Anions	Prep	aration Metho	d: E300.0,	Anions					
		Analy	/tical Method:	E300.0, A	nions					
Chloride		2440 mg/L	50.0	20.0	50	01/23/19 00:28	FO	01/23/19 00:28	FO	
Fluoride		1.68 mg/L	0.500	0.200	50	01/23/19 00:28	FO	01/23/19 00:28	FO	
Sulfate		1520 mg/L	50.0	20.0	50	01/23/19 00:28	FO	01/23/19 00:28	FO	
TOTAL DISSO	DLVED SOLIDS									
Analysis Desc	: SM2540C, TDS	Prepa	aration Metho	d: SM2540	C, TDS					
		Analy	tical Method:	SM2540C	TDS					
Total Dissolved	d Solids(TDS)	4760 mg/L	500	500	200	01/22/19 14:30	ADO	G 01/22/19 14:30	ADG	
INORGANICS										
Analysis Desc:	SW6010B ICP-AES	Prepa	aration Metho	d: SW3010	A, Metals F	Prep				
		Analy	tical Method:	SW6010B	ICP-AES					
Boron Total		<0.0500 mg/L	0.0500	0.0200	1	01/25/19 10:34	ME	01/28/19 21:09	FM	
Calcium Total		760 mg/L	1.00	0.350	5	01/25/19 10:34	ME	01/29/19 16:38	FM	
Field Paramet	ers									
Analysis Desc:	Field pH SM4500H+I	3 Prepa	ration Metho	d: Field pH	SM4500H+	B TCEQ VOL 1				
TCEQ VOL 1		Analy	tical Method:	Field pH S	M4500H+B	TCEQ VOL 1				
рН		6.39 рН			1	01/16/19 14:50	ERS	01/16/19 14:50	ERS	N

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ANALYTICAL RESULTS QUALIFIERS

Workorder: Q1902854

PARAMETER QUALIFIERS

Lab ID: Q1902854001

N Not Accredited

Lab ID: Q1902854002

N Not Accredited

Lab ID: Q1902854003

N Not Accredited

Report ID: 364857 - 6920128

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1

Workorder: Q1902854

QC Batch:	WET/19037	Analysis Method:	SM2540C, TDS
do Baton.		r maiyele memeai	0.1120100, 120

QC Batch Method: SM2540C, TDS

Associated Lab Samples: Q1902854002, Q1902854003

METHOD BLANK: 1186873										
Parameter	Units	Blank Result	Reporting Limit	Qual						
Total Dissolved Solids(TDS)	mg/L	<25.0	25.0							
LABORATORY CONTROL S	SAMPLE: 1	186874								
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Qual				
Total Dissolved Solids(TDS)	mg/L	400	386	96.5	80 - 120	non and an			Righ of Although systems	
	0									
SAMPLE DUPLICATE: 1186		IGINAL: Q19	902409001							
SAMPLE DUPLICATE: 1186		IGINAL: Q19 Original Result	902409001 DUP Result			% Rec		% Rec Limit	RPD	^{Max} Qual
SAMPLE DUPLICATE: 1186 Parameter	875 OR	Original	DUP			% Rec		% Rec Limit	RPD 6.35	Max _{Qual} 20
· ·	875 OR Units mg/L	Original Result	DUP Result 325	1		% Rec		% Rec Limit		
SAMPLE DUPLICATE: 1186 Parameter Total Dissolved Solids(TDS)	875 OR Units mg/L	Original Result 305	DUP Result 325	1 MS Result	MS % Rec	% Rec % Rec Limit	Qual	% Rec Limit		

S - Spike Recovery Outside Recovery Limits

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank



Workorder: Q1902854

QC Batch:	WET/19041	Analysis Method:	E300.0, Anions

QC Batch Method: E300.0, Anions

Associated Lab Samples: Q1902854001, Q1902854002, Q1902854003

METHOD BLANK: 118702	3									
Parameter	Units	Blank Result	Reporting Limit	Qual						
Chloride	mg/L	<1.00	1.00							
Fluoride	mg/L	<0.0100	0.0100							
Sulfate	mg/L	<1.00	1.00							
LABORATORY CONTROL	SAMPLE: 11	87024								
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Qual				
Chloride	mg/L	30	30.1	100	90 - 110				naladatan kenderik dari k	ing an
Fluoride	mg/L	1	.97	96.6	90 - 110					
Sulfate	mg/L	30	29.8	99.5	90 - 110					
MATRIX SPIKE: 1187028	DUPLICATI	E: 1187029	ORIGINA	L: Q19028	354001					
		Original	Spike	MS	MSD	MS %	MSD %	% Rec Limit	RPD	Max
Parameter	Units	Result	Conc.	Result	Result	Rec	Rec			RPD Qual
Fluoride	mg/L	.22	1	1.09	1.11	87.1	88.7	80 - 120	1.82	20

<u>Qualifiers</u>

S - Spike Recovery Outside Recovery Limits

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank

Report ID: 364857 - 6920128



Analysis Method:

SM2540C, TDS

Workorder: Q1902854

QC Batch Method: SM2540C, TDS

Associated Lab Samples: Q1902854001

METHOD BLANK: 118738)									
Parameter	Units	Blank Result	Reporting Limit	Qual						
Total Dissolved Solids(TDS)	mg/L	<25.0	25.0	n fer de mande fersion de la construction de la construcción de la construcción de la construcción de la const		na kulju Antonju da konstruktu je je			2.2.4.C ³⁴ (2.2.0)	
LABORATORY CONTROL	SAMPLE: 1	187381								
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Qual				
T dramotor										
Total Dissolved Solids(TDS)	mg/L	400	394	98.5	80 - 120		1999-9999-9999-9999-999 1999-999-9999-9	na ana amin'ny fanitr'o amin'ny fanitr'o amin'ny fanitr'o amin'ny fanitr'o amin'ny fanitr'o amin'ny fanitr'o a Ny fanitr'o fanitr'o amin'ny fanitr'o amin'ny fanitr'o amin'ny fanitr'o amin'ny fanitr'o amin'ny fanitr'o amin'n		Panala di Stani ancono di Anno di Stani
	mg/L	400 IGINAL: Q19		98.5	80 - 120					
Total Dissolved Solids(TDS)	mg/L			98.5	80 - 120	% Rec		% Rec Limit	RPD	Max _{Qual}
Total Dissolved Solids(TDS)	^{mg/L}	IGINAL: Q19 Original	02894001 DUP	98.5	80 - 120	% Rec		% Rec Limit	RPD .948	Max _{Qual} 20
Total Dissolved Solids(TDS) SAMPLE DUPLICATE: 118 Parameter	mg/L 7382 ORI Units mg/L	IGINAL: Q19 Original Result	002894001 DUP Result 1050		80 - 120	% Rec		% Rec Limit		
Total Dissolved Solids(TDS) SAMPLE DUPLICATE: 118 Parameter Total Dissolved Solids(TDS)	mg/L 7382 ORI Units mg/L	IGINAL: Q19 Original Result 1060	002894001 DUP Result 1050		80 - 120 MS % Rec	% Rec % Rec Limit	Qual	% Rec Limit		

- <u>Qualifiers</u>
- S Spike Recovery Outside Recovery Limits

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank



QUALITY CONTROL DATA

Analysis Method:

E300.0, Anions

Workorder: Q1902854

QC Batch: WET/19050

QC Batch Method: E300.0, Anions

Associated Lab Samples: Q1902854001

METHOD BLANK: 118788	5									
Parameter	Units	Blank Result	Reporting Limit	Qual						
Chloride	mg/L	<1.00	1.00	yy ang bandan bandan yang bahatan						an a
Sulfate	mg/L	<1.00	1.00							
LABORATORY CONTROL	SAMPLE: 118	7888								
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Qual				
Chloride	mg/L	30	30.1	100	90 - 110					
Sulfate	mg/L	30	29.8	99.4	90 - 110					
MATRIX SPIKE: 1187890	DUPLICATE	: 1187891	ORIGINA	L: Q19030)72003					
Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD _{Qual}
Chloride	mg/L	52.5	20	70.9	71	91.8	92.3	80 - 120	.141	20
Sulfate	mg/L	39.5	20	58.7	58.7	96.2	96.1	80 - 120	0	20

Qualifiers

S - Spike Recovery Outside Recovery Limits

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank

Report ID: 364857 - 6920128

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Workorder: Q1902854

QC Batch:	MEP/8965	Analysis Method:	SW6010B ICP-AES

QC Batch Method: SW3010A, Metals Prep

Associated Lab Samples: Q1902854001, Q1902854002, Q1902854003

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max	Qual	
Boron Total	mg/L	1	.93	.94	93.2	93.7	80 - 120	.535	20		
Calcium Total	mg/L	10	10.5	10.5	105	105	80 - 120	0	20		
METHOD BLANK: 1189020)										
Parameter	Units	Blank Result	Reporting Limit	Qual							
Boron Total	mg/L	<0.0500	0.0500							onyañ eo conte natana	kounner (a
Calcium Total	mg/L	<0.200	0.200								
MATRIX SPIKE: 1189021	DUPLICATE	E: 1189022	ORIGINA	L: Q19028	54001					a and they	
Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qual
Boron Total	mg/L	.02	1	.96	.95	95.6	94.5	75 - 125	1.16	20	
Calcium Total	mg/L	156	10	165	162	89.4	52.3	75 - 125	1.83	20	S

S - Spike Recovery Outside Recovery Limits

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank

Report ID: 364857 - 6920128

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: Q1902854

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
Q1902854002	CBL - 3061			SM2540C, TDS	WET/19037
Q1902854003	CBL - 308I			SM2540C, TDS	WET/19037
Q1902854001	CBL - 301I			E300.0, Anions	WET/19041
Q1902854002	CBL - 3061			E300.0, Anions	WET/19041
Q1902854003	CBL - 3081			E300.0, Anions	WET/19041
Q1902854001	CBL - 301I			SM2540C, TDS	WET/19047
Q1902854001	CBL - 301I			E300.0, Anions	WET/19050
Q1902854001	CBL - 3011	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1902854002	CBL - 306I	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1902854003	CBL - 3081	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1902854003	CBL - 308I	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6948
Q1902854001	CBL - 3011	Field pH SM4500H+B TCEQ VOL 1	FLD/0	Field pH SM4500H+B TCEQ VOL 1	FLD/0
Q1902854002	CBL - 3061	Field pH SM4500H+B	FLD/0	Field pH SM4500H+B	FLD/0
Q1902854003	CBL - 308I	Field pH SM4500H+B TCEQ VOL 1	FLD/0	Field pH SM4500H+B TCEQ VOL 1	FLD/0

Report ID: 364857 - 6920128

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	١	Environmental																	G	lia	1078	52	l				
		Laboratory			-										y Se									Stan A	CCREDI	CO.	
		The Solution Lab	(540) 700 0000	- 4 000 770 50		keq	ues	t for	Ana	alys	is C	hair	1-of	-Cus	stody	/ Re	cor	d						ABO	RATOR	0	
	3505	Montopolis Dr. Fax: (51	(512) 730-6022 (2) 730-6021	or 1-800-776-52	72														Lab	ID#:		1.10					-
F			els.lcra.org											-						nt PO:		-					
		ector: Colt Petri	sater	Client: Contact:							Repor	jpº: E	Beck	kyh	oei	e			Invo	ice To	io-	Be	ck	y L	oei	e	~
	Even	it#:	-	Phone:										8								~~~	l				
	2				Matrix*	_	Co	ntain	er(s) 1	ype/F	reser	vative	/Num	ber *			8		F	Reque	ested	Anal	ysis	*			
	LAB USE ONLY		Colle	cted *	AQ = Aqueous S = Solid T = Tissue DW =Drinking Water	COMPOSITE Y/N	FILTERED Y/N	Literi	HNO3	SUNL						Meta ls	AnibustT										
		Sample ID *	Date*	Time * HH:MM	-	COM	FILTI	1-1	1-1	2						Me	Ani										
Cal		CBL-301I	1/17/19	1400		N	N	X	X							X	X										
262		CBL-306I	1116/19	1347		N	N	X	X				(a)			X	X								1.21		
es?	3	CBL-308I	1/16/19	1450		Ν	N	×	X							X	x										
	4		als and												alle e			14 239									
	5			and the second second				2																			
	6		A	and the second	Mar Land					(b).																	
	7									*1																	
	8		2.4.3																								
	9																										
	10		and a																								
	Trans	· · · · · · · · · · · · · · · · · · ·																	Decial								

Transfers	Relinquished By	Date/Time	Received By	Date/Time		Coo	ler Temp	(°C)	Client Special Instructions:
1	Calter	1/17/19	Malk in frida		#	Т#	Obs.	Corr.	-
2			k-z.	1/18/19 1140	1	6	1.02	1.07	
3					2				
asterisk () are required to be completed.	he COC, client agrees to accept an	id is bound by the ELS Stand	ard Terms and Condition	is. Al	l fields	s with ar	1	Q1902654
Page 1 of	1								364857

LCRA				ample Date: ample Time:	1/14/18 1/14/18 1347	E
ENERGY WATER COMMUNITY SERVICES Field Informatic	on Form			ample ID:	CRILIZION	IE
		JRGING INFORMATI				
URGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= U J 5 WATER VOL IN CASING (Gallons)	3 X WELL VC (Gallons)	4,5 L IN	ACTUAL VOLUME PURGED (Gallons)	
Purging Equipment	PURGING	AND SAMPLING EC Samp	UIPMENT ling Equipment	Dedicate	ed (ØTINI	
Purging Device	BI A-Submersible Pump BI B-Perisataltic Pump C-Bladder Pump	D-Gas Litf Pump E-Venturi Pump F-Dipper/Bottle	G-Bailer H-Scoop/Shovel I-Piston Pump	X X	Purging Other (Specify) Sampling Other (Specify)	
Purging Material	A-Teflon B-Stainless Steel	C-Polypropylene D-PVC	E-Polyethylene	X	Purging Other (Specify)	
Tubing-Purging	A-Teflon B-Tygon	D-Polypropylene E-Polyethylene	F-Silicon G-Combination teflon/Polypropyle	X	Sampling Other (Specify) Purging Other (Specify) Sampling Other (Specify)	
	C-Rope X	ify)			Sampling Outer (Specify)	
Well Elevation		_ D MEASUREMENT (ft/msl) Land Sur	S ace Elevation		(ft/msl)	
Depth to water From top of well casing	=Dw 5.58 (ft) Depth to v From land			(ft)	
Groundwater Elevation		Groundwa	ter Elevation		(ft/msl)	
Well Depth = D	14.8	t) Pump Pla	cement		<i>1</i>	
			e Temp. 19.8	2 (°C)		
Bottle		Analysis		Fie	ld Filt.Y/N	
Type Size Preserva P 250aL HM03	tive Metals				7	
P 25CML ICE	Anich				2	
P 250ml HAND, P 500ml ICE		· · · · · · · · · · · · · · · · · · ·				
Sample Appearance: Weather Conditions: <u>Clau</u> Other: <u>Auge water in</u>	lear Odor: No Ny lightraile Basti S Clear With no an	ne Color vind 58°	<u>Clear</u> Turbi	dity: 2.	58	
WELL VOLUN V=(D-Dw) (A) (7.48 galtft ³) where	1E CALCULATION		e Normal: Yes			
V= volume of standing water in well D = depth to bottom of well below r	neasuring point		SGround Wa	tel Sape	5-70	-
D _w =depth to water below measurin A= cross sectional area	ng point		19			•
2" dia. A= 0.0218 4" dia. A = 0.0	872	Sampler: <u>C</u> Employer: <u>L</u>	cR4			••
		,	-			

