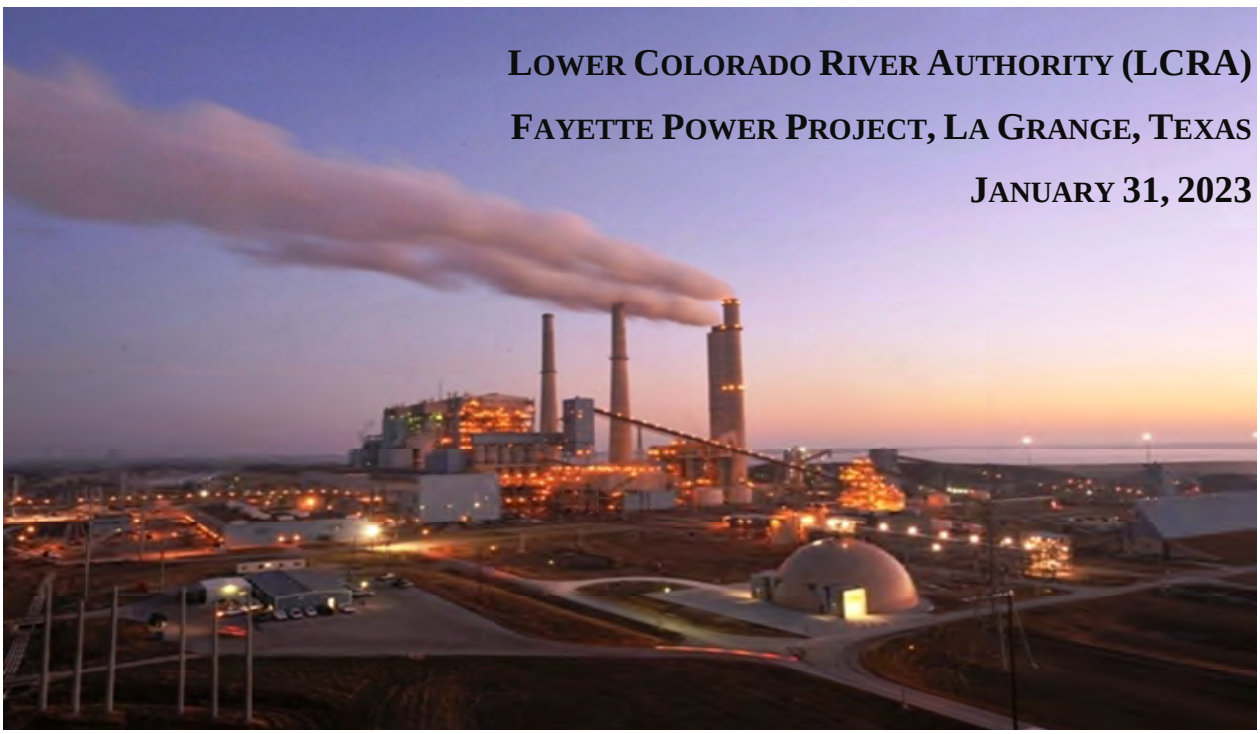
COAL COMBUSTION RESIDUAL LANDFILL

ANNUAL GROUNDWATER MONITORING REPORT

Calendar Year 2022



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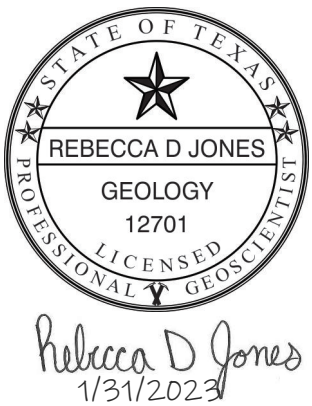

EXECUTIVE SUMMARY

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) which is an existing landfill CCR Unit 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 and the Texas Commission of Environmental Quality 30 Texas Administrative Code Chapter 352, Subchapter H.