ENERGY · WATER · COMMUNITY SERVICES			: · · ·	le Date: le Time:	<u>i/17/19</u> 1400
Field Information	Form		Samp	e ID:	CBLISIOII
	PUF	RGING INFORMATIO	N		· · · · · · · · · · · · · · · · · · ·
1 9 0 1 1 6 PURGE DATE (YY MM DD)	<u> </u>	V= 3 WATER VOL IN CASING (Gallons)	3 X WELL VOL IN (Gallons)	7	ACTUAL VOLUME PURGED (Gallons)
Purging Equipment		ND SAMPLING EQU Samplin	IPMENT g Equipment[Dedicate	_
Purging Device	 A-Submersible Pump B-Perisataltic Pump C-Bladder Pump 	E-Venturi Pump	G-Bailer H-Scoop/Shovel I-Piston Pump	X X	Purging Other (Specify) Sampling Other (Specify)
Purging Material	」A-Teflon 」B-Stainless Steel	C-Polypropylene I D-PVC	E-Polyethylene	X	Purging Other (Specify)
Fubing-Purging L <u>ビ</u> Fubing-Sampling Lビ		E-Polyethylene (E-Silicon G-Combination teflon/Polypropylene	_ X X X-	Sampling Other (Specify) Purging Other (Specify)
	C-Rope X(specify				Sampling Other (Specify)
	FIELD	MEASUREMENTS			n na hanna an
Vell Elevation		/msl) Land Surfac	e Elevation		(ft/msl)
epth to water rom top of well casing =D	" 36,14 (ft)	Depth to wa From land s			(ft)
roundwater Elevation		Groundwate	r Elevation		(ft/msl)
/ell Depth = D	5411 (ft)	Pump Place	ment		48 (ft)
7, <u>50</u> ,914,6 7,76) LADO	uy/k/cm Sample	Temp. 120,57	(°C)	
Bottle		Analysis		Fie	ld Filt.Y/N
Type Size Preservativ					
P 250ml HNO3 P 250ml ZCE	Metels Anion			1	
-					
· · · · · · · · · · · · · · · · · · ·	01				
mple Appearance: eather Conditions: <u>Cleud</u> ner: <u>Prize vecter is C</u> am0rel Sleus	Viear Odor. <u>1</u> y Eastwind O-Saph	Color:Color:		: 	9,21
imped slow	young riccorng city	ter agailons, we	1 woken Went d.	y affer	×1/2 gallous
WELL VOLUME D-D _w) (A) (7.48 galtft ³) where olume of standing water in well	CALCULATION	Well Appearance I If No, Explain	Normal: Yes 🥢 🖌	No	
. –	asuring point	Procedure: ELS	Ground weters	50P 5-	·7\$
lepth to bottom of well below mea					
lepth to water below measuring ross-sectional area	point .	Date: <u>1/16/</u> Sampler: CF	19		

LERA				· .	Sample Date:	ep
ENERGY · WATER · COMMUNITY SERVICES	- Derme				Sample Time:	
Field Informatio		-			Sample ID:	CIB12131018
	ł	JURGING	INFORMAT	ION		
190116 PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)		R VOL IN CASING (Gallons)	3 X WEL (Ga	L VOL. IN Ions)	ACTUAL VOLUME PURGED (Gallons)
Purging Equipment		G AND SA	MPLING EC Samp	QUIPMENT	Dedicat	ed 🗐 I N I
Purging Device	A-Submersible Pump B-Perisataltic Pump C-Bladder Pump	E-Ven	s Litf Pump turi Pump per/Bottle	G-Bailer H-Scoop/Shove I-Piston Pump	el X X	Purging Other (Specify) Sampling Other (Specify)
Purging Material	A-Teflon B-Stainless Steel	Ć-Poly D-PVC	propylene	E-Polyethylene	X	
Tubing-Purging	A-Teflon		propylene	F-Silicon	X 	Sampling Other (Specify)
Tubing-Sampling	B-Tygon	E-Polye	ethylene	G-Combination teflon/Polypropy	/lene X-	Purging Other (Spectfy)
	C-Rope X	pecify)			,	Sampling Other (Specify)
	FI	ELD MEAS	UREMENT	S [,]		
Well Elevation		(ft/msl)	Land Sur	face Elevation		(ft/msl)
Depth to water From top of well casing =	Dw 23.6	(ft)	Depth to v From lanc			(ft)
Groundwater Elevation			Groundwa	ater Elevation		(ft/msl)
Well Depth = D	35.25	(ft)	Pump Pla	cement		28 (ft)
PH (STI	D) L898 Specific Conductiv	uS/cm #y	Samp	le Temp. 211,1	92 (°C)	
Bottle			Analysis		Fie	eld Filt.Y/N
Type Size Preservati						
P 250ml H10- P 250ml H103		<u>成</u> の	Met	ale ale	n n	
P 250-L HAVOS	GBL-6082 D				p p	
P 250ml ICF	Andor	• •			h	·
tample Appearance: <u>Clo</u> Veather Conditions: <u>Cloc</u> ther: <u>Asgewater</u>	why light Rain Ec	st win	1 0-5m	: <u>Cleas</u> Tu PL 58°		38
WELL VOLUME	CALCULATION	1		e Normal: Yes	"". No	
$(D-D_w)(A)$ (7.48 galtft ³) where			f No, Explain	/·		
 volume of standing water in well depth to bottom of well below me 	asuring point	P	rocedure: E	LS Ground w	ater Sapa	5-710
-depth to water below measuring				/19		£
-eross-sectional area dia. A= 0.0218	n	Sa	ampler:	<u>P</u>		
A = 0.0210 4 Jula. A = 0.08/	۷	Er	mployer: <u>L</u>	CKT		



LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744

> Phone: (512)730-6022 Fax: (512)730-6021

February 1, 2019

BECKIE LOEVE FAYETTE POWER PLANT 6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945

RE: Final Analytical Report

ELS Workorder Q1903004

Attn: BECKIE LOEVE

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 356-6022. We look forward to assisting you again.

Authorized for release by:

Jam Kland

Jason Woods Project Manager jason.woods@lcra.org

Enclosures



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SAMPLE SUMMARY

Workorder: Q1903004

Lab ID	Sample ID	Matrix	Date Collected	Date Received
Q1903004001	CBL - 3021	Aqueous	1/22/2019 11:55	1/22/2019 14:00
Q1903004002	CBL - 340I	Aqueous	1/22/2019 11:07	1/22/2019 14:00
Q1903004003	CBL - 341I	Aqueous	1/22/2019 10:05	1/22/2019 14:00
Q1903004004	CBL - 641I	Aqueous	1/22/2019 10:05	1/22/2019 14:00
Q1903004005	EQB	Aqueous	1/22/2019 11:15	1/22/2019 14:00
Q1903004006	FB	Aqueous	1/22/2019 11:07	1/22/2019 14:00

<u>Report</u>	Definitions
LOD	Limit of Detection
LOQ	Limit of Quantitation
ML	Maximum Limit - Client Specified
DF	Dilution Factor
Qual	Qualifiers
<u></u>	

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Workorder:	Q1903004								
Lab ID: Sample ID: Project ID:	Q1903004001 CBL - 302I FPP GWMP CCR					: 1/22/2019 14:00 : 1/22/2019 11:55	Matrix: Aque Sample Type: SAM		
Parameters		Results Units	LOQ	LOD	ML DF	Prepared	By Analyzed	Ву	Qual
INORGANIC	S								
Analysis Des	c: E300.0, Anions	Prej	paration Metho	od: E300.0,	Anions				
		Ana	lytical Method	: E300.0, A	nions				
Chloride		1690 mg/L	50.0	20.0	50	01/24/19 15:27	FO 01/24/19 15:27	FO	
Fluoride		0.0402 mg/L	0.0100	0.00400	1	01/29/19 14:05	ML 01/29/19 14:05	ML	
Sulfate		1250 mg/L	50.0	20.0	50	01/24/19 15:27	FO 01/24/19 15:27	FO	
TOTAL DISS	OLVED SOLIDS								
Analysis Des	c: SM2540C, TDS	Prep	paration Metho	d: SM2540	C, TDS				
		Ana	lytical Method:	SM2540C	, TDS				
Total Dissolve	ed Solids(TDS)	5060 mg/L	250	250	100	01/25/19 13:26	ADG 01/25/19 13:26	ADG	
INORGANIC	S								
Analysis Des	c: SW6010B ICP-AES	S Prep	aration Metho	d: SW3010)A, Metals P	rep			
		Anal	ytical Method:	SW6010B	ICP-AES				
Boron Total		<0.0500 mg/L	0.0500	0.0200	1	01/25/19 10:34	ME 01/28/19 21:15	FM	
Calcium Total	I	855 mg/L	1.00	0.350	5	01/25/19 10:34	ME 01/29/19 16:43	FM	
Field Parame	eters								
	c: Field pH SM4500H	+B Prep	aration Metho	d: Field pH	SM4500H+	B TCEQ VOL 1			
TCEQ VOL 1		Anal	ytical Method:	Field pH S	M4500H+B	TCEQ VOL 1			
рH		6.44 рН		ala na sa na sa sa sa sa sa sa sa sa	1	01/22/19 11:55	ERS 01/22/19 11:55	ERS	N



Lab ID:	04000004000			Dat	o Pocoivod	: 1/22/2019 14:00	Ma	trix: Aque	0116	
	Q1903004002					: 1/22/2019 14:00		•		
Sample ID:	CBL - 340I			Dat	e Collected	1/22/2019 11.07	Sa	mple Type: SAM	PLE	
Project ID:	FPP GWMP CCR									
Parameters		Results Units	LOQ	LOD	ML DF	Prepared	Ву	Analyzed	Ву	Qual
INORGANICS										
Analysis Desc:	: E300.0, Anions	Prep	aration Metho	od: E300.0,	Anions					
		Anal	vtical Method:	E300.0, Ai	nions					
Chloride		2250 mg/L	50.0	20.0	50	01/24/19 14:17	FO	01/24/19 14:17	FO	
Fluoride		0.830 mg/L	0.500	0.200	50	01/24/19 14:17	FO	01/24/19 14:17	FO	
Sulfate		639 mg/L	50.0	20.0	50	01/24/19 14:17	FO	01/24/19 14:17	FO	
TOTAL DISSO	UVED SOLIDS									
Analysis Desc:	SM2540C, TDS	Prep	aration Metho	d: SM2540	C, TDS					
		Anal	tical Method:	SM2540C,	TDS					
Total Dissolved	l Solids(TDS)	4720 mg/L	250	250	100	01/25/19 13:26	ADG	01/25/19 13:26	ADG	
INORGANICS										
Analysis Desc:	SW6010B ICP-AES	Prep	aration Metho	d: SW3010	A, Metals P	rep				
		Analy	tical Method:	SW6010B	ICP-AES					
Boron Total	And a set of the production of the set of the product of the set of	<0.0500 mg/L	0.0500	0.0200	1	01/25/19 10:34	ME	01/28/19 21:20	FM	
Calcium Total		518 mg/L	0.400	0.140	2	01/25/19 10:34	ME	01/29/19 16:49	FM	
Field Paramete	ers									
	Field pH SM4500H+B	Prepa	aration Metho	d: Field pH	SM4500H+	B TCEQ VOL 1				
TCEQ VOL 1		Analy	tical Method:	Field pH S	M4500H+B	TCEQ VOL 1				
pН		6.59 pH			1 n	01/22/19 11:07	ERS	01/22/19 11:07	ERS	Ν

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Workorder: 0	Q1903004								
Lab ID: Sample ID: Project ID:	Q1903004003 CBL - 341I FPP GWMP CCR					d: 1/22/2019 14:00 d: 1/22/2019 10:05	Matrix: Aqu Sample Type: SAN	eous 1PLE	
Parameters		Results Units	LOQ	LOD	ML DF	Prepared	By Analyzed	Ву	Qual
INORGANIC	s								
Analysis Des	c: E300.0, Anions	Pre	paration Metho	od: E300.0,	Anions				
		Ana	alytical Method	: E300.0, A	nions				
Chloride		1790 mg/L	25.0	10.0	25	01/24/19 14:35	FO 01/24/19 14:35	FO	
Fluoride		0.0546 mg/L	0.0100	0.00400	1	01/29/19 14:21	ML 01/29/19 14:21	ML	
Sulfate		358 mg/L	25.0	10.0	25	01/24/19 14:35	FO 01/24/19 14:35	FO	
TOTAL DISS	OLVED SOLIDS								
Analysis Des	c: SM2540C, TDS	Pre	paration Metho	d: SM2540)C, TDS				
		Ana	lytical Method:	SM2540C	, TDS				
Total Dissolve	ed Solids(TDS)	3870 mg/L	250	250	100	01/25/19 13:26	ADG 01/25/19 13:26	ADG	
INORGANIC	S								
Analysis Des	c: SW6010B ICP-AES	Pre	paration Metho	d: SW3010	0A, Metals	Prep			
		Ana	lytical Method:	SW6010B	ICP-AES				
Boron Total		<0.0500 mg/L	0.0500	0.0200	1	01/25/19 10:34	ME 01/28/19 21:26	FM	
Calcium Total	I	782 mg/L	1.00	0.350	5	01/25/19 10:34	ME 01/29/19 16:54	FM	
Field Parame	eters								
	c: Field pH SM4500H+	B Prej	paration Metho	d: Field pH	SM4500H	+B TCEQ VOL 1			
TCEQ VOL 1		Ana	lytical Method:	Field pH S	M4500H+I	3 TCEQ VOL 1			
pН		6.38 рН			1	01/22/19 10:05	ERS 01/22/19 10:05	ERS	Ν

J



Workorder:	Q1903004		,								
Lab ID: Sample ID: Project ID:	Q1903004004 CBL - 641I FPP GWMP CCR						1/22/2019 14:00 1/22/2019 10:05			Aqueous SAMPLE	
Parameters		Results Units	LOQ	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
INORGANIC	-										
Analysis Des	c: E300.0, Anions	Prep	paration Metho	od: E300.0,	Anion	S					
		Ana	ytical Method	: E300.0, A	nions						
Chloride		1740 mg/L	25.0	10.0		25	01/24/19 14:52	FO	01/24/19 14	:52 FO	
Fluoride		0.0544 mg/L	0.0100	0.00400		1	01/29/19 14:38	ML	01/29/19 14	:38 ML	
Sulfate		364 mg/L	25.0	10.0		25	01/24/19 14:52	FO	01/24/19 14	:52 FO	
TOTAL DISS	OLVED SOLIDS										
Analysis Des	c: SM2540C, TDS	Prep	aration Metho	od: SM2540	C, TD	S					
		Anal	ytical Method:	SM2540C	, TDS						
Total Dissolve	ed Solids(TDS)	3690 mg/L	250	250		100	01/25/19 13:26	ADO	G 01/25/19 13	:26 ADG	
INORGANIC	s										
Analysis Des	c: SW6010B ICP-AES	Prep	aration Metho	d: SW3010)A, Me	tals P	rep				
		Anal	ytical Method:	SW6010B	ICP-A	ES					
Boron Total		<0.0500 mg/L	0.0500	0.0200		1	01/25/19 10:34	ME	01/28/19 21	:31 FM	
Calcium Total	I	- 844 mg/L	1.00	0.350		5	01/25/19 10:34	ME	01/29/19 16	:59 FM	

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Workorder:	Q1903004										
Lab ID:	Q1903004005		2	Da	te Rece	eived	: 1/22/2019 14:00	Ma	atrix: A	queous	
Sample ID:	EQB			Da	te Colle	ected	: 1/22/2019 11:15	Sa	mple Type: S	SAMPLE	
Project ID:	FPP GWMP CCR										
Parameters		Results Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed	Ву	Qual
INORGANIC	S										
Analysis Des	c: E300.0, Anions	Prep	paration Metho	od: E300.0,	Anion	3					
		Anal	ytical Method	: E300.0, A	nions						
Chloride		<1.00 mg/L	1.00	0.400		1	01/24/19 17:48	FO	01/24/19 17:	48 FO	
Fluoride		<0.0100 mg/L	0.0100	0.00400		1	01/24/19 17:48	FO	01/24/19 17:	48 FO	
Sulfate		<1.00 mg/L	1.00	0.400		1	01/24/19 17:48	FO	01/24/19 17:	48 FO	
TOTAL DISS	OLVED SOLIDS										
Analysis Des	c: SM2540C, TDS	Prep	aration Metho	od: SM2540	C, TD	S					
		Anal	ytical Method:	SM2540C	, TDS						
Total Dissolv	ed Solids(TDS)	110 mg/L	25.0	25.0		10	01/25/19 13:26	ADO	G 01/25/19 13:	26 ADG	
INORGANIC	S										
Analysis Des	c: SW6010B ICP-AES	Prep	aration Metho	d: SW3010)A, Me	tals P	rep				
		Anal	ytical Method:	SW6010B	ICP-A	ES					
Boron Total		<0.0500 mg/L	0.0500	0.0200		1	01/25/19 10:34	ME	01/28/19 21:	37 FM	
Calcium Tota	1	<0.200 mg/L	0.200	0.0700		1	01/25/19 10:34	ME	01/28/19 21:	37 FM	

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Workorder: C	1903004											
Lab ID:	Q1903004006			Da	te Rec	eived	: 1/22/2019 14:00	Ma	atrix:	Aqueo	us	
Sample ID:	FB			Da	te Col	lected	: 1/22/2019 11:07	Sa	mple Type:	SAMP	LΕ	
Project ID:	FPP GWMP CCR											
Parameters		Results Units	LOQ	LOD	ML	DF	Prepared	By	Analyzed		By	Qual
INORGANICS	3											
Analysis Desc	:: E300.0, Anions	Preț	paration Metho	od: E300.0	Anior	IS						
		Ana	lytical Method	: E300.0, A	nions							
Chloride		<1.00 mg/L	1.00	0.400		1	01/24/19 13:24	FO	01/24/19 1	3:24	FO	
Fluoride		<0.0100 mg/L	0.0100	0.00400		1	01/24/19 13:24	FO	01/24/19 1	3:24	FO	
Sulfate		<1.00 mg/L	1.00	0.400		1	01/24/19 13:24	FO	01/24/19 13	3:24	FO	
TOTAL DISSO	DLVED SOLIDS											
Analysis Desc	: SM2540C, TDS	Prep	aration Metho	od: SM2540	DC, TE	S						
		Anal	ytical Method:	SM2540C	, TDS							
Total Dissolve	d Solids(TDS)	<25.0 mg/L	25.0	25.0		10	01/25/19 13:26	ADG	6 01/25/19 13	3:26	ADG	
INORGANICS												
Analysis Desc	: SW6010B ICP-AES	Prep	aration Metho	d: SW3010	DA, Me	etals P	rep					
		Anal	ytical Method:	SW6010E	ICP-A	AES						
Boron Total		<0.0500 mg/L	0.0500	0.0200		1	01/25/19 10:34	ME	01/28/19 21	1:42	FM	
Calcium Total		<0.200 mg/L	0.200	0.0700		1	01/25/19 10:34	ME	01/28/19 21	1:42	FM	

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ANALYTICAL RESULTS QUALIFIERS

Workorder: Q1903004

PARAMETER QUALIFIERS

Lab ID: Q1903004001

N Not Accredited

Lab ID: Q1903004002

N Not Accredited

Lab ID: Q1903004003

N Not Accredited

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Analysis Method:

E300.0, Anions

Workorder: Q1903004

QC Batch: WET/19061

QC Batch Method: E300.0, Anions

Associated Lab Samples: Q1903004001, Q1903004002, Q1903004003, Q1903004004, Q1903004005, Q1903004006

METHOD BLANK: 118873	J									
Parameter	Units	Blank Result	Reporting Limit	Qual						
Chloride	mg/L	<1.00	1.00	590.990 .000.000.000.000000 0						
Fluoride	mg/L	<0.0100	0.0100							
Sulfate	mg/L	<1.00	1.00							
LABORATORY CONTROL	SAMPLE: 1	188736								
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Qual				
Chloride	mg/L	30	32.9	110	90 - 110	linisingt-new out-oil-cavez-oni				
Fluoride	mg/L	1	.98	98.4	90 - 110					
Sulfate	mg/L	30	31.3	104	90 - 110					
MATRIX SPIKE: 1188738	DUPLICAT	E: 1188739) ORIGINA	L: Q19030	04006					
Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD _{Qua}
Chloride	mg/L	0	20	19.8	19.8	99.2	99.2	80 - 120	0	20
Fluoride	mg/L	0	1	.98	.98	98	98.2	80 - 120	.204	20
Sulfate	mg/L	0	20	19.5	19.5	97.6	97.5	80 - 120	0	20
METHOD BLANK: 1188743										
Parameter	Units	Blank Result	Reporting Limit	Qual						
Chloride	mg/L	<1.00	1.00				2 March 2010 (1997)			ine on the <u>prosper</u> and for the provident
Fluoride	mg/L	<0.0100	0.0100							
Sulfate	mg/L	<1.00	1.00							

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank

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Workorder: Q1903004

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Qual	
Chloride	mg/L	30	30.2	101	90 - 110		an an ann an Anna an Anna ann an Anna ann an ann an
Fluoride	mg/L	1	.99	98.5	90 - 110		
Sulfate	mg/L	30	30.1	100	90 - 110		
MATRIX SPIKE SAM	1PLE: 1188745 C	RIGINAL: Q	190300400	5			
		Original	Spike	MS	MS %	% Rec	Qual
Parameter	Units	Result	Conc.	Result	Rec	Limit	
Chloride	mg/L	0	20	19.6	98.2	80 - 120	

Chloride	mg/L	0	20	19.6	98.2	80 - 120
Fluoride	mg/L	0	1	.97	97.2	80 - 120
Sulfate	mg/L	.01	20	19.3	96.5	80 - 120

Qualifiers

S - Spike Recovery Outside Recovery Limits

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank

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Analysis Method:

SM2540C, TDS

Workorder: Q1903004

QC Batch: WET/19062

QC Batch Method: SM2540C, TDS

Associated Lab Samples: Q1903004001, Q1903004002, Q1903004003, Q1903004004, Q1903004005, Q1903004006

METHOD BLANK: 1188757	7									
Parameter	Units	Blank Result	Reporting Limit	Qual						
Total Dissolved Solids(TDS)	mg/L	<25.0	25.0		an a					
LABORATORY CONTROL	SAMPLE:	1188758								
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Qual				
Total Dissolved Solids(TDS)	mg/L	400	379	94.8	80 - 120					
SAMPLE DUPLICATE: 118	8759 OF	IGINAL: Q19	03004006							
Parameter	Units	Original Result	DUP Result			% Rec		% Rec Limit	RPD	Max _{Qua}
Total Dissolved Solids(TDS)	mg/L	21	20						4.88	20
MATRIX SPIKE SAMPLE: 1	188760	original: (2190300400	8						
	Units	Original Result	Spike Conc.	MS Result	MS % Rec	% Rec Limit	Qual			
Parameter				372	93	70 - 130				

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank

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Workorder: Q1903004

QC Batch:	MEP/8965	Analysis Method:	SW6010B ICP-AES
QC Batch Method:	SW3010A, Metals Prep		
Associated Lab Sar	mples: Q1903004001, Q1903004002, C	1903004003, Q1903004004	, Q1903004005, Q1903004006

LABORATORY CONTROL	SAMPLE: 11	89017									
Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max	Qual	
Boron Total	mg/L	1	.93	.94	93.2	93.7	80 - 120	.535	20		
Calcium Total	mg/L	10	10.5	10.5	105	105	80 - 120	0	20		
METHOD BLANK: 118902	0										
Parameter	Units	Blank Result	Reporting Limit	Qual							
Boron Total	mg/L	<0.0500	0.0500					n an Angelan	ooniin oo oo oo oo	an a	ang ng n
Calcium Total	mg/L	<0.200	0.200								
MATRIX SPIKE: 1189021	DUPLICATE	E: 1189022	ORIGINAL	.: Q19028	54001						
Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD	Qual
Boron Total	mg/L	.02	1	.96	.95	95.6	94.5	75 - 125	1.16	20	
Calcium Total	mg/L	156	10	165	162	89.4	52.3	75 - 125	1.83	20	S

S - Spike Recovery Outside Recovery Limits

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank

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E300.0, Anions

Workorder: Q1903004

QC Batch: WET/19066 Analysis Method:

QC Batch Method: E300.0, Anions

Associated Lab Samples: Q1903004001, Q1903004003, Q1903004004

METHOD BLANK: 118938	6									
Parameter	Units	Blank Result	Reporting Limit	Qual						
Fluoride	mg/L	<0.0100	0.0100						1999-1999 (August August Au	
LABORATORY CONTROL	. SAMPLE: 1	189389								
Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limit	Qual				
Fluoride	mg/L	1	.98	97.8	90 - 110				a providente angle (inn an a
MATRIX SPIKE: 1189391	DUPLICAT	E: 1189392	ORIGINA	L: Q19034	184005					
Parameter	Units	Original Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limit	RPD	Max RPD _{Qual}
Fluoride	mg/L	.29	1	1.32	1.3	102	100	80 - 120	1.53	20

S - Spike Recovery Outside Recovery Limits

R - RPD Outside Recovery Limits

B - Analyte Detected in Method Blank

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: Q1903004

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
Q1903004001	CBL - 302I			E300.0, Anions	WET/19061
Q1903004002	CBL - 3401			E300.0, Anions	WET/19061
Q1903004003	CBL - 3411			E300.0, Anions	WET/19061
Q1903004004	CBL - 6411			E300.0, Anions	WET/19061
Q1903004005	EQB			E300.0, Anions	WET/19061
Q1903004006	FB			E300.0, Anions	WET/19061
Q1903004001	CBL - 3021			SM2540C, TDS	WET/19062
Q1903004002	CBL - 340I			SM2540C, TDS	WET/19062
Q1903004003	CBL - 341I			SM2540C, TDS	WET/19062
Q1903004004	CBL - 6411			SM2540C, TDS	WET/19062
Q1903004005	EQB			SM2540C, TDS	WET/19062
Q1903004006	FB			SM2540C, TDS	WET/19062
Q1903004001	CBL - 3021	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1903004002	CBL - 340I	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1903004003	CBL - 3411	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1903004004	CBL - 6411	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1903004005	EQB	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1903004006	FB	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6945
Q1903004001	CBL - 3021	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6948
Q1903004002	CBL - 340I	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6948
Q1903004003	CBL - 341I	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6948
Q1903004004	CBL - 6411	SW3010A, Metals Prep	MEP/8965	SW6010B ICP-AES	MET/6948
Q1903004001	CBL - 3021			E300.0, Anions	WET/19066
Q1903004003	CBL - 341I			E300.0, Anions	WET/19066
Q1903004004	CBL - 641I			E300.0, Anions	WET/19066
Q1903004001	CBL - 3021	Field pH SM4500H+B	FLD/0	Field pH SM4500H+B TCEQ VOL 1	FLD/0
Q1903004002	CBL - 340I	TCEQ VOL 1 Field pH SM4500H+B	FLD/0	Field pH SM4500H+B	FLD/0
Q1903004003	CBL - 3411	TCEQ VOL 1 Field pH SM4500H+B TCEQ VOL 1	FLD/0	TCEQ VOL 1 Field pH SM4500H+B TCEQ VOL 1	FLD/0

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Q1403004

La Grange, TX 78945



LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

LCRA - Environmental Lab
3505 Montopolis Dr.
Austin, TX 78744

Project:

Event#:

Collector:

Phone: (512) 356-6022 or 1-800-776-5272 Eax: (512) 356 6021

744 https://els.lcra.org	1				Lab ID#:	
					Client PO:	
FPP - CCR - Groundwater	Client:	LCRA	Report To:	BECKIE LOEVE FAYETTE POWER PLANT 6549 POWER PLANT RD	Invoice To:	BECKIE LOEVE FAYETTE POWER PLANT
1432003 / 7853	Phone:			MAIL STOP FPP La Grange, TX 78945		6549 POWER PLANT RD MAIL STOP FPP La Grange, TX, 78945

	Y	· · · ·			Matrix*		Co	ntaine	er(s) T	ype/P	reser	vative	/Num	ber *					F	Reque	ested	Anal	ysis *				
	AB USE ONL		Colle	cted *	AQ = Aqueous S = Solid T = Tissue DW =Drinking Water	COMPOSITE Y/N	FILTERED Y/N	-	250PHNO3			-				AMTDS	AM		300.0AM-28								
	LA	Sample ID *	Date*	Time * HH:MM		CON	FILT	1LPU	250F							2540	6010	F-pH	300.0								
	1											l															
100	2	CBL - 3021	1/22/19	11:55	AQ	N	N	1	1							x	x	х	x								
Û.	3																	1915-576								1.00.00	
	4																						1944		the first		
652	5	CBL - 340I	1/22/19	1107	AQ			1	1							х	х	х	x			1 -					
en s	6	CBL - 3411	1/22/19	1005	AQ	N	N	1	1							x	x	х	x		ta gitt				N. S. S.	- k-1	
carl	7	CBL - 6411	1	1005	AQ	N	N	1	1					ki satust ito	NY CONTRACTOR	x	X		x	18. Cal	A LEADER	1		a second		1.199	
ers	8	EQB		1115	AQ	N	1	1	1	€ 18 ⁰⁰				e e e		Х	x		X								
çub	9	FB	T	1107	AQ	N	N	1	1				100000.00			х	x	aneri	X						1000		

Transfers	Relinquished By	Date/Time	Received By	Date/Time			Coc	er Temp		Client Special Instructions:
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2						1	6	3.10	3.1.(
3 Note: Relinquish asterisk (*) are re	ng sample(s) and signing quired to be completed.	the COC, client agrees to	ccept and is bound by the ELS Standa	ard Terms ar	d Conditior	2 ns. All	fields	s with ar)	Lab Ur - Columnation 201903004 365007

					Sar	nple Date	
					San	nple Time	
Field Informatio	on Form				San	nple ID:	CBL340
		PU	RGING IN	IFORMATIC	N		
URGE DATE	START PURGE (2400 Hr. Clock		WATER V	vOL IN CASING (Gallons)	3 X WELL VOL. Gallons)		ACTUAL VOLUME PURGED (Gallons)
	2	PURGING	AND SAN				
Purging Equipment	Dedicated I	YIINI		Sampl	ling Equipment¥	Dedic	ated IYIINI
	B A-Submers B-Perisatal C-Bladder F	ic Pump	E-Venti	Litf Pump uri Pump er/Bottle	G-Bailer H-Scoop/Shovel I-Piston Pump	X- X-	Purging Other (Specify)
Purging Material	A-Teflon B-Stainless	Steel	C-Polyp D-PVC	propylene	E-Polyethylene	— X- X-	Purging Other (Specify)
Tubing-Purging Lí Tubing-Sampling Lí	⊆ A-Teflon ⊆ B-Tygon		D-Polyp E-Polye	propylene hylene	F-Silicon G-Combination teflon/Polypropyler	X-	Sampling Other (Specify) Purging Other (Specify)
	C-Rope X-	(Spec	- .	_	tenerin etypiopyler		Sampling Other (Specify)
an a shanna an an a casan iyay da badan da araa aa aa aa aa aa aa aa aa a				UREMENT	S.		
Well Elevation			(ft/msl)	Land Sur	face Elevation		(ft/msl)
Depth to water From top of well casing	=Dw 2	0,05	(ft)	Depth to From land	d surface		(ft)
Groundwater Elevation Well Depth = D	4	0114	(ft)	Groundwa Pump Pla	ater Elevation		(ft/msl)
	STD)		G uS/cm	-	ble Temp. 2 2 .	RS ^("C)	
Bottle				Analysis			Field Filt.Y/N
Type Size Preserv		· · ·					++
$\frac{P}{P} = \frac{1}{12} $	metal						N N
P asoni HNU3		., TOS ent bicank	netal	-			N
P 25071 102		ent blemk					N
Sample Appearance: Veather Conditions: Dther: <u>Purge water</u>	Cloudy, 50°F,	caím	none	Colo	pr: <u>Aeeur</u> Turk	oidity:	0.84
				Woll Are	ingo Normali Vac		
=(D-D _w) (A) (7.48 galtft ³) when = volume of standing water in	well	N		Well Appeara If No, Explain Procedure:	ELS Groundwater		5-7)
= depth to bottom of well below = depth to water below measurements				Date:	1/22/19	<u> </u>	<u>y</u> y
= cross sectional area dia. A= 0.0218 4" dia. A =	0.0872		Sampler: Erica Schensen jasan wood Employer: Licha emillo, iau				