At the beginning of calendar year 2022, the CBL was operating under detection monitoring. All groundwater sampling was conducted in accordance with 40 CFR § 257.93/30 TAC Chapter 352, Subchapter H - Groundwater sampling and analysis requirements and 40 CFR § 257.94. - Detection Monitoring. At the end of calendar year 2022, the CBL was operating under detection monitoring. The CBL will remain in detection monitoring for 2023.

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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 2D in 2015; therefore, both active cells are considered existing landfill 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), as amended on Aug. 28, 2020, and 30 Texas Administrative Code Chapter 352, Subchapter H 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 2022 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 2022. The locations of the monitoring wells are shown on Figure 1.

In accordance with 40 CFR § 257.93(c) and 30 Tex. Admin. Code §352.931, groundwater elevations were measured in each monitoring 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. The western area transect has an approximate flow rate of 22-24 feet per year and the eastern area transect has an approximate flow rate of 45-61 feet per year. Detailed information is contained in the Technical Memorandum's dated May 31, 2022 and November 17, 2022 prepared by Bullock, Bennett & Associates, LLC (BBA), which are included in Appendix A.

4.0 STATUS OF THE GROUNDWATER MONITORING PROGRAM

At the beginning of calendar year 2022, the CBL was operating under detection monitoring. 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. At the end of calendar year 2022, the CBL was operating under detection monitoring. As discussed in Section 5, the CBL will remain in detection monitoring for 2023. Table 3 contains a summary of the analytical data collected in 2022. In accordance with 30 TAC § 352.901, Table 3 also contains a summary of all groundwater monitoring data collected since October 19, 2015.

5.0 STATISTICAL EVALUATIONS AND ALTERNATE SOURCE DETERMINATION

5.1 Statistical Analysis of First Quarter 2022 Data

In May 2022, Otter Creek Environmental Services, LLC (Otter Creek) completed the statistical analysis of the first quarter detection monitoring Appendix III constituent data utilizing the prediction limit intrawell method. Samples were collected on January 26-28, 2022. The field parameters and analytical results were consistent with historic analytical results. The results indicated that there were no SSIs for any constituents in any well. Detailed information is contained in the May 2022 *Results for the Groundwater Statistics* prepared by Otter Creek which is included in Appendix B.

5.2 Statistical Analysis Third Quarter 2022 Data

In November 2022, Otter Creek completed the statistical analysis of the third quarter detection monitoring Appendix III constituent data utilizing the prediction limit intrawell method. Third quarter samples were collected between July 27-28, 2022.

Based on the July 2022 sampling data, there was an initial exceedance for boron in CBL-301I. Because these are initial exceedances in a 1 of 2 resampling method, well CBL-301I was resampled on August 30, 2022. A second exceedance was detected for boron in CBL-301I and another resample was required to confirm the exceedance. The 2 of 2 resample was collected on October 25,2022 and a split sample was collected to be sent to a second laboratory. Based on the resample analytical results, there were no confirmed control chart exceedances detected and a statistically significant exceedance was not confirmed. Detailed information is contained in the November 2022 *Results for the Groundwater Statistics* prepared by Otter Creek which is included in Appendix C. Historically, well CBL-301I's boron analyses have regularly been below detection limits with occasional detections, followed by the subsequent sample being below detection limit again (See Table 3). The laboratory analytical results are included in Appendix D.

6.0 PLANNED ACTIVITIES

Planned activities for 2023 include continued semi-annual detection monitoring with associated statistical analysis and responding in accordance with the CCR rules as new information is developed.

TABLE 1

MONITOR 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	14	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/NSRS 2007 Vertical Datum: NAVD88	Horizontal Datum: NAD83/NSRS 2007 Vertical Datum: NAVD88	Horizontal Datum: NAD83/NSRS 2007 Vertical Datum: NAVD88	Horizontal Datum: NAD83/2011-EPOCH 2012 Vertical Datum: NAVD88-GEOIDIZA