I ARA				Sar	nple Date	e: <u>1/22/19</u>
ENERGY • WATER • COMMUNITY SERVICES				San	nple Time	e: 1005
Field Information	n Form			San	nple ID:	CBL341
	PL	JRGING IN	FORMATI	ON	6,4,100,00,00,000,000,000,000,000	
	START PURGE (2400 Hr. Clock)		C I IN CASING Gallons)	$\frac{ 1 5 }{3 \times \frac{1}{(Gallons)}}$		ACTUAL VOLUME PURGED (Gailons)
, , ,	PURGING	AND SAM				
Purging Equipment	Dedicated IYIINI		Samp	ling Equipment)	Dedic	atedIYIINI
Purging Device	A-Submersible Pump B-Perisataltic Pump C-Bladder Pump		_itf Pump ri Pump r/Bottle	G-Bailer H-Scoop/Shovel I-Piston Pump	X- X-	Purging Other (Specify)
Purging Material	A-Teflon B-Stainless Steel	C-Polyp D-PVC	ropylene	E-Polyethylene	, X-	Purging Other (Specify)
Tubing-Purging	J A-Teflon _J B-Tygon	D-Polyp E-Polye	ropylene thylene	F-Silicon G-Combination	X- X-	Sampling Other (Specify) Purging Other (Spectfy)
	C-Rope X	ecify)	-	teflon/Polypropyler	e X-	Sampling Other (Specify)
an a baar taba ayaa ah a ah	FIE	LD MEAS	JREMENT	S	den natur - anna a dharmad 40 a 70 ann	
Nell Elevation		(ft/msl)		face Elevation		(ft/msl)
Depth to water From top of well casing =	=Dw [] 5].70	(ft)	Depth to From lan	d surface		(ft)
Groundwater Elevation			Groundw	ater Elevation		(ft/msl)
Vell Depth = D ́ <u>З</u> (S ⁻ _{PH}	[4 6 . 4 3] TD) $[6 0 7]$ Specific Conductiv	(ft) / uS/cm /ity	Pump Pla Samj	acement ble Temp. 215	38(°C)	Z 5 (ft)
Bottle			Analysis			Field Filt.Y/N
Type Size Preserva						
P 250mL HNO3 P 2L ICE	Metals Anichs, TDS	- 12 - 11				N
P 250ml HNO3	Field duplicate,	(BL 641]	Ĺ			N
P IL ICE P 250ml HNO	Field aupitcase	CBL 641				N
ample Appearance:		10ne				
WELL VOLU	IME CALCULATION		Well Appeara	ance Normal: Yes 🛛 🗸	No	
=(D-D _w) (A) (7.48 galtft ³) where = volume of standing water in w = depth to bottom of well below	ell		If No, Explain Procedure:	ELS Graundukater		
 depth to bottom of well below depth to water below measu cross sectional area 			Date:			
dia. A= 0.0218 4" dia. A = 0.	.0872			LCRA enviro. Tab		

				Samp	le Date	e: _1/22/19
				Sampl	e Time	e:;55
Field Information	Form			Sampl	e ID:	CBL302
	PL	JRGING IN	FORMATIC	ON		
URGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER	VOL IN CASING (Gallons)	3 x well vol. in (Gallons)		ACTUAL VOLUME PURGED (Gallons)
Purging Equipment	PURGING	AND SAN	/IPLING EQ Sampl	UIPMENT ling Equipment	Dedica	ated IYIINI
Purging Device	☐ A-Submersible Pump ☐ B-Perisataltic Pump C-Bladder Pump	E-Vent	Litf Pump uri Pump er/Bottle	G-Bailer H-Scoop/Shovel I-Piston Pump	X- X-	Purging Other (Specify) Sampling Other (Specify)
Purging Material	」 A-Teflon 」 B-Stainless Steel	C-Polyp D-PVC	propylene	E-Polyethylene	— Χ Χ- ·	Purging Other (Specify) Sampling Other (Specify)
Tubing-Purging LF	」 A-Teflon 」 B-Tygon C-Rope X	E-Polye	propylene ethylene	F-Silicon G-Combination teflon/Polypropylene	X X	Purging Other (Specify) Sampling Other (Specify)
	(Spe	ecify)				
Well Elevation	FIE	LD MEAS (ft/msl)	UREMENT	S face Elevation		(ft/msl)
Depth to water From top of well casing =ι	Dw [] [8], [4]()	(ft)	Depth to From land			(ft)
Groundwater Elevation Vell Depth = D		(ft)	Groundwa Pump Pla	ater Elevation		(ft/msl)
ичен Берин – Б [<u> 6 ,4 4</u>] (STI _{РН}		3 uS/cm	•	ble Temp. 21.) (°C)	
Bottle			Analysis			Field Filt.Y/N
TypeSizePreservatP2SOMLUNO3P1LICC						N N
Sample Appearance:@ Veather Conditions:@ Dther:water	Nav Odor: 10udy + 50°F, calm 13 clear w/ ho odl	nane Stri	Colo	or: <u>Ulay</u> Turbidi	ty:	1.34
WELL VOLŨM =(D-D _w) (A) (7.48 galtft ³) where	IE CALCULATION		Well Appeara	ance Normal: Yes	No	
 volume of standing water in wel depth to bottom of well below r v=depth to water below measuring 	neasuring point			ELS Graundwater SOF	5-7	D
= cross sectional area ' dia. A= 0.0218 4" dia. A = 0.0	872		Sampler:	Evica scrensent Jason V Lara envira, i ab		



May 20, 2019

BECKIE LOEVE FAYETTE POWER PLANT 6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945 BECKIE.LOEVE@LCRA.ORG

RE: Final Analytical Report Q1917642

Attn: BECKIE LOEVE

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 730-6022. We look forward to assisting you again.

Authorized for release by:

Jam Kleart

Jason Woods Account Manager jason.woods@lcra.org

Enclosures:



POWERED BY



Sample Summary

LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744 Phone: (512) 730-6022 Fax: (512) 730-6021

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q1917642001	CBL - 301	AQ	E300.0, Anions	5/2/2019 11:21	5/2/2019 14:00
Q1917642001	CBL - 301	AQ	Field pH SM4500H+B TCEQ VOL 1	5/2/2019 11:21	5/2/2019 14:00
Q1917642001	CBL - 301	AQ	SM2540C, TDS	5/2/2019 11:21	5/2/2019 14:00
Q1917642001	CBL - 301	AQ	SW6010B ICP-AES	5/2/2019 11:21	5/2/2019 14:00
Q1917642002	CBL - 801	AQ	SW6010B ICP-AES	5/2/2019 11:21	5/2/2019 14:00
Q1917642003	EQ Blank	AQ	SW6010B ICP-AES	5/2/2019 11:21	5/2/2019 14:00

Report Definitions

MRL - Minimum Reporting Limit

LOD - Limit of Detection

ML - Maximum Limit - Client Specified

MCL - Maximum Contaminant Level

MDL - Method Detection Limit

LOQ - Limit of Quantitation - Client Specified

DF - Dilution Factor

Qual - Qualifier

(S) - Surrogate Spike

QC Qual - red font indicates Result Value outside acceptable range

B- Analyte detected in method blank

S - Spike recovery outside limit

R - RPD outside duplicate precision limit

J - Analyte detected below quantitation limit

RPD - Relative Percent Difference



Project Summary

Batch Comments

Sample Analysis Comments

Lab ID: Q1917642001 Sample ID: CBL - 301

Not Accredited - pH



Analytical Results

Lab ID: Q191	7642001	Date F	Received	: 5/2/20	019 14:	00	Ma	atrix: Aqueous		
Sample ID: CBL -	301	Date C	Collected	: 5/2/20	019 11::	21 Sa	mple T	ype: SAMPLE		
Project ID: FPP C	SWMP CCR									
•										
Parameter	Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
Field Parameters (Field pH SM4500H+B TCEQ VOL 1)		en forstere Des Baseres							
рН	6.14 pH				1		CC P	05/02/19 11:21	CC P	*
INORGANICS (E30	0.0, Anions)			Sa Series	AND ST					
Chloride	1910 mg/L	500	200		500	05/09/19 11:03	FO	05/09/19 14:17	FO	
Fluoride	0.112 mg/L		0.0400		10	05/15/19 07:08	FO	05/14/19 16:46	FO	
Sulfate	389 mg/L	10.0	4.00		10	05/15/19 07:08	FO	05/14/19 16:46	FO	
INORGANICS (SW	3010A, Metals Prep/SW6010B ICP-A	ES)	i alteri i Nota e en							
Boron Total	<0.0500 mg/L	0.0500	0.0200		1	05/07/19 14:44	ME	05/08/19 18:32	FM	
Calcium Total	762 mg/L	2.00	0.700		10	05/07/19 14:44	ME	05/09/19 11:36	FM	
TOTAL DISSOLVED	SOLIDS (SM2540C, TDS)				alansi k Rominen					() ()
Total Dissolved Solids(TDS)	5650 mg/L	250	250		100	05/07/19 13:36	AD G	05/07/19 16:40	AD G	



Analytical Results (cont.)

Parameter	Results Units	RL LOD ML DF	Prepared By Analyzed	By Qual
Project ID: FPP GWMP CCR				
Sample ID: CBL - 801		ate Collected: 5/2/2019 11:21	1 Sample Type: SAMPLE	
Lab ID: Q1917642002		ate Received: 5/2/2019 14:00	0 Matrix: Aqueous	

Farameter	Results Offics		LOD	1011	DI	Tiopulou	2,	7 mary 20a	-,	quan
INORGANICS	(SW3010A, Metals Prep/SW6010B ICP-AES)	0			A SANGA				an tais Ringer	
Boron Total	<0.0500 mg/L	0.0500	0.0200		1	05/07/19 14:44	ME	05/08/19 18:38	FN	1
Calcium Total	977 mg/L	2.00	0.700		10	05/07/19 14:44	ME	05/09/19 11:41	FΝ	1



Analytical Results (cont.)

Lab ID: Q1917642003	Date Received: 5/2/2019 14:00	Matrix: Aqueous	
Sample ID: EQ Blank	Date Collected: 5/2/2019 11:21	Sample Type: SAMPLE	
Project ID: FPP GWMP CCR			

Parameter	Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
INORGANICS	(SW3010A, Metals Prep/SW6010B ICP-AES)									
Boron Total Calcium Total	<0.0500 mg/L <0.200 mg/L		0.0200 0.0700		1 1	05/07/19 14:44 05/07/19 14:44		05/08/19 18:43 05/08/19 18:43	FN FN	



Quality Control

Preparation Bate Preparation Metho			Analys	sis Method	: E300.0, /	Anions			
Associated Lab II	Ds: Q1917642001								
Laboratory Reagent I	Blank (1241715)								
Parameter	Results	Units	MRL	LOD	Qualifier				
Chloride	<1.00	mg/L	1.00	0.400					
Method Reporting Lir	mit Check (1241717)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %			л. — Я 19	
Chloride	mg/L	1	.83	82.5	50 - 150				
Laboratory Fortified E	Blank (1241718)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %				
Chloride	mg/L	30	28.9	96.5	90 - 110				
Limit of Quantitation	Check (1241719)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	-			
Chloride	mg/L	5	3.98	79.5	70 - 130				
Laboratory Fortified N	latrix (1242026) Orig	inal: Q1917	314001; L	ab Fortified.	Matrix Dup	olicate (12	42027)		
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %
Chloride	mg/L	100	122	98.2	80 - 120	120	97.1	1.65	20



Quality Control (cont.)

 Preparation Batch:
 MEP / 9218
 Analysis Method:
 SW6010B ICP-AES

 Preparation Method:
 SW3010A, Metals Prep
 SW6010B ICP-AES
 SW6010B ICP-AES

Associated Lab IDs: Q1917642001, Q1917642002, Q1917642003

Method Blank (1238553) LOD Qualifier Parameter Results Units MRL Boron Total <0.0500 mg/L 0.0500 0.0200 Calcium Total <0.200 mg/L 0.200 0.0700

Lab Control Sample (1238551); Lab Control Sample Duplicate (1238552)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %
Boron Total	mg/L	1	.99	98.5	80 - 120	.98	97.8	.713	20
Calcium Total	mg/L	10	10.5	105	80 - 120	10.4	104	.957	20

Matrix Spike (1238554) Original: Q1917642001; Matrix Spike Duplicate (1238555)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	
Boron Total	mg/L	1	.96	96	75 - 125	.95	95	1.05	20	S
Calcium Total	mg/L	10	1020	2580	75 - 125	1010	2470	.985	20	



Quality Control (cont.)

Preparation Batch: WET / 19749 Preparation Method: E300.0, Anions Associated Lab IDs: Q1917642001

Associated Lab II	DS. Q1917042001					2		
Laboratory Reagent	Blank (1245440)							
Parameter	Results	Units	MRL	LOD	Qualifier		~	
Fluoride	<0.0100	mg/L	0.0100	0.00400				
Sulfate	<1.00	mg/L	1.00	0.400				

Analysis Method: E300.0, Anions

Method Reporting Limit Check (1245442)

Parameter	Units	Spiked Amount		% Spike Recovery	
Fluoride	mg/L	.01	.01	124	50 - 150
Sulfate	mg/L	1	.92	91.9	50 - 150

Laboratory Fortified Blank (1245443)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %
oride	mg/L	1	.99	98.7	90 - 110
Sulfate	mg/L	30	30.1	100	90 - 110

Limit of Quantitation Check (1245444)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %
Fluoride	mg/L	.02	.02	86	70 - 130
Sulfate	mg/L	5	4.34	86.7	70 - 130

Laboratory Fortified Matrix (1245448) Original: Q1924410001; Lab Fortified Matrix Duplicate (1245449)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %
Fluoride	mg/L	1	1.71	107	80 - 120	1.64	99.4	4.18	20
Sulfate	mg/Ŀ	20	46.9	101	80 - 120	46.5	98.2	.857	20

v.12.7.0



Preparation Batch: WET	/ 19698		Analys	sis Method	: SM2540	DC, TDS
Preparation Method: SM25	540C, TDS					
Associated Lab IDs: Q191	7642001			đ		
Method Blank (1238346)						
Parameter	Results	Units	MRL	LOD	Qualifier	
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		
Lab Control Sample (1238347)						
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	
Total Dissolved Solids(TDS)	mg/L	400	400	100	80 - 120	
Duplicate (1238409); Original:	Q19175590	006				
Parameter	Original	Duplicate	Units	RPD %	Limit	Qualifier
Total Dissolved Solids(TDS)	336	367	mg/L	8.82	20	
Matrix Spike (1238408) Original	I: Q191755	9006				
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	
Total Dissolved Solids(TDS)	mg/L	400	746	102	70 - 130	



Quality Control Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
Q1917642001	CBL - 301	MEP/9218	SW3010A, Metals Prep
Q1917642002	CBL - 801	MEP/9218	SW3010A, Metals Prep
Q1917642003	EQ Blank	MEP/9218	SW3010A, Metals Prep

Batch Comment(s):

Analytical Curve used from MET batch# 7148

Batch ID: MET/7154 - Analytical Method:SW6010B ICP-AES

Lab ID	Sample ID	Prep Batch	Prep Method	
Q1917642001	CBL - 301	MEP/9218	SW3010A, Metals Prep	
Q1917642002	CBL - 801	MEP/9218	SW3010A, Metals Prep	

Batch Comment(s):

• Used opening QC and Curve from MET 200.7 batch 7150

Batch ID: WET/19698 - Analytical Method:SM2540C, TDS

· · · · ·				
Lab ID	Sample ID	Prep Batch	Prep Method	
Q1917642001	CBL - 301			
Batch ID: WET/19717	- Analytical Method:E300.0, Ar	nions		
Lab ID	Sample ID	Prep Batch	Prep Method	
Q1917642001	CBL - 301			
Batch ID: WET/19749	- Analytical Method:E300.0, An	nions		
Lab ID	Sample ID	Prep Batch	Prep Method	
Q1917642001	CBL - 301			· ·