TABLE 2

2022 CCR GROUNDWATER MONITORING EVENTS

Well #	Date of sample collection	# Samples collected for analysis	Monitoring program
CBL 340I	1/28/2022	1	Detection monitoring
	7/28/2022	1	Detection monitoring
CBL 301I	1/26/2022	1	Detection monitoring
	7/27/2022	1	Detection monitoring
	8/30/2022	1	Detection monitoring
	10/25/2022	1	Detection monitoring
CBL 302I	1/27/2022	1	Detection monitoring
	7/28/2022	1	Detection monitoring
CBL 306I	1/27/2022	1	Detection monitoring
	7/28/2022	1	Detection monitoring
CBL 308I	1/27/2022	1	Detection monitoring
	7/27/2022	1	Detection monitoring
CBL 341I	1/27/2022	1	Detection monitoring
	7/28/2022	1	Detection monitoring

TABLE 3
GROUNDWATER MONITORING RESULTS SUMMARY

Monitoring Well	Sample Date	Regulatory Phase	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids (Residue Filterable)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium Combined	Temp C	DO mg/L	DO %	Specific Conductivity
MCL including EPA Phase 1			**NE**	**NE**	**NE**	**4.0**	**NE**	**NE**	**NE**	**0.006**	**0.010**	**2.000**	**0.004**	**0.005**	**0.100**	**0.006**	**0.015**	**0.040**	**0.002**	**0.1**	**0.05**	**0.002**	**--**	**--**	**5 pCi/l**	**NE**	**NE**	**NE**	**NE**
Analytical Method			**SW3010A**	**SW3010A**	**E300.0**	**E300.0**	**SM4500H+ B**	**E300.0**	**DM2450C**	**SW6020**	**SW6020**	**SW6010B**	**SW6010B**	**SW6020**	**SW6020**	**SW6020**	**SW6020**	**SW6020**	**SM2540C**	**SW6020**	**SW6020**	**SW6020**	**E903.0**	**E904.0**		**--**	**--**	**--**	**--**
Method Detection Limit			**0.02**	**0.35**	**20**	**0.2**	**--**	**20**	**250**	**0.0004**	**0.0007**	**0.004**	**0.001**	**0.0004**	**0.0004**	**0.0004**	**0.0004**	**0.0004**	**0.07 ug/L**	**0.0004**	**0.0017**	**0.0004**	**1**	**1**		**--**	**--**	**--**	**--**
Practical Quantitation Limit			**0.05**	**1**	**50**	**0.5**	**--**	**50**	**250**	**0.001**	**0.002**	**0.01**	**0.004**	**0.001**	**0.001**	**0.001**	**0.001**	**0.001**	**0.2 ug/L**	**0.001**	**0.005**	**0.001**	**1**	**1**		**--**	**--**	**--**	**--**
CBL Background/Up-gradient Well																													
CBL-340I	1/21/2016	B	<0.0500	564	2370	1.09	6.52	652	4990	<0.001	<0.002	0.0267	<0.004	<0.001	0.00116	<0.00100	<0.00100	0.0885	<0.0002	0.00304	<0.005	<0.001	<1.0	1.45	1.45	22.47	4.42	52.4	8121
CBL-340I	5/4/2016	B	0.0832	560	2260	1.92	6.13	616	5230	<0.00100	<0.00200	0.0235	<0.004	<0.001	0.00114	<0.00100	<0.00100	0.085	<0.0002	0.00309	<0.005	<0.001	<1.0	1.22	1.22	22.96	4.12	49.3	8159
CBL-340I	7/27/2016	B	0.081	575	2350	1.06	6.95	668	6250	<0.001	<0.002	0.0271	<0.004	<0.001	0.00146	<0.001	<0.001	0.0711	<0.0002	0.00301	<0.005	<0.001	1.89	1.16	3.05	24.72	6.99	84.4	1272