Q1917642

Environmental Laboratory Services The Solution Lab

7

LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

				or 1-800-776-52	272																					
			2) 356-6021 els.lcra.org																Lab	ID#:						
r				,															Clie	nt PO	:					
	Proje	ect: CCR Well ector: ColfPetri/Erica :	2	Client: Contact:	LCRA						Repo	rt To;			OEVE POWEF	PLAN	т		Invo	ice To		BECKI				
			Dolensen	Contact:									654	9 POW	ER PL	NT RI	5				e	549 P	OWE	RPLA	NT R	
	Ever	nt#: 1442311 / 8499		Phone:											, TX 78	945				**		AIL S. a Gra		FPP TX 78	945	
					Matrix*		C	ontain	er(s) 1	Type/F	reser	vative	/Num	ber *					F	Realing	ested	Anal	veie	*		
	LAB USE ONLY	Sample ID *	Colle Date*	Time * HH:MM	AQ = Aqueous S = Solid T = Tissue DW =Drinking Water	COMPOSITE Y/N	FILTERED Y/N		250PHNO3							2540-AMTDS	6010-AM	F-pH	300.0AM-28				y 013			
ph	1	CBL - 301	5/2/19	1/21	AQ	N	~	1	1		1		1			x	x	X	X							
202		CBL - 801			AQ		1		1								x									
200	3	EQ Blank	L		AQ	1	1		1						C. of Street, St.	to about the	x		a Anna an Anna						A. TIL	
	4						NIDE L																			
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Transfers	Relinquished By	Date/Time	Received By	Date/Time		Coo	ler Temp		Client Special Instructions:	
1	CaltPet	5/2/19 1400	19-2:	5/2/19 1400	#	T#	Obs.	Corr.		
2					1	6	1.31	.(.3"		
3					2				Lab Use	
Note: Re asterisk (elinquishing sample(s) and signing t *) are required to be completed.	he COC, client agrees to accept an	d is bound by the ELS Stand	ard Terms and Condition	is. Al	l fields	with ar		Q1917642 770645	
Page 1 o	f 1								01317642 379645	

		Sample Dat	te: _5/2/19
	ENERGY - WATER - COMMUNITY SERVICES	Sample Tim	ne: <u>1/2/</u>
	Field Information Form	Sample ID:	CBLJOIT
	PURGING	INFORMATION	
	I I	TER VOL IN CASING (Gallons) 3 X WELL VOL. IN (Gallons)	ACTUAL VOLLIME PURGED (Gallons)
	PURGING AND SA	AMPLING EQUIPMENT Sampling EquipmentDedic	ated IYI 🕅
	Sampling Device LA B-Perisataltic Pump E-Ve	as Litf Pump G-Bailer X- enturi Pump H-Scoop/Shovel X- oper/Bottle I-Piston Pump X-	Purging Other (Specify) Sampling Other (Specify)
	Purging Material Sampling Material B-Stainless Steel D-PV	lypropylene E-Polyethylene X- /C X-	Purging Other (Specify)
•		lypropylene F-Silicon X- lyethylene G-Combination X- teflon/Polypropylene X-	Purging Other (Spectfy)
	C-Rope X(Specify)		Sampling Other (Specify)
	FIELD ME	ASUREMENTS	
	Well Elevation (ft/msl)	Land Surface Elevation	(ft/msl)
	Depth to water From top of well casing $=D_w$ 33.911 (ft)	Depth to water From land surface	(ft)
	Groundwater Elevation	Groundwater Elevation	(ft/msl)
	Well Depth = D	Pump Placement	48 (ft)
	Image: Heat Specific Conductivity Image: Heat Specific Conductivity	cm Sample Temp. 2664 (°C))
	Bottle Type Size Preservative	Analysis	Field Filt. Y/N
	Type Size Preservative P 250m HNO3 Metals		
	P 250mL HNO3 Metals CBL 801I	Dup	N
	P 250ml HVO3 Field Blank		N
	Sample Appearance: <u>Clear</u> Odor. <u>Non e</u> Weather Conditions: <u>Partly Cloudy Calm 65</u> Other: <u>Purge water is milkly in Color C</u> Well went dry after 5 gallous. let	learing after 2 gallons No	· · · · · · · · · · · · · · · · · · ·
-	WELL VOLUME CALCULATION	Well Appearance Normal: Yes No	
	$V=(D-D_w)$ (A) (7.48 galtft ³) where	If No, Explain	· · · · · · · · · · · · · · · · · · ·
÷.,	V= volume of standing water in well D= depth to bottom of well below measuring point	Procedure: ELS Ground water:	sop 5-70
[D _w =depth to water below measuring point A= <u>cross-sectio</u> nal area	Date: 5/2/19	/
140	" dia. A= 0.0218 4" dia. A = 0.0872	Sampler: <u>CP/ES</u> Employer: <u>LCRA</u>	······································

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August 13, 2019

BECKIE LOEVE FAYETTE POWER PLANT 6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945 BECKIE.LOEVE@LCRA.ORG

RE: Final Analytical Report Q1949183

Attn: BECKIE LOEVE

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 730-6022. We look forward to assisting you again.

Authorized for release by:

to Canal

Jason Woods Account Manager jason.woods@lcra.org

TNI PBORATORI

Enclosures:

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Sample Summary

LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744 Phone: (512) 730-6022 Fax: (512) 730-6021

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q1949183001	CBL - 301I	AQ	E300.0, Anions	7/31/2019 16:37	8/1/2019 07:30
Q1949183001	CBL - 3011	AQ	Field pH SM4500H+B TCEQ VOL 1	7/31/2019 16:37	8/1/2019 07:30
Q1949183001	CBL - 3011	AQ	SM2540C, TDS	7/31/2019 16:37	8/1/2019 07:30
Q1949183001	CBL - 301I	AQ	SW6010B ICP-AES	7/31/2019 16:37	8/1/2019 07:30
Q1949183002	CBL - 302I	AQ	E300.0, Anions	7/31/2019 14:44	8/1/2019 07:30
Q1949183002	CBL - 3021	AQ	Field pH SM4500H+B TCEQ VOL 1	7/31/2019 14:44	8/1/2019 07:30
Q1949183002	CBL - 302I	AQ	SM2540C, TDS	7/31/2019 14:44	8/1/2019 07:30
Q1949183002	CBL - 3021	AQ	SW6010B ICP-AES	7/31/2019 14:44	8/1/2019 07:30
Q1949183003	CBL - 3061	AQ	E300.0, Anions	7/29/2019 10:55	8/1/2019 07:30
Q1949183003	CBL - 3061	AQ	Field pH SM4500H+B TCEQ VOL 1	7/29/2019 10:55	8/1/2019 07:30
Q1949183003	CBL - 3061	AQ	SM2540C, TDS	7/29/2019 10:55	8/1/2019 07:30
Q1949183003	CBL - 3061	AQ	SW6010B ICP-AES	7/29/2019 10:55	8/1/2019 07:30
Q1949183004	CBL - 308I	AQ	E300.0, Anions	7/31/2019 15:42	8/1/2019 07:30
Q1949183004	CBL - 308I	AQ	Field pH SM4500H+B TCEQ VOL 1	7/31/2019 15:42	8/1/2019 07:30
Q1949183004	CBL - 308I	AQ	SM2540C, TDS	7/31/2019 15:42	8/1/2019 07:30
Q1949183004	CBL - 308I	AQ	SW6010B ICP-AES	7/31/2019 15:42	8/1/2019 07:30

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
MDL - Method Detection Limit
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
Qual - Qualifier
(S) - Surrogate Spike
QC Qual - red font indicates Result Value outside acceptable range
B- Analyte detected in method blank
S - Spike recovery outside limit
R - RPD outside duplicate precision limit
J - Analyte detected below quantitation limit
RPD - Relative Percent Difference



Sample Summary (cont.)

LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744 Phone: (512) 730-6022 Fax: (512) 730-6021

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q1949183005	CBL - 3401	AQ	E300.0, Anions	7/29/2019 10:25	8/1/2019 07:30
Q1949183005	CBL - 3401	AQ	Field pH SM4500H+B TCEQ VOL 1	7/29/2019 10:25	8/1/2019 07:30
Q1949183005	CBL - 3401	AQ	SM2540C, TDS	7/29/2019 10:25	8/1/2019 07:30
Q1949183005	CBL - 340I	AQ	SW6010B ICP-AES	7/29/2019 10:25	8/1/2019 07:30
Q1949183006	CBL - 3411	AQ	E300.0, Anions	7/29/2019 11:40	8/1/2019 07:30
Q1949183006	CBL - 341I	AQ	Field pH SM4500H+B TCEQ VOL 1	7/29/2019 11:40	8/1/2019 07:30
Q1949183006	CBL - 3411	AQ	SM2540C, TDS	7/29/2019 11:40	8/1/2019 07:30
Q1949183006	CBL - 3411	AQ	SW6010B ICP-AES	7/29/2019 11:40	8/1/2019 07:30
Q1949183007	CBL - 6411	AQ	E300.0, Anions	7/29/2019 11:40	8/1/2019 07:30
Q1949183007	CBL - 6411	AQ	SM2540C, TDS	7/29/2019 11:40	8/1/2019 07:30
Q1949183007	CBL - 6411	AQ	SW6010B ICP-AES	7/29/2019 11:40	8/1/2019 07:30
Q1949183008	EQB	AQ	E300.0, Anions	7/29/2019 11:50	8/1/2019 07:30
Q1949183008	EQB	AQ	SM2540C, TDS	7/29/2019 11:50	8/1/2019 07:30
Q1949183008	EQB	AQ	SW6010B ICP-AES	7/29/2019 11:50	8/1/2019 07:30
Q1949183009	FB	AQ	E300.0, Anions	7/29/2019 11:40	8/1/2019 07:30
Q1949183009	FB	AQ	SM2540C, TDS	7/29/2019 11:40	8/1/2019 07:30
Q1949183009	FB	AQ	SW6010B ICP-AES	7/29/2019 11:40	8/1/2019 07:30



Project Summary

Sample Analysis Comments

Lab ID: Q1949183001 Sample ID: CBL - 3011

Not Accredited - pH

Lab ID: Q1949183002 Sample ID: CBL - 302I

Not Accredited - pH

Lab ID: Q1949183003 Sample ID: CBL - 306I
• Not Accredited - pH

Lab ID: Q1949183004 Sample ID: CBL - 308I

Not Accredited - pH

Lab ID: Q1949183005 Sample ID: CBL - 3401

Not Accredited - pH

Lab ID: Q1949183006 Sample ID: CBL - 3411

Not Accredited - pH

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Analytical Results

Lab ID: Q19	949183001		Date F	Received	: 8/1/20	019 07:	30	Ma	atrix: Aqueous		
Sample ID: CBL	3011		Date C	Collected	: 7/31/2	2019 16	6:37 Sa	mple T	ype: SAMPLE		
Project ID: FPP	9 GWMP CCR										
Parameter		Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
Field Parameters	(Field pH SM450	00H+B TCEQ VOL 1)									11. 11.
рН		6.19 pH				1		CC P	08/05/19 16:08	CC P	*
INORGANICS (E	300.0, Anions)										H.
Chloride		2240 mg/L	50.0	20.0		50	08/02/19 06:56	FO	08/02/19 03:55	FO	
Fluoride		0.0510 mg/L	0.0500			5	08/02/19 16:30	FO	08/02/19 14:32	FO	
Sulfate		332 mg/L	50.0	20.0		50	08/02/19 06:56	FO	08/02/19 03:55	FO	
INORGANICS (SI	W3010A, Metals F	Prep/SW6010B ICP-AE	S)					nteven 1200en			
Boron Total		<0.0500 mg/L	0.0500	0.0200		1	08/08/19 09:28	ME	08/12/19 15:25	FM	
Calcium Total		783 mg/L	1.00	0.350		5	08/08/19 09:28	ME	08/12/19 15:32	FΜ	
TOTAL DISSOLVE	D SOLIDS (SM2	540C, TDS)									
Total Dissolved Solids(TDS)		6040 mg/L	250	250		100	08/05/19 09:43	AD G	08/05/19 14:29	AD G	

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Analytical Results (cont.)

Lab ID: Q1949183002	2	Date F	Received	: 8/1/2019	9 07:	30	Ma	atrix: Aqueous		
Sample ID: CBL - 302I		Date C	Collected	: 7/31/201	19 14	1:44 Sar	nple T	ype: SAMPLE		
Project ID: FPP GWMP C	CR									
Parameter	Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
Field Parameters (Field pl	H SM4500H+B TCEQ VOL 1)						ine generation			
рН	6.15 pH				1		CC P	08/05/19 16:06	CC P	*
INORGANICS (E300.0, Ani	ions)							sen a balanta		
Chloride	1540 mg/L	50.0	20.0		50	08/02/19 06:56	FO	08/02/19 01:52	FO	
Fluoride	0.0605 mg/L	0.0500			5	08/02/19 16:30	FO	08/02/19 14:14	FO	
Sulfate	1260 mg/L	50.0	20.0		50	08/02/19 06:56	FO	08/02/19 01:52	FO	
INORGANICS (SW3010A, I	Metals Prep/SW6010B ICP-A	ES)								
Boron Total	<0.0500 mg/L	0.0500	0.0200		1	08/08/19 09:28	ME	08/12/19 15:39	FM	
Calcium Total	914 mg/L	1.00	0.350		5	08/08/19 09:28	ME	08/12/19 15:46	FM	
TOTAL DISSOLVED SOLIDS	(SM2540C, TDS)									
Total Dissolved Solids(TDS)	4190 mg/L	250	250		100	08/05/19 09:43	AD G	08/05/19 14:29	AD G	



Analytical Results (cont.)

Parameter	Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
Project ID: FPP GWMP CCR										
Sample ID: CBL - 306I		Date C	Collected	l: 7/29/	2019 10):55	Sample	Type: SAMPLE		
Lab ID: Q1949183003		Date F	Received	1: 8/1/2	019 07:	30	M	atrix: Aqueous		

Field Parameters (Field	pH SM4500H+B TCEQ VOL	1)							ġ.
рН	6.92 рН			- 1		CC P	08/05/19 16:08	CC P	*
INORGANICS (E300.0, A	Anions)								
Chloride	538 mg/L	50.0	20.0	50	08/02/19 06:56	FO	08/02/19 04:30	FO	
Fluoride	9.26 mg/L	0.500	0.200	50	08/02/19 06:56	FO	08/02/19 04:30	FO	
Sulfate	816 mg/L	50.0	20.0	50	08/02/19 06:56	FO	08/02/19 04:30	FO	
INORGANICS (SW3010)	A, Metals Prep/SW6010B ICP-	AES)							
Boron Total	0.0824 mg/L	0.0500	0.0200	1	08/08/19 09:28	ME	08/12/19 15:53	FM	
Calcium Total	106 mg/L	0.200	0.0700	1	08/08/19 09:28	ME	08/12/19 15:53	FM	
TOTAL DISSOLVED SOLI	DS (SM2540C, TDS)								
Total Dissolved Solids(TDS)	676 mg/L	25.0	25.0	10	08/02/19 11:12	ML	08/02/19 11:57	ML	



Analytical Results (cont.)

Lab ID: Q1949183004	Date Received: 8/1/2019 07:30	Matrix: Aqueous	
Sample ID: CBL - 308I	Date Collected: 7/31/2019 15:42	Sample Type: SAMPLE	
Project ID: FPP GWMP CCR			

Parameter	Results	Units MRL	LOD	ML DF	Prepared	Ву	Analyzed	Ву	Qual
Field Parameters	(Field pH SM4500H+B TC	EQ VOL 1)		REARING				a la	
рН	6.25	5 рН		1		CC P	08/05/19 16:07	CC P	; *
INORGANICS (E	300.0, Anions)								
Chloride	2290) mg/L 50.0	20.0	50	08/02/19 06:56	FO	08/02/19 05:06	FO	
Fluoride	1.62	mg/L 0.500	0.200	50	08/02/19 06:56	FO	08/02/19 05:06	FO	
Sulfate	1420) mg/L 50.0	20.0	50	08/02/19 06:56	FO	08/02/19 05:06	FO	
INORGANICS (S	W3010A, Metals Prep/SW60	10B ICP-AES)							
Boron Total	<0.0500	mg/L 0.0500	0.0200	1	08/08/19 09:28	ME	08/12/19 16:06	FM	
Calcium Total	840	mg/L 1.00	0.350	5	08/08/19 09:28	ME	08/12/19 16:13	FM	
TOTAL DISSOLVE	D SOLIDS (SM2540C, TDS)								
Total Dissolved Solids(TDS)	5820	mg/L 250	250	100	08/05/19 09:43	AD G	08/05/19 14:29	AD G	

1



Analytical Results (cont.)

Lab ID: Q1949183005 Sample ID: CBL - 340I		Date Received: 8/1/2019 07:30 Date Collected: 7/29/2019 10:25 Sa						Matrix: Aqueous Sample Type: SAMPLE		
Project ID: FPP GWMP CCR		Date e	oncolou	. 17207	2010 1	5.20		ype. or win LL		
Parameter	Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
Field Parameters (Field pH SM4	500H+B TCEQ VOL 1)		and some				1.3.00		Ang ang	48. 1
pН	6.45 рн				1		CC P	08/05/19 16:06	CC P	*
INORGANICS (E300.0, Anions)										
Chloride	2280 mg/L	50.0	20.0		50	08/02/19 06:5	6 FO	08/02/19 05:41	FO	
Fluoride	0.880 mg/L	0.500	0.200		50	08/02/19 06:5	6 FO	08/02/19 05:41	FO	
Sulfate	684 mg/L	50.0	20.0		50	08/02/19 06:5	6 FO	08/02/19 05:41	FO	

B = + +	0.404	0.0500	0.0000	4	00/00/40 00:00		00/40/40 40:00	E M
Boron Total	0.124 mg/L	0.0500	0.0200	1	08/08/19 09:28	IVIE	08/12/19 16:20	FM
Calcium Total	518 mg/L	1.00	0.350	5	08/08/19 09:28	ME	08/12/19 16:26	FM

250

250

5560 mg/L

100 08/02/19 11:12 ML 08/02/19 11:57

Total Dissolved Solids(TDS) ML



Analytical Results (cont.)

Lab ID: Q1949183006	6	Date F	Received	: 8/1/20	019 07:	30	Ma	atrix: Aqueous		
Sample ID: CBL - 341I		Date C	Collected	: 7/29/2	2019 11	:40 Sar	nple T	ype: SAMPLE		
Project ID: FPP GWMP (CCR									
Parameter	Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
Field Parameters (Field p	H SM4500H+B TCEQ VOL 1	y					NGLAL.		1950	
pH	6.23 рН				1		CC P	08/05/19 16:05	CC P	*
INORGANICS (E300.0, An	ions)				12.2					
INORGANICS (E300.0, An Chloride	<i>ions)</i> 1650 ₪g/∟	25.0	10.0		25	08/02/19 06:56	FO	08/02/19 05:58	FO	
		25.0 0.0500	0.0200		25 5	08/07/19 08:24	FO FO	08/06/19 10:15	FO	
Chloride	1650 mg/∟									
Chloride Fluoride Sulfate	1650 mg/L 0.100 mg/L	0.0500 25.0	0.0200		5	08/07/19 08:24	FO	08/06/19 10:15	FO	
Chloride Fluoride Sulfate INORGANICS (SW3010A,	1650 mg/L 0.100 mg/L 329 mg/L	0.0500 25.0	0.0200 10.0		5	08/07/19 08:24	FO	08/06/19 10:15 08/02/19 05:58	FO	
Chloride Fluoride Sulfate <i>INORGANICS (SW3010A,</i> Boron Total	1650 mg/L 0.100 mg/L 329 mg/L Metals Prep/SW6010B ICP-,	0.0500 25.0 AES)	0.0200 10.0		5 25	08/07/19 08:24 08/02/19 06:56	FO FO ME	08/06/19 10:15 08/02/19 05:58	FO FO	
Chloride Fluoride Sulfate	1650 mg/L 0.100 mg/L 329 mg/L Metals Prep/SW6010B ICP-J <0.0500 mg/L 714 mg/L	0.0500 25.0 4ES) 0.0500	0.0200 10.0 0.0200		5 25 1	08/07/19 08:24 08/02/19 06:56 08/08/19 09:28	FO FO ME	08/06/19 10:15 08/02/19 05:58 08/12/19 16:33	FO FO	



Analytical Results (cont.)

Lab ID: Sample ID:	Q1949183007 CBL - 641I			Received Collected					atrix: Aqueous jype: SAMPLE		
Project ID:	FPP GWMP CO	CR	si.		Б						
Parameter		Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
INORGANICS	(E300.0, Anic	ons)					delenande a del			i dhia	
Chloride		1640 mg/L	25.0	10.0		25	08/02/19 06:56	FO	08/02/19 06:16	FO	
Fluoride		0.0960 mg/L	0.0500	0.0200		5	08/07/19 08:24	FO	08/06/19 10:33	FO	
Sulfate		327 mg/L	25.0	10.0		25	08/02/19 06:56	FO	08/02/19 06:16	FO	
INORGANICS	(SW3010A, N	letals Prep/SW6010B ICP-A	ES)		nie odrej					en e	
Boron Total		<0.0500 mg/L	0.0500	0.0200		1	08/08/19 09:28	ME	08/12/19 16:47	FM	
Calcium Total		753 mg/L	1.00	0.350		5	08/08/19 09:28	ME	08/12/19 16:55	FM	
TOTAL DISSOL	VED SOLIDS	(SM2540C, TDS)									a .
Total Dissolved		5510 mg/L	250	250		100	08/02/19 11:12	ML	08/02/19 11:57	ML	

Solids(TDS)



Analytical Results (cont.)

Lab ID:	Q1949183008		Date F	Received	: 8/1/2	2019 07:	30	Ма	atrix: Aqueous		
Sample ID:	EQB		Date 0	Collected	: 7/29	/2019 11	:50 Sar	nple T	ype: SAMPLE		
Project ID:	FPP GWMP CC	R									
Parameter		Results Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qual
INORGANICS	(E300.0, Anioi			LOD	IAIF		Flepaleu	By	Analyzeu	Бу	Quai
Chloride		<1.00 mg/L	1.00	0.400		1	08/02/19 06:56	FO	08/02/19 03:38	FO	
Fluoride		<0.0100 mg/L	0.0100	0.0040		1	08/02/19 06:56	FO	08/02/19 03:38	FO	
Sulfate		<1.00 mg/L	1.00	0.400		1	08/02/19 06:56	FO	08/02/19 03:38	FO	
INORGANICS	(SW3010A, Me	etals Prep/SW6010B ICP-AES	5)			and the second					
Boron Total		<0.0500 mg/L	0.0500	0.0200		1	08/08/19 09:28	ME	08/12/19 17:02	FM	
Calcium Total		<0.200 mg/L	0.200	0.0700		1	08/08/19 09:28	ME	08/12/19 17:02	FM	
TOTAL DISSO	LVED SOLIDS	(SM2540C, TDS)									
Total Dissolved Solids(TDS)	d	<25.0 mg/L	25.0	25.0		10	08/02/19 11:12	ML	08/02/19 11:57	ML	



Analytical Results (cont.)

Lab ID:	Q1949183009		Date F	Received	8/1/20	019 07:	30	Matrix: Aqueous			
Sample ID:	FB		Date C	Collected	7/29/2	2019 11	:40 Sar	nple T	ype: SAMPLE		
Project ID:	FPP GWMP CCR										
s											
Parameter		Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
INORGANICS	(E300.0, Anions)										
Chloride	2	<1.00 mg/L	1.00	0.400		1	08/02/19 06:56	FO	08/02/19 08:02	FO	
Fluoride		<0.0100 mg/L	0.0100	0.0040		1	08/02/19 06:56	FO	08/02/19 08:02	FO	
Sulfate		<1.00 mg/L	1.00	0.400		1	08/02/19 06:56	FO	08/02/19 08:02	FO	
INORGANICS	(SIM2010A Motals	Pron/SW/6010B ICP-A	FSI								

INORGANICS (SW3010A, M	letals Prep/SW6010B ICP-	AES)	and and the states	The starts	-active Secondaria	and the second s	enter induse
Boron Total	<0.0500 mg/L	0.0500	0.0200	1	08/08/19 09:28	ME 08/12/19 17:15	FM
Calcium Total	<0.200 mg/L	0.200	0.0700	1	08/08/19 09:28	ME 08/12/19 17:15	FM
TOTAL DISSOLVED SOLIDS	(SM2540C, TDS)						
Total Dissolved	39.0 mg/L	25.0	25.0	10	08/02/19 11:12	ML 08/02/19 11:57	ML

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Solids(TDS)



Quality Control

Preparation Batch: WE	T / 20236		Analys	sis Method	E300.0, /	Anions			
Preparation Method: E30	0.0, Anions								
Associated Lab IDs: Q19	49183001. C	1949183002	2. Q194918	33006, Q194	9183007				
								The surger of the last fields	
Laboratory Reagent Blank (13	302924)						and a subscript of	al destado	a the second second second
Parameter	Results	Units	MRL	LOD	Qualifier				
Fluoride	<0.0100	mg/L	0.0100	0.00400					
Method Reporting Limit Chec	k (1302926)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %				<u> </u>
Fluoride	mg/L	.01	.01	119	50 - 150				
Laboratory Fortified Blank (13	302927)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %				
Fluoride	mg/L	1	1.04	104	90 - 110				
Limit of Quantitation Check(1302928)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %				
Fluoride	mg/L	.02	.02	98	70 - 130				
Laboratory Fortified Matrix (1	302933) Orig	inal: Q1949	892001; L	ab Fortified.	Matrix Dup	olicate (13	02934)		
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %
Fluoride	mg/L	1	1.17	103	80 - 120	1.18	104	.851	20



Preparation Batch: WE	T / 20232		Analys	sis Method	: SM2540	DC, TDS
Preparation Method: SM2	2540C, TDS					
Associated Lab IDs: Q19	49183003, 0	21949183005	, Q194918	33006, Q194	9183007, (Q1949183008, Q1949183009
Method Blank (1302620)	Landa en			and a second	an aiba a	
Parameter	Results	Units	MRL	LOD	Qualifier	
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		
Lab Control Sample (1302621	IJ					
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	
Total Dissolved Solids(TDS)	mg/L	400	390	97.5	80 - 120	
Matrix Spike (1302636) Origin	al: Q194977	1004				
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	
Total Dissolved Solids(TDS)	mg/L	400	928	111	70 - 130	
Duplicate (1302637); Original	: Q19497710	004				
Parameter	Original	Duplicate	Units	RPD %	Limit	Qualifier
Total Dissolved Solids(TDS)	484	492	mg/L	1.64	20	



Preparation Batch: WET	/ 20238		Analys	sis Method	: SM2540	DC, TDS
Preparation Method: SM2	540C, TDS					
Associated Lab IDs: Q194	49183001, C	1949183002	, Q194918	33004		
Method Blank (1303018)						
Parameter	Results	Units	MRL	LOD	Qualifier	
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		
Lab Control Sample (1303019)						
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	
Total Dissolved Solids(TDS)	mg/L	400	367	91.8	80 - 120	
Duplicate (1303022); Original:	Q19487550	002				
Parameter	Original	Duplicate	Units	RPD %	Limit	Qualifier
Total Dissolved Solids(TDS)	542	587	mg/L	7.97	20	
Matrix Spike (1303021) Origina	al: Q194875	5002				
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	
Total Dissolved Solids(TDS)	mg/L	400	1000	115	70 - 130	



Preparation Batch: W	ET / 20251	9. 1	Analys	sis Method	: E300.0, /	Anions			-
Preparation Method: E3	00.0, Anions								
Associated Lab IDs: Q1	949183006, Q	1949183007	×						
Laboratory Reagent Blank (1304853)								
Parameter	Results	Units	MRL	LOD	Qualifier				
Fluoride	<0.0100	mg/L	0.0100	0.00400					
Method Reporting Limit Che	eck (1304855)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %				
Fluoride	mg/L	.01	.01	113	50 - 150				
Laboratory Fortified Blank (1304856)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %				
Fluoride	mg/L	1	1.02	102	90 - 110				
Limit of Quantitation Check	(1304857)								
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %				P
Fluoride	mg/L	.02	.02	102	70 - 130				
Laboratory Fortified Matrix (1304863) Orig	inal: Q1950	505001; L	ab Fortified.	Matrix Dup	olicate (13	04864)		
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %
Fluoride	mg/L	1	1.17	99.1	80 - 120	1.17	99.4	0	20



Quality Control (cont.)

Preparation Batch: WET / 20228 Preparation Method: E300.0, Anions Analysis Method: E300.0, Anions

Associated Lab IDs: Q1949183001, Q1949183002, Q1949183003, Q1949183004, Q1949183005, Q1949183006, Q1949183007, Q1949183008, Q1949183009

Parameter Units Spiked Spike % Spike Control Amount Result Recovery Limits %
Amount Result Recovery Limits %
Chloride mg/L 1 .69 68.6 50 - 150
Fluoride mg/L .01 .01 110 50 - 150
Sulfate mg/L 1 .83 82.6 50 - 150

Limit of Quantitation Check (1301903)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %
Chloride	mg/L	5	4.14	82.8	70 - 130
Fluoride	mg/L	.02	.02	93	70 - 130
Sulfate	mg/L	5	4.34	86.7	70 - 130

Laboratory Reagent Blank (1301907)

Parameter	Results	Units	MRL	LOD	Qualifier	х.
Chloride	<1.00	mg/L	1.00	0.400		
Sulfate	<1.00	mg/L	1.00	0.400		

Laboratory Fortified Blank (1301908)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %
ride	mg/L	30	30.6	102	90 - 11
Sulfate	mg/L	30	30.5	102	90 - 110

Laboratory Fortified Matrix (1301917) Original: Q1949122001; Lab Fortified Matrix Duplicate (1301918)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %
Chloride	mg/L	20	49.2	95.6	80 - 120	49.2	95.5	0	20
Sulfate	mg/L	20	75.7	86.5	80 - 120	75.7	86.5	0	20

Laboratory Reagent Blank (1301910)

Parameter	Results	Units	MRL	LOD	Qualifier
Chloride	<1.00	mg/L	1.00	0.400	
Fluoride	<0.0100	mg/L	0.0100	0.00400	
Sulfate	<1.00	mg/L	1.00	0.400	

Laboratory Fortified Blank (1301911)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %
Chloride	mg/L	30	30.4	101	90 - 110
Fluoride	mg/L	1	1.02	102	90 - 110
Sulfate	mg/L	30	30.2	101	90 - 110

Laboratory Fortified Matrix (1301919) Original: Q1949183008; Lab Fortified Matrix Duplicate (1301920)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %
Chloride	mg/L	20	19.7	98.7	80 - 120	19.6	98.1	.509	20
Fluoride	mg/L	1	1.01	101	80 - 120	1	100	.995	20
									POWERED BY



Quality Control (cont.)

Preparation Batch: WET / 20228

Analysis Method: E300.0, Anions

Preparation Method: E300.0, Anions

Associated Lab IDs: Q1949183001, Q1949183002, Q1949183003, Q1949183004, Q1949183005, Q1949183006, Q1949183007, Q1949183008, Q1949183009

(continued)										
Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	Qual
Sulfate	mg/L	20	19.4	97	80 - 120	19.3	96.5	.517	20	

Laboratory Reagent Blank (1301913)

	Resident Ch. Statement Market Statements and	the loss of the Street Black of the	and the second sec	and the state of the	
Parameter	Results	Units	MRL	LOD	Qualifier
Chloride	<1.00	mg/L	1.00	0.400	
Fluoride	< 0.0100	mg/L	0.0100	0.00400	
Sulfate	<1.00	mg/L	1.00	0.400	

Laboratory Fortified Blank (1301914)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %
Chloride	mg/L	30	30.7	102	90 - 110
Fluoride	mg/L	1	1.04	104	90 - 110
Sulfate	mg/L	30	30.7	102	90 - 110

Laboratory Fortified Matrix (1301921) Original: Q1949183009; Lab Fortified Matrix Duplicate (1301922)

Aire and a second s		Spiked	Spike	% Spike	Control	Dup	% Dup		RPD
Parameter	Units	Amount Result		Recovery Limits %		Result	Recovery	RPD	Limit %
Chloride	mg/L	20	19.7	98.5	80 - 120	19.7	98.6	0	20
Fluoride	mg/L	1	1.01	101	80 - 120	1.01	101	0	20
Sulfate	mg/L	20	19.4	97.1	80 - 120	19.4	97	0	20



Quality Control (cont.)