CBL-340I	10/24/2016	B	0.158	607	2380	1.26	6.19	675	5670	<0.001	<0.002	0.0303	<0.004	<0.001	0.00176	<0.001	<0.001	0.0843	<0.0002	0.00334	0.00725	<0.001	1.47	1.39	2.86	22.76	3.34	39.8	8427
CBL-340I	1/23/2017	B	<0.050	627	2070	0.84	5.46	571	6230	<0.001	<0.002	0.0275	<0.004	<0.001	0.00179	<0.001	<0.001	0.0887	<0.0002	0.00284	<0.005	<0.001	<1.00	<1.00	<1.00	22.79	NA	NA	8259
CBL-340I	3/22/2017	B	0.174	581	2280	8.44	6.49	635	5480	<0.001	<0.002	0.0259	<0.004	<0.001	<0.0001	<0.001	<0.001	0.0684	<0.0002	0.00229	<0.005	<0.001	<1.00	2.71	2.71	22.37	NA	NA	7900
CBL-340I	5/16/2017	B	0.104	584	2520	1.01	5.77	715	5470	<0.001	<0.002	0.027	<0.004	<0.001	0.001	<0.001	<0.001	0.101	<0.0002	0.00248	<0.005	<0.001	<1.00	<1.00	<1.00	22.51	NA	NA	8286
CBL-340I	7/27/2017	B	0.0816	571	2380	0.85	6.42	685	4880	<0.001	<0.002	0.0272	<0.004	<0.001	<0.001	<0.001	<0.001	0.0875	<0.0002	0.00261	<0.005	<0.001	NA	NA	NA	22.73	NA	NA	8292
CBL-340I	2/8/2018	B	0.0638	555	2730	1.00	6.41	752	5290	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.61	NA	NA	NA
CBL-340I	7/27/2018	B	<0.0500	544	2450	1.3	6.25	711	5100	NA	NA	NA	NA	NA	NA	NA	NA	0.0968	NA	NA	NA	NA	NA	NA	NA	23.2	NA	NA	8131
CBL-340I	1/22/2019	B	<0.0500	518	2250	0.83	6.59	639	4720	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	7/31/2019	B	0.124	518	2280	0.88	6.45	684	5560	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	1/30/2020	B	0.0562	539	2240	0.87	6.49	637	5080	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	9/18/2020	B	0.146	547	2130	0.725	6.32	608	5430	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	1/28/2021	B	<0.0500	607	2260	0.835	6.32	634	5520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	7/22/2021	B	0.384	532	2200	0.865	6.24	618	4990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	1/28/2022	B	0.160	597	2200	1.06	6.42	619	4870	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-340I	7/28/2022	B	0.285	538	2160	0.865	6.35	614	5490	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL Down-gradient Wells																													
CBL-301I	1/21/2016	DM	<0.05	905	2300	<0.250	6.33	336	4380	<0.001	<0.002	0.0436	<0.004	<0.001	0.00371	<0.001	0.00105	0.0949	<0.0002	0.00124	<0.005	<0.001	<1.0	<1.0	<1.0	24.12	0.41	5.0	7133
CBL-301I	5/4/2016	DM	<0.0500	949	2160	<0.500	6.26	311	5050	<0.00100	<0.00200	0.0423	<0.00400	<0.00100	0.00867	<0.00100	0.00153	0.0847	<0.0002	0.00189	<0.00500	<0.00100	<1.0	<1.0	<1.0	25.02	1.21	15	7202
CBL-301I	7/27/2016	DM	<0.05	925	2290	<0.01	5.95	336	6020	<0.001	<0.002	0.0661	<0.004	<0.001	0.0101	<0.001	0.00171	0.0869	<0.0002	0.00156	<0.005	<0.001	<1.0	<1.0	<1.0	23.47	3.08	37.3	9807