Preparation Batch: MEP / 9473

Analysis Method: SW6010B ICP-AES

Preparation Method: SW3010A, Metals Prep

Associated Lab IDs: Q1949183001, Q1949183002, Q1949183003, Q1949183004, Q1949183005, Q1949183006, Q1949183007, Q1949183008, Q1949183009

Lab Control Sample (1306799); Lab Control Sample Duplicate (1306800)										
Parameter	i	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %
Boron Total Calcium Total		mg/L mg/L	1 10	.94 10.5	94.1 105	80 - 120 80 - 120	.93 10.5	93 105	1.18 0	20 20

Method Blank (1306801)

Parameter	Results	Units	MRL	LOD	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200	
Calcium Total	<0.200	mg/L	0.200	0.0700	

Matrix Spike (1306802) Original: Q1949183001; Matrix Spike Duplicate (1306803)

Parameter	Units	Spiked Amount	Spike Result	% Spike Recovery	Control Limits %	Dup Result	% Dup Recovery	RPD	RPD Limit %	
Boron Total	mg/L	1	1.04	104	75 - 125	1.02	102	1.94	20	S
Calcium Total	mg/L	10	1010	2240	75 - 125	1010	2270	0	20	



Quality Control Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method	
Q1949183001	CBL - 301I	MEP/9473	SW3010A, Metals Prep	
Q1949183002	CBL - 3021	MEP/9473	SW3010A, Metals Prep	
Q1949183003	CBL - 3061	MEP/9473	SW3010A, Metals Prep	
Q1949183004	CBL - 308I	MEP/9473	SW3010A, Metals Prep	
Q1949183005	CBL - 340I	MEP/9473	SW3010A, Metals Prep	
Q1949183006	CBL - 3411	MEP/9473	SW3010A, Metals Prep	
Q1949183007	CBL - 6411	MEP/9473	SW3010A, Metals Prep	
Q1949183008	EQB	MEP/9473	SW3010A, Metals Prep	
Q1949183009	FB	MEP/9473	SW3010A, Metals Prep	
Batch ID: WET/20228	- Analytical Method:E300.0, An	nions		
Lab ID	Sample ID	Prep Batch	Prep Method	
Q1949183001	CBL - 3011			

Q1949183001	CBL - 301I		
Q1949183002	CBL - 3021		
Q1949183003	CBL - 306I		
Q1949183004	CBL - 308I		
Q1949183005	CBL - 340I		
Q1949183006	CBL - 3411		
Q1949183007	CBL - 6411		
Q1949183008	EQB		
Q1949183009	FB		

Batch ID: WET/20232 - Analytical Method:SM2540C, TDS

Lab ID	Sample ID	Prep Batch	Prep Method	
Q1949183003	CBL - 306I			
Q1949183005	CBL - 340I			
Q1949183006	CBL - 3411			
Q1949183007	CBL - 6411			
21949183008	EQB			
Q1949183009	FB			

Batch ID: WET/20236 - Analytical Method:E300.0, Anions

Lab ID	Sample ID	Prep Batch	Prep Method	
Q1949183001	CBL - 301I			
Q1949183002	CBL - 3021			
Q1949183006	CBL - 3411			
Q1949183007	CBL - 6411			

Batch ID: WET/20238 - Analytical Method:SM2540C, TDS

Lab ID	Sample ID	Prep Batch	Prep Method	
Q1949183001	CBL - 301I			
Q1949183002	CBL - 3021			
Q1949183004	CBL - 308I			

Batch ID: WET/20251 - Analytical Method:E300.0, Anions

Lab ID	Sample ID	Prep Batch	Prep Method	
Q1949183006	CBL - 341I			
Q1949183007	CBL - 6411			

LCRA Environmental Laboratory Services

Q1949183

Lab ID#:

Request for Analysis Chain-of-Custody Record

LCRA - Environmental Lab
3505 Montopolis Dr.
Austin, TX 78744

Phone: (512) 730-6022 or 1-800-776-5272 Fax: (512) 356-6021 https://els.lcra.org



		-				Client PO:	
Project:	FPP - CCR - Groundwater	Client:	LCRA	Report To:	BECKIE LOEVE	Invoice To:	BECKIE LOEVE
Collector:	Jusen Woods / Colt Petri	Contact:	Jason Woods		FAYETTE POWER PLANT		FAYETTE POWER PLANT
	<u></u>				6549 POWER PLANT RD MAIL STOP FPP		6549 POWER PLANT RD
Event#:	1432240 / 9088	Phone:	(512)730-5339		La Grange, TX 78945		MAIL STOP FPP
		1			ea orange, in 10040		La Grange, TX 78945

	7					Container(s) Type/Preservative/Number *						Requested Analysis *											٦		
	AB USE ONL		Collec	cted *	AQ = Aqueous S = Solid T = Tissue DW =Drinking Water	COMPOSITE Y/N	TERED Y/N	-	HNO3					-AMTDS	-AM		300.0AM-28								_
	P	Sample ID *	Date*	Time * HH:MM		CON	FILT	1LPU	250PI					2540	6010-	F-pH	300.0								
cu	1	CBL - 3011	7/3/19	1637	AQ	N	N	1	1					х	х	х	х								
J	2	CBL - 3021	7/31/19	1444	AQ	T	1	1	1					х	Х	х	X								
C	53	CBL - 306I	7/29/19	1055	AQ			1	1					х	х	Х	х								
60	×4	CBL - 3081	7/31/19	1542	AQ			1	1					х	х	x	х								-
S	5 כ	CBL - 3401	7/29/19	1025	AQ	N	N	1	1					х	х	х	х							+	-
3	6	CBL - 3411	7/29/19	1140	AQ			1	1					х	х	х	х								
U.	7	CBL - 6411	7/29/19	1140	AQ			1	1					х	х		х								
008	8	EQB	7/29/19	1150	AQ			1	1						х										-
60	9	FB	7/29/19	1140	AQ	4		1	1						х								-		-

1 CallPcture 8/1/9 730 P_2: 8/1/9 730 # T# Obs. Corr. 2 1 G 2/1 1/1 G 2/1 1/1 3 2 1 G 2/1 1/1 1/1 Note: Relinquishing sample(s) and signing the COC, client agrees to accept and is bound by the ELS Standard Terms and Conditions. All fields with an asterisk (*) are required to be completed. 01949183	Transfers	Relinquished By	Date/Time	Received By	Date/Time		Coo	ler Temp		Client Special Instructions:
3 2 Lab U Note: Relinquishing sample(s) and signing the COC, client agrees to accept and is bound by the ELS Standard Terms and Conditions. All fields with an asterisk (*) are required to be completed.	1	CaltPetr	8/1/9 730	8-2.	8/1/19 730	#	T#	Obs.	Corr.	
01949183	2					1	G	212	316	
01949183	3	-	1		-	2				Lab U
	Note: Reli asterisk (*)	nquishing sample(s) and signing th are required to be completed.	he COC, client agrees to accept an	d is bound by the ELS Stand	ard Terms and Condition	ns. All	fields	with ar)	01949183

ENERGY - WATER - COMMUNITY SERVICES			Samp Samp	ole Date: ole Time: de ID:	<u>– 7/31/16</u> [C]_BL_3011 II
	PL	JRGING INFORMATIO	N		
URGE DATE (YY MM DD)	[] 3]] 5] START PURGE (2400 Hr. Clock)	V= 3,5 WATER VOL IN CASING (Gallons)	3 X WELL VOL IN (Gallons)		ACTUAL VOLUME PURGED (Gallons)
Purging Equipment	PURGING Dedicated Y (N)	AND SAMPLING EQ Sampl	UIPMENT ling Equipment	Dedicate	ed (Y) INI
Purging Device	A-Submersible Pump B-Perisataltic Pump C-Bladder Pump	D-Gas Litf Pump E-Venturi Pump F-Dipper/Bottle	G-Bailer H-Scoop/Shovel I-Piston Pump	X X	Purging Other (Specify) Sampling Other (Specify)
Purging Material	_ A-Teflon _ B-Stainless Steel	C-Polypropylene D-PVC	E-Polyethylene	X X	Purging Other (Specify)
Tubing-Purging	_ A-Teflon 」 B-Tygon	D-Polypropylene E-Polyethylene	F-Silicon G-Combination teflon/Polypropylene	X X X-	Sampling Other (Specify) Purging Other (Specify)
	C-Rope X	ecify)		<u> </u>	Sampling Other (Specify)
Well Elevation	FIE	(ft/msl) Land Sur	S face Elevation		(ft/msl)
Depth to water From top of well casing =	D_{w} $[32.70]$	(ft) Depth to From land			(ft)
Groundwater Elevation Well Depth = D	5410	(ft) Pump Pla	ater Elevation		(ft/msl) 15 [2] (ft)
6, (1 9) (STI	D) L 767 Specific Conductiv		ble Temp. 2444	°C)	
Bottle		Analysis		Fi	ield Filt.Y/N
TypeSizePreservatP250nLHUO3P500nLICEP500nLICE	ive Metals Anions				N
other. Purge water Purged well dry af	neasuring point	Wind 5-10,40 ote Turning C Lettett Sa Well Appeara If No, Explain Procedure: E Date:	<u>lear after 49</u> Me w/beite nce Normal: Yes <u>k</u>	<u>ailon 5</u> 	
dia. $A = 0.0218$ 4" dia. $A = 0.0218$	872	Sampler: <u> </u>	LCRT		

LCRA
ENERGY • WATER • COMMUNITY SERVICES

Field Information Form

Sample Date: 7/3//19

Sample Time: <u>1444</u> Sample ID: <u>444</u>

	PURGING INFORMA	TION	
190731 1406 PURGE DATE (YY MM DD) START PURGE (2400 Hr. Clock)	V= AND		5 N ACTUAL VOLUME PURGED (Gallons)
PU Purging EquipmentDedicated الم	RGING AND SAMPLING I	EQUIPMENT npling Equipment	Dedicated
Purging Device LB_ A-Submersible Sampling Device LB_ B-Perisataltic F C-Bladder Pun	Pump E-Venturi Pump	o G-Bailer H-Scoop/Shovel I-Piston Pump	X Purging Other (Specify) X Sampling Other (Specify)
Purging Material	C-Polypropylene eel D-PVC	· .	X
Tubing-Purging L F A-Teflon Tubing-Sampling L F B-Tygon C-Rope X-	D-Polypropylene E-Polyethylene	e F-Silicon G-Combination teflon/Polypropylene	X Purging Other (Spectfy)
	(Specify)		
Well Elevation	FIELD MEASUREME	NTS Surface Elevation	(ft/msl)
Depth to water From top of well casing = D_w Groundwater Elevation Well Depth = D	(ft) From I Ground	to water and surface dwater Elevation Placement	(ft) (ft/msl)
□[6],1[5] (STD) □[1] PH Spe	6923 uS/cm Sa actific Conductivity	Imple Temp. 21.8	3 (°C)
Bottle Type Size Preservative P 250mL HMDz Metals P 50mL ICE Anions	Analysi	S	Field Filt. Y/N N N
	ior: <u>none</u> c y Calm 105° Vith no oder	color: <u>Clear</u> Turbio	dity: <u>8,76</u>
WELL VOLUME CALCULATION /=(D-D _w) (A) (7.48 galtft ³) where /= volume of standing water in well D= depth to bottom of well below measuring point D _w =depth to water below measuring point = cross sectional area ^p dia. A = 0.0218 4" dia. A = 0.0872	If No, Exp	arance Normal: Yes <u>Y</u> lain :ELS Ground Wa 7/31/10 _CP LCP A	No

ENERGY + WATER - COMMUNITY SERVICES Field Information	Form		Sample Sample - Sample I	Time: 1055
	PU	RGING INFORMATIO	N	
PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= U I I I I I I I I I I I I I I I I I I	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
Purging Equipment		AND SAMPLING EQ Samp	UIPMENT ling EquipmentDe	edicated 🕜 I N I
Purging Device	A-Submersible Pump B-Perisataltic Pump C-Bladder Pump	D-Gas Litf Pump E-Venturi Pump F-Dipper/Bottle	G-Bailer H-Scoop/Shovel I-Piston Pump	X Purging Other (Specify) X Sampling Other (Specify)
Purging Material	A-Teflon B-Stainless Steel	C-Polypropylene D-PVC	E-Polyethylene	XPurging Other (Specify)
Tubing-Purging	_ A-Teflon _ B-Tygon	D-Polypropylene E-Polyethylene	F-Silicon G-Combination teflon/Polypropylene	X- Sampling Other (Specify) X -
	C-Rope X	λ _s	51 15	Sampling Other (Specify)
Depth to water From top of well casing = Groundwater Elevation Vell Depth = D $\underline{ 6 9 2}$ (ST		(ft) Pump Pla	ater Elevation	(°C)
Bottle		Analysis		Field Filt.Y/N
TypeSizePreservaP250HWCP560ICE	3 TDS Mete			
Sample Appearance: Veather Conditions: <u>Pa</u> Other: <u>Parte many</u> Bi Pand is dry WELL VOLU	ity cloudy, 10°, 15 dear w/ ag	10 mph Sane Billor; Well Appears	or: <u>Clear</u> Turbidity	No
=(D-D _w) (A) (7.48 galtft ³) where = volume of standing water in we = depth to bottom of well below wedepth to water below measure cross sectional area dia. A= 0.0218 y" dia. A = 0.	measuring point ring point	If No, Explair Procedure: Date: Sampler: Employer:	ELS-Gronden 129/19 Jason Wood i-CRA	ntr Sol 5-70

				S	Sample Date	e:
ENERGY - WATER - COMMUNITY SERVICES				S	Sample Time	e: <u>1542</u>
Field Information	Form			S	Sample ID:	CIBILIZIOIE
	PU	RGING IN	IFORMATIO	NC		
PURGE DATE (YY MM DD)	5 6 5 START PURGE (2400 Hr. Clock)		/OL IN CASING (Gallons)	3 X WELL (Gallo	5, 7 Vol. IN ns)	ACTUAL VOLUME PURGED (Gailons)
Purging Equipment	Dedicated (Y) I N I	AND SAN		UIPMENT	Dedic	ated
Purging Device	A-Submersible Pump B-Perisataltic Pump C-Bladder Pump		Litf Pump uri Pump er/Bottle	G-Bailer H-Scoop/Shovel I-Piston Pump	X- X-	Purging Other (Specify) Sampling Other (Specify)
Purging Material] A-Teflon] B-Stainless Steel	C-Polyp D-PVC	propylene	E-Polyethylene	X- X-	Purging Other (Specify)
Tubing-Purging	J A-Teflon J B-Tygon	D-Polyp E-Polye	propylene hylene	F-Silicon G-Combination teflon/Polypropy	Х-	Sampling Other (Specify) Purging Other (Specify)
	C-Rope X	cify)	_	teneral olypropy		Sampling Other (Specify)
alan kan di belan kana kana dalam di sebagai kana di kana kana kana kana kana kana kana kan	FIF		UREMENT	S		<u>,</u>
Well Elevation Depth to water From top of well casing =D Groundwater Elevation Well Depth = D (STE)		(ft/msl) (ft) (ft) (ft) uS/cm	Depth to From land Groundw Pump Pla	d surface ater Elevation	 2_ ^{_5} (°C)	(ft/msl)
Bottle			Analysis			Field Filt.Y/N
Type Size Preservati P 252nL HNO3 P 252nL HNO3 P 250nL HNO3 P 550nL ICE	Metals Metals Metals Metals Anions TDS Car Odor: _Y Hy Cloudy Calm	<u>О</u> ир Юпе 105	Col	or: <u>Clear</u> T	urbidity:	
WELL VOLUM	E CALCULATION		Well Appeara	ance Normal: Yes 📝		
=(D-D _w) (A) (7.48 galtft ³) where = volume of standing water in well = depth to bottom of well below n			If No, Explain	ELSGround	water	SOP 5-7D
w=depth to water below measuring cross sectional area ' dia. A= 0.0218 4" dia. A = 0.03			Date: Sampler: Employer:	1/3//19 CP LCRX		

					Sample Dat	te: 1/29/19
ENERGY - WATER - COMMUNITY SERVICES					Sample Tim	
Field Information	n Form				Sample ID:	CBL340
	PL	JRGING IN	IFORMATI	ON		and a share and a second and an an an and a second a sec
URGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)		/OL IN CASING (Gallons)	3 x wei	9.3 L VOL. IN Ilons)	ACTUAL VOLUME PURGED (Gallons)
Purging Equipment		AND SAN		QUIPMENT Iling Equipment	Dedic	cated M NI
Purging Device	A-Submersible Pump B-Perisataltic Pump C-Bladder Pump		Litf Pump uri Pump er/Bottle	G-Bailer H-Scoop/Shov I-Piston Pump	el X- X-	Purging Other (Specify)
Purging Material] A-Teflon] B-Stainless Steel	C-Polyp D-PVC	propylene	E-Polyethylene	× X-	Purging Other (Specify)
Tubing-Purging	A-Teflon B-Tygon	E-Polye	propylene hthylene	F-Silicon G-Combination teflon/Polyprop		Purging Other (Spectfy)
	C-Rope X	ecify)	_			Sampling Other (Specify)
and a submitted of the second seco	FIE	ELD MEAS	UREMENT	S		· · · · · · · ·
Vell Elevation		(ft/msl)	Land Su	rface Elevation		(ft/msl)
Depth to water From top of well casing =	=Dw [] [] [] [] [] [] [] [] [] [] [] [] []	(ft)	Depth to From lan	water Id surface		(ft)
Groundwater Elevation			Groundw	ater Elevation		(ft/msl)
Vell Depth = D	40.14	(ft)	Pump Pla	acement		25 (ft)
<u> 6,4</u> 5 (S ⁻ РН	TD)	US/cm	⁾ Sam	ple Temp. 22	8.04 (°C)
Bottle			Analysis		-	Field Filt.Y/N
Type Size Preserva						A
P 250ml HNC P 500ml ICE		5				
Sample Appearance:	elew Odor:	hone	Col	or: clear	Turbidity:	0:92 pt
Veather Conditions: <u>Po</u> hther: <u>hvye water</u> fab,1,2 cd	Clew Odor: My Cloudy, 10, is clear I ho o	nphSi dov, Co	Inel. Hected	850 Escupies	after f	feld parameters
	ME CALCULATION		Well Appear	ance Normal: Yes	K No)
=(D-D _w) (A) (7.48 galtft ³) where			If No, Explain	n		
 volume of standing water in water depth to bottom of well below 			Procedure:	ELS-Ground	water 2	SOP-5-1D
= depth to bottom of well below ,=depth to water below measu				1/19/19		
cross sectional area			Date: Sampler:	Juson We	oils	
' dia. A= 0.0218 /4" dia. A = 0.	.0872		Employer:	hcRA.		