CBL-301I	10/24/2016	DM	<0.05	978	2250	<0.250	6.23	326	4570	<0.001	<0.002	0.0907	<0.004	<0.001	0.0142	<0.001	0.00168	0.0932	<0.0002	0.00252	<0.005	<0.001	<1.0	1.15	1.15	25.09	0.77	9.6	7261
CBL-301I	1/23/2017	DM	<0.05	1000	3200	0.312	6.26	488	6140	<0.001	<0.002	0.0497	<0.004	<0.001	<0.001	<0.001	<0.001	0.091	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	<1.0	23.83	NA	NA	7532
CBL-301I	3/22/2017	DM	<0.05	1030	2390	<0.500	6.31	337	6570	<0.001	<0.002	0.0662	<0.004	<0.001	0.00546	<0.001	<0.001	0.095	<0.0002	0.00137	<0.005	<0.001	<1.0	<1.0	<1.0	24.93	NA	NA	7495
CBL-301I	5/18/2017	DM	0.0707	1060	2420	<0.500	5.95	342	6430	<0.001	<0.002	0.0774	<0.004	<0.001	0.0165	0.00133	0.00186	0.116	<0.0002	0.0024	<0.005	<0.001	<1.0	<1.0	<1.0	25.92	NA	NA	7532
CBL-301I	7/26/2017	DM	<0.05	961	2500	<0.01	6.02	381	4290	<0.001	<0.002	0.0467	<0.004	<0.001	0.0022	<0.001	<0.001	0.0941	<0.0002	0.00109	<0.005	<0.001	NA	NA	NA	24.95	NA	NA	7365
CBL-301I	2/8/2018	DM	<0.05	873	2480	<0.01	6.17	344	5120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.37	NA	NA	NA
CBL-301I	7/25/2018	DM	<0.05	993	1330	<0.500	6.04	196	5390	NA	NA	NA	NA	NA	NA	NA	NA	0.0971	NA	NA	NA	NA	NA	NA	NA	24.46	NA	NA	7446
CBL-301I	1/17/2019	DM	<0.05	156	619	0.219	7.16	104	1460	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	5/2/2019	DM	<0.05	762	1910	0.112	6.14	398	5650	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	7/31/2019	DM	<0.05	783	2240	0.051	6.19	332	6040	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	1/28/2020	DM	<0.05	851	2360	0.13	6.26	349	4790	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	9/17/2020	DM	0.0801	1060	2270	<.25	6.13	350	6340	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	1/26/2021	DM	<0.0500	1130	2420	<0.500	6.06	374	6060	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	7/20/2021	DM	0.0826	1100	25910	2.68	6.13	419	5870	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	9/7/2021	DM	<0.0500	NA	NA	<0.500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	1/26/2022	DM	<0.0500	999	2440	<0.500	6.27	406	4700	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	7/27/2022	DM	0.085	1010	1840	0.156	6.08	285	4590	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	8/30/2022	DM	0.107	NA	NA	NA	6.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I	10/25/2022	DM	0.0645	NA	NA	NA	6.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-301I (split sample)	10/25/2022	DM	0.0769	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 3
GROUNDWATER MONITORING RESULTS SUMMARY

Monitoring Well	Sample Date	Regulatory Phase	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids (Residue Filterable)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium Combined	Temp C	DO mg/L	DO %	Specific Conductivity
MCL including EPA Phase 1			NE	NE	NE	4.0	NE	NE	NE	0.006	0.010	2.000	0.004	0.005	0.100	0.006	0.015	0.040	0.002	0.1	0.05	0.002	--	--	5 pCi/l	NE	NE	NE	NE
Analytical Method			SW3010A	SW3010A	E300.0	E300.0	SM4500H+ B	E300.0	DM2450C	SW6020	SW6020	SW6010B	SW6010B	SW6020	SW6020	SW6020	SW6020	SW6020	SM2540C	SW6020	SW6020	SW6020	E903.0	E904.0		--	--	--	--
Method Detection Limit			0.02	0.35	20	0.2	--	20	250	0.0004	0.0007	0.004	0.001	0.0004	0.0004	0.0004	0.0004	0.0004	0.07 ug/L	0.0004	0.0017	0.0004	1	1		--	--	--	--
Practical Quantitation Limit			0.05	1	50	0.5	--	50	250	0.001	0.002	0.01	0.004	0.001	0.001	0.001	0.001	0.001	0.2 ug/L	0.001	0.005	0.001	1	1		--	--	--	--
CBL-302I	1/22/2016	DM	<0.05	1030	2190	<0.250	6.29	1020	5500	<0.001	<0.002	0.0226	<0.004	<0.001	<0.001	<0.001	<0.001	0.0487	<0.0002	<0.001	<0.005	<0.001	<1.0	1.98	1.98	20.93	1.42	16.4	7835
CBL-302I	5/4/2016	DM	<0.05	1010	2130	<0.500	6.01	993	5390	<0.001	<0.002	0.0218	<0.004	<0.001	<0.001	<0.001	<0.001	0.042	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	<1.0	20.84	1.51	17.3	7911
CBL-302I	7/27/2016	DM	<0.05	1030	2210	<0.500	5.17	1090	6850	<0.001	<0.002	0.0251	<0.004	<0.001	<0.001	<0.001	<0.001	0.0411	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	<1.0	21.98	1.13	13.3	7906
CBL-302I	10/24/2016	DM	0.156	1070	2170	<0.250	7.75	1180	4210	<0.001	<0.002	0.0269	<0.004	<0.001	<0.001	<0.001	<0.001	0.0483	<0.0002	<0.001	<0.005	<0.001	<1.0	1.13	1.13	22.00	8.71	103.3	11017
CBL-302I	1/23/2017	DM	<0.05	1100	2080	0.332	5.36	1150	6430	<0.001	<0.002	0.0269	<0.004	<0.001	<0.001	<0.001	<0.001	0.0402	<0.0002	0.00286	<0.005	<0.001	<1.0	<1.0	<1.0	22.13	NA	NA	7723
CBL-302I	3/22/2017	DM	0.297	1090	2050	<0.500	5.40	1120	6460	<0.001	<0.002	0.0277	<0.004	<0.001	<0.001	<0.001	<0.001	0.0558	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	<1.0	21.79	NA	NA	7753
CBL-302I	5/16/2017	DM	<0.05	1100	2230	<0.500	4.94	1230	5860	<0.001	<0.002	0.0275	<0.004	<0.001	<0.001	<0.001	<0.001	0.0611	<0.0002	<0.001	<0.005	<0.001	<1.0	<1.0	<1.0	21.52	NA	NA	7777
CBL-302I	7/27/2017	DM	<0.05	1040	2040	<0.02	6.20	1180	5120	<0.001	<0.002	0.0260	<0.004	<0.001	<0.001	<0.001	<0.001	0.0534	<0.0002	<0.001	<0.005	<0.001	NA	NA	NA	22.10	NA	NA	7753
CBL-302I	2/8/2018	DM	<0.05	934	2080	0.112	6.21	1240	6010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.47	NA	NA	NA
CBL-302I	7/27/2018	DM	<0.05	995	1980	<0.500	5.77	1390	5510	NA	NA	NA	NA	NA	NA	NA	NA	0.0489	NA	NA	NA	NA	NA	NA	NA	22.20	NA	NA	NA
CBL-302I	1/22/2019	DM	<0.05	855	1960	0.0402	6.44	1250	5060	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	7/31/2019	DM	<0.05	914	1540	.0605	6.15	1260	4190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	1/30/2020	DM	<0.05	838	1540	0.193	6.34	1350	4790	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	9/17/2020	DM	<0.05	853	1410	<0.25	6.2	1280	4990	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	1/28/2021	DM	<0.0500	1020	1370	<0.500	6.21	1290	