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ENERGY - WATER - COMMUNITY SERVICES Field Information Form		Sample Date: Sample Time: Sample ID:	7/29/2019 1140 CIBIL 31411
	PURGING INFORMATION		
PURGE DATE (YY MM DD) START PURGE (2400 Hr. Clock)		WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
Purging Equipment Dedicated 🕅	RGING AND SAMPLING EQUIPMENT	tDedicat	ed i 🕥 i N i
Purging Device A-Submersible Sampling Device B-Perisataltic C-Bladder Pu	ump E-Venturi Pump H-Scoop/Sh		Purging Other (Specify) Sampling Other (Specify)
Purging Material LF_ A-Teflon Sampling Material LF_ B-Stainless S	C-Polypropylene E-Polyethyle el D-PVC	ene X X	Purging Other (Specify) Sampling Other (Specify)
Tubing-Purging Tubing-Sampling Tubing-Sampling C Dure V	D-Polypropylene F-Silicon E-Polyethylene G-Combinati teflon/Polyp		Purging Other (Specify) Sampling Other (Specify)
C-Rope X	(Spedfy)		
Well Elevation	FIELD MEASUREMENTS		(ft/msl)
Depth to water From top of well casing =D _w	33 (ft) Depth to water		(ft)
Groundwater Elevation	Groundwater Elevation		(ft/msl)
	$\frac{2}{10}$ (ft) Pump Placement $\frac{1}{10}$ $\frac{9}{3}$ uS/cm Sample Temp.	K 4↓ 0/5 (°C)	<u>745</u> (ft)
Bottle	Analysis	F	ield Filt.Y/N
Type Size Preservative			
P 250 HNO3 Metals P 500 ICE Anions	TOS		N N
P 250 ItNO3 Metals	Distighte - CBL-641		N
P 550 ILE Amons	Apicate - CRL-641	<u>]</u>	N
Veather Conditions: Partly Cloudy other: Pwge weter is clear up	ank#1 - 1140 - EQB-1140 or: None Color: Clew 10mph Sand 40° no oclo, collected after F.	Turbidity:	9,60 Jurs
Stabili ZCM · WELL VOLUME CALCULATION	Well Appearance Normal: Yes	× No	
=(D-D _w) (A) (7.48 galtft ³) where	If No, Explain		
= volume of standing water in well	Procedure: EUS-Ovour	alu alicent	-5-70
= depth to bottom of well below measuring point	-1- al a	and sop	0-10
edepth to water below measuring point	Date:7124119	ÎC	
= cross sectional area	Sampler: V450 n B	War the A	



September 19, 2019

BECKIE LOEVE FAYETTE POWER PLANT 6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945 BECKIE.LOEVE@LCRA.ORG

RE: Final Analytical Report Q1958908

Attn: BECKIE LOEVE

Enclosed are the analytical results for sample(s) received by LCRA Environmental Laboratory Services. Results reported herein conform to the most current NELAP standards, where applicable, unless otherwise narrated in the body of the report. This final report provides results related only to the sample(s) as received for the above referenced work order.

Thank you for selecting ELS for your analytical needs. If you have any questions regarding this report, please contact us at (512) 730-6022. We look forward to assisting you again.

Authorized for release by:

aun hleart

Jason Woods Account Manager jason.woods@lcra.org

TNI FROM TOPH

Enclosures:



Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received
Q1958908001	CBL - 306I	AQ	E300.0, Anions	8/23/2019 11:48	8/23/2019 14:18
Q1958908001	CBL - 306I	AQ	SM2540C, TDS	8/23/2019 11:48	8/23/2019 14:18
Q1958908001	CBL - 306I	AQ	SW6010B ICP-AES	8/23/2019 11:48	8/23/2019 14:18
Q1958908001	CBL - 306I	AQ	TCEQ SOP V1	8/23/2019 11:48	8/23/2019 14:18

Report Definitions

MRL - Minimum Reporting Limit

LOD - Limit of Detection

ML - Maximum Limit - Client Specified

MCL - Maximum Contaminant Level

MDL - Method Detection Limit

LOQ - Limit of Quantitation - Client Specified

DF - Dilution Factor

Qual - Qualifier

(S) - Surrogate Spike

QC Qual - red font indicates Result Value outside acceptable range

B- Analyte detected in method blank

S - Spike recovery outside limit

R - RPD outside duplicate precision limit

J - Analyte detected below quantitation limit

RPD - Relative Percent Difference



Project Summary

Sample Analysis Comments

Lab ID: Q1958908001

08001 Sample ID: CBL - 306I

- Not Accredited Specific Conductance
- Not Accredited Temperature
- Not Accredited pH

LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744 Phone: (512) 730-6022 Fax: (512) 730-6021



Analytical Results

Lab ID: Q1958908001	*	Date R	Date Received: 8/23/2019 14:18 Matrix: Aqueous							
Sample ID: CBL - 3061		Date C	Date Collected: 8/23/2019 11:48					Sample Type: SAMPLE		
Project ID: FPP GWMP C	CR									
Parameter	Results Units	MRL	LOD	ML	DF	Prepared	Ву	Analyzed	Ву	Qual
Field Parameters (TCEQ S	OP V1)				an a		Sud an			
Temperature	27.48 °				1			08/23/19 11:48	KDS	; *
pH	6.83 pH				1			08/23/19 11:48	KDS	*
Specific Conductance	2478 us/cm				1			08/23/19 11:48	KDS	*
INORGANICS (E300.0, Ani	ons)									
Chloride	318 mg/L	10.0	4.00		10			08/27/19 15:53	FO	
Fluoride	2.66 mg/L	0.100	0.0400		10			08/27/19 15:53	FO	
Sulfate	387 mg/L	10.0	4.00		10			08/27/19 15:53	FO	
INORGANICS (SW3010A, I	Metals Prep/SW6010B ICP-A	ES)								44
Boron Total	<0.0500 mg/L	0.0500	0.0200		1	08/27/19 16:39	ME	08/29/19 09:51	FM	
Calcium Total	226 mg/L	0.200	0.0700		1	08/27/19 16:39	ME	08/29/19 09:51	FM	
TOTAL DISSOLVED SOLIDS	(SM2540C, TDS)								in an	
Total Dissolved	1710 mg/L	25.0	25.0		10		7	08/29/19 14:35	ADG	i



Quality Control

Preparation Batch: WE	T / 20393		Analys	sis Method	: SM2540C, TDS
Preparation Method: SM2	2540C, TDS				
Associated Lab IDs: Q19	58908001				
Method Blank (1325772)					
Parameter	Results	Units	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0	
Lab Control Sample (1325773))				
Parameter	Units	Spiked	Spike	Spike	Control
Farameter	Units	Amount	Result	Recovery	Limits
Total Dissolved Solids(TDS)	mg/L	400	415	104	80 - 120
Duplicate (1325775); Original	: Q19606620	002			
Parameter	Original	Duplicate	Units	RPD %	Limit
Total Dissolved Solids(TDS)	331	351	mg/L	5.87	20
Matrix Spike (1325774) Origin	al: Q196066	2002			
Parameter	Units	Spiked	Spike	Spike	Control
Farameter	Units	Amount	Result	Recovery	Limits
Total Dissolved Solids(TDS)	mg/L	400	774	111	70 - 130



Quality Control (cont.)

Preparation Batch: MEP / 9539 Preparation Method: SW3010A, Metals Prep Associated Lab IDs: Q1958908001 Analysis Method: SW6010B ICP-AES

Lab Control Sample (1322461); Lab Control Sample Duplicate (1322462)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit
Boron Total	mg/L	1	1.05	105	80 - 120	1.04	104	.957	20
Calcium Total	mg/L	10	10.9	109	80 - 120	10.9	109	0	20

Method Blank (1322463)

Parameter	Results	Units	MRL	LOD	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200	
Calcium Total	<0.200	mg/L	0.200	0.0700	

Matrix Spike (1322464) Original: Q1958908001; Matrix Spike Duplicate (1322465)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	
Boron Total	mg/L	1	1.12	112	75 - 125	1.12	112	0	20	
Calcium Total	mg/L	10	240	143	75 - 125	240	139	0	20	S



Quality Control (cont.)

Preparation Batch: WET / 20383 Preparation Method: E300.0, Anions Associated Lab IDs: Q1958908001 Analysis Method: E300.0, Anions

Laboratory Reagent Blank (1324819)												
Parameter	Results	Units	MRL	LOD	Qualifier							
Chloride	<1.00	mg/L	1.00	0.400								
Fluoride	<0.0100	mg/L	0.0100	0.00400								
Sulfate	<1.00	mg/L	1.00	0.400								

Method Reporting Limit Check (1324821)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
hloride	mg/L	1	.71	71.1	50 - 150
Fluoride	mg/L	.01	.01	102	50 - 150
Sulfate	mg/L	1	.83	83	50 - 150

Laboratory Fortified Blank (1324822)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits
Chloride	mg/L	30	30.5	102	90 - 110
Fluoride	mg/L	1	1.01	101	90 - 110
Sulfate	mg/L	30	30.6	102	90 - 110

Limit of Quantitation Check (1324823)

Baramatar	Units	Spiked	Spike	Spike	Control
Parameter	Units	Amount	Result	Recovery	Limits
Chloride	mg/L	5	4.21	84.2	70 - 130
Fluoride	mg/L	.02	.02	94	70 - 130
Sulfate	mg/L	5	4.4	87.9	70 - 130

Laboratory Fortified Matrix (1324831) Original: Q1959047001; Lab Fortified Matrix Duplicate (1324832)

	A MARCHE AND AND	and de trates de la realisée de la r	NPA STRATES INT	A STATE OF A STATE OF A STATE OF	a service the service of	a stand of the second state			a show the second second second	Salar Salar
Parameter	Units	Spiked Amount	Spike Result	Spike Recovery	Control Limits	Dup Result	Dup Recovery	RPD	RPD Limit	
Chloride	mg/L	20	47.3	97.6	80 - 120	47.3	97.8	0	20	
Fluoride	mg/L	1	1.17	99	80 - 120	1.18	100	.851	20	
Sulfate	mg/L	20	40.6	103	80 - 120	40.7	104	.246	20	



Quality Control Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
Q1958908001	CBL - 306I	MEP/9539	SW3010A, Metals Prep
WET/20383 - E300.0,	Anions		
Lab ID	Sample ID	Prep Batch	Prep Method
Q1958908001	CBL - 306I		
WET/20393 - SM2540	C, TDS		
Lab ID	Sample ID	Prep Batch	Prep Method
Q1958908001	CBL - 306I		

Q1458408

Lab ID#:

LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

LCRA - Environmental Lab
3505 Montopolis Dr.
Austin, TX 78744

Phone: (512) 730-6022 or 1-800-776-5272 Fax: (512) 356-6021 https://els.lcra.org



Project:	FPP - Groundwater	Client	y	10		Client PO:	3540263
	Cittletri	Client: Contact:	LCRA Jason Woods	Report To:	FAYETTE POWER PLANT	Invoice To:	BECKIE LOEVE FAYETTE POWER PLANT
Event#:	1507140 / 9251	Phone:	(512)730-5339		6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945		6549 POWER PLANT RD MAIL STOP FPP La Grange, TX 78945

	ے ا				Matrix*		Co	ntain	ər(s) T	ype/P	reserv	ative	/Num	ber *				R	leque	sted	Analy	/sis *		 ٦
	AB USE ONL		Collec	cted *	AQ = Aqueous S = Solid T = Tissue DW =Drinking Water	POSITE Y/N	FILTERED Y/N	Ŋ	250PHNO3						-AM	FP	-AM	-AU	-AMTDS	AM-28				
	۲ ۲	Sample ID *	Date*	Time * HH:MM		COMP	FLT	500PU	250F						6020-AM	Fld_F	6010-AM	7470-	2540-	300.0				
er.	1	CBL - 306I	8/23/19	1148	AQ	N	N	1	1						х	x	х	х	х	x				
	2			11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				<i></i>							 						****		 	
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Transfers	Relinquished By	Date/Time	Received By	Date/Time		Coo	ler Temp		Client Spe	cial Instructions:
1	Caltter	8/23/19 1418	0-2	812314 1718	#	T#	Öbs.	Corr.	1	
2					1	6	ડત્પા	SAL		
3					2				Lab Use 🤈	
Note: Rel asterisk (*	inquishing sample(s) and signing t) are required to be completed.	he COC, client agrees to accept an	d is bound by the ELS Stand	ard Terms and Conditior	is. Al	fields	s with an	1		01958908 420911
Page 1 of	1									420911

ENERGY - WATER - COMMUNITY SERVICES Field Informat	F	PURGING IN	IFORMATI	Sam Sam ON	nple Date: nple Time: nple ID:	8/23/19 1048 [C B L 3 0 6 1
LIGEDATE (YY MM DD)	START PURGE (2400 Hr. Clock)		VOL IN CASING (Gallons)	3 X WELL VOL. 1 (Gallons)	N IN	ACTUAL VOLUME PURGED (Gallons)
Purging Equipment	18	G AND SAN		UIPMENT ling Equipment	Dedica	ted (Y)IINI
Purging Device L Sampling Device L	B A-Submersible Pump B B-Perisataltic Pump C-Bladder Pump	E-Venti	Litf Pump uri Pump er/Bottle	G-Bailer H-Scoop/Shovel I-Piston Pump	X X	Purging Other (Spedfy)
Purging Material L Sampling Material L	E A-Teflon E B-Stainless Steel		propylene	E-Polyethylene	X X	Sampling Other (Spedify) Purging Other (Spedify) Sampling Other (Spedify)
Tubing-Purging L Tubing-Sampling L	A-Teflon B-Tygon C-Rope X	D-Polyp E-Polye	propylene hylene	F-Silicon G-Combination teflon/Polypropylen	X e X	Purging Other (Specify) Sampling Other (Specify)
No management to a second statement of the second	(5	Specify)				
Well Elevation	FI	ELD MEAS (ft/msl)	1	S face Elevation		(ft/msl)
Depth to water From top of well casi	ng =Dw	(ft)	Depth to From lan			(ft)
Groundwater Elevation			Groundw	ater Elevation		(ft/msl)
Well Depth = D 203 6,83	(STD)	(ft) 7 <mark>8 </mark> uS/crr ^{ctivity}	Pump Pla	-	8 (°C)	I (ft)
Bottle			Analysis		I	Field Filt.Y/N
	rvative					
P 250mi HU P 500mi IC	03 Metals 25 Anions TOS					
is on going	Lec is Clear with Well Auged dry att DIUME CALCULATION nere in well elow measuring point easuring point	who no co	0-5m 00. Tent	I's dry & World Dell set for 1 how Ince Normal: Yes X	remou Sour No	pleal