4800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	7/21/2021	DM	0.0743	844	1380	2.25	6.06	1350	4810	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	9/7/2021	DM	NA	NA	NA	<0.250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	1/27/2022	DM	<0.0500	754	1310	<0.500	6.32	1340	4510	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-302I	7/28/2022	DM	<0.0500	750	1300	0.165	6.21	1300	5120	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	1/21/2016	DM	<0.0500	137	155	2.5	7.09	266	1280	<0.001	<0.002	0.0512	<0.004	<0.001	<0.001	<0.001	<0.001	0.0239	<0.0002	0.00532	<0.005	<0.001	<1.0	<1.0	<1.0	20.4	6.6	73.5	1854
CBL-306I	5/4/2016	DM	0.0717	47.2	20.0	1.00	6.69	29.5	431	<0.001	<0.002	0.0313	<0.004	<0.001	<0.001	<0.001	<0.001	0.006	<0.0002	0.00305	<0.005	<0.001	<1.0	<1.0	<1.0	21.13	6.14	69.1	672
CBL-306I	7/26/2016	DM	0.0998	105	114	1.37	6.95	139	790	<0.001	<0.002	0.0976	<0.004	<0.001	<0.001	0.00123	<0.001	0.0127	<0.0002	0.00234	<0.005	<0.001	<1.0	<1.0	<1.0	24.72	6.99	84.4	1272
CBL-306I	10/24/2016	DM	0.0556	198	330	2.38	6.72	432	1150	<0.001	<0.002	0.0841	<0.004	<0.001	<0.001	0.00287	<0.001	0.0265	<0.0002	0.00327	<0.005	<0.001	<1.0	1.05	1.05	26.13	7.93	98.6	2423
CBL-306I	1/19/2017	DM	<0.05	174	197	1.85	7.29	270	1320	<0.001	<0.002	0.0706	<0.004	<0.001	<0.001	<0.001	<0.001	0.0281	<0.0002	<0.001	0.00652	<0.001	<1.0	<1.0	<1.0	20.83	NA	NA	1422
CBL-306I	3/22/2017	DM	0.124	204	231	12.6	4.41	340	1460	<0.001	<0.002	0.0688	<0.004	<0.001	<0.001	<0.001	<0.001	0.0229	<0.0002	0.00266	<0.005	<0.001	<1.0	<1.0	<1.0	22.38	NA	NA	2176
CBL-306I	5/18/2017	DM	0.0832	205	289	2.20	5.61	412	1440	<0.001	<0.002	0.0577	<0.004	<0.001	<0.001	<0.001	<0.001	0.0325	<0.0002	0.00195	<0.005	<0.001	<1.0	<1.0	<1.0	23.60	NA	NA	2151
CBL-306I	7/27/2017	DM	0.0531	234	350	2.91	6.94	513	1280	<0.001	<0.002	0.0648	<0.004	<0.001	<0.001	<0.001	<0.001	0.0332	<0.0002	0.00352	<0.005	<0.001	NA	NA	NA	23.89	NA	NA	2687
CBL-306I	2/8/2018	DM	<0.0500	230	385	2.81	6.67	493	1760	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.32	NA	NA	NA
CBL-306I	7/27/2018	DM	<0.0500	275	283	2.95	6.86	406	1450	NA	NA	NA	NA	NA	NA	NA	NA	0.0298	NA	NA	NA	NA	NA	NA	NA	24.05	NA	NA	1996
CBL-306I	1/16/2019	DM	<0.0500	180	215	1.98	6.78	292	1220	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	7/31/2019	DM	0.0824	106	538	9.26	6.92	816	676	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	8/23/2019	DM	0.05	226	318	2.66	6.83	387	1710	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	27.48	NA	NA	2478
CBL-306I	1/29/2020	DM	<0.0500	247	445	2.83	6.70	561	1830	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	9/19/2020	DM	0.0773	260	420	2.72	7.16	506	1730	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	1/28/2021	DM	<0.0500	257	292	2.90	6.84	388	1420	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	7/21/2021	DM	0.0927	216	255	2.42	6.55	336	1320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	1/27/2022	DM	0.0548	212	384	2.99	6.87	510	1730	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-306I	7/28/2022	DM	0.11	182	261	2.26	6.70	348	1540	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 3
GROUNDWATER MONITORING RESULTS SUMMARY

Monitoring Well	Sample Date	Regulatory Phase	Boron	Calcium	Chloride	Fluoride	pH	Sulfate	Total Dissolved Solids (Residue Filterable)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Lead	Lithium	Mercury	Molybdenum	Selenium	Thallium	Radium 226	Radium 228	Radium Combined	Temp C	DO mg/L	DO %	Specific Conductivity
MCL including EPA Phase 1			NE	NE	NE	4.0	NE	NE	NE	0.006	0.010	2.000	0.004	0.005	0.100	0.006	0.015	0.040	0.002	0.1	0.05	0.002	--	--	5 pCi/l	NE	NE	NE	NE
Analytical Method			SW3010A	SW3010A	E300.0	E300.0	SM4500H+ B	E300.0	DM2450C	SW6020	SW6020	SW6010B	SW6010B	SW6020	SW6020	SW6020	SW6020	SW6020	SM2540C	SW6020	SW6020	SW6020	E903.0	E904.0		--	--	--	--
Method Detection Limit			0.02	0.35	20	0.2	--	20	250	0.0004	0.0007	0.004	0.001	0.0004	0.0004	0.0004	0.0004	0.0004	0.07 ug/L	0.0004	0.0017	0.0004	1	1		--	--	--	--
Practical Quantitation Limit			0.05	1	50	0.5	--	50	250	0.001	0.002	0.01	0.004	0.001	0.001	0.001	0.001	0.001	0.2 ug/L	0.001	0.005	0.001	1	1		--	--	--	--
CBL-308I	1/22/2016	DM	<0.0500	903	2760	1.49	6.36	1490	6820	<0.00100	<0.00200	0.0413	<0.00400	<0.00100	<0.00100	<0.001	<0.00100	0.116	<0.0002	0.00106	0.00693	<0.00100	<1.0	1.11	1.11	21.45	2.82	32.9	9772
CBL-308I	5/4/2016	DM	0.121	870	2580	2.3	6.13	1410	6120	<0.00100	<0.00200	0.0395	<0.00400	<0.00100	<0.00100	<0.001	<0.00100	0.134	<0.0002	0.00113	0.00823	<0.00100	<1.0	<1.0	<1.0	22.87	2.81	33.8	9726
CBL-308I	7/26/2016	DM	0.186	911	2680	1.64	5.95	1490	7890	<0.001	<0.002	0.0462	<0.004	<0.001	<0.001	<0.001	<0.001	0.0854	<0.0002	<0.001	0.00793	<0.001	<1.0	1.21	1.21	23.47	3.08	37.3	9807
CBL-308I	10/24/2016	DM	0.256	939	2870	1.59	6.27	1550	10200	<0.001	<0.002	<0.05	<0.004	<0.001	<0.001	<0.001	<0.001	0.106	<0.0002	0.00104	0.00887	<0.001	<1.0	1.66	1.66	23.06	1.6	19.3	10000
CBL-308I	1/19/2017	DM	<0.05	919	2360	1.33	6.83	1320	9620	<0.001	<0.002	0.0458	<0.004	<0.001	<0.001	<0.001	<0.001	0.106	<0.0002	0.0013	0.00995	<0.001	<1.0	1.41	1.41	22.11	NA	NA	9681
CBL-308I	3/22/2017	DM	0.545	947	2530	9.05	6.27	1470	7260	<0.001	<0.002	0.0495	<0.004	<0.001	<0.001	<0.001	<0.001	0.123	<0.0002	0.00105	0.00761	<0.001	<1.0	1.37	1.37	22.67	NA	NA	9659
CBL-308I	5/16/2017	DM	0.109	954	2740	1.7	5.54	1580	6590	<0.001	<0.002	0.0494	<0.004	<0.001	<0.001	<0.001	<0.001	0.13	<0.0002	0.001	0.00779	<0.001	<1.0	1.15	1.15	23.1	NA	NA	9697
CBL-308I	7/26/2017	DM	0.0799	878	2760	1.9	6.27	1550	6480	<0.001	<0.002	0.0436	<0.004	<0.001	<0.001	<0.001	<0.001	0.125	<0.0002	0.00106	0.00769	<0.001	NA	NA	NA	24.75	NA	NA	9929
CBL-308I	2/6/2018	DM	<0.0500	859	2750	1.76	6.26	1570	6200	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.73	NA	NA	NA
CBL-308I	7/25/2018	DM	<0.0500	863	2680	2.1	6.07	1540	6320	NA	NA	NA	NA	NA	NA	NA	NA	0.109	NA	NA	NA	NA	NA	NA	NA	23.43	NA	NA	9313
CBL-308I	1/18/2019	DM	<0.0500	760	2240	1.68	6.39	1520	4760	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	7/31/2019	DM	<0.0500	840	2290	1.62	6.25	1420	5820	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	1/29/2020	DM	<0.0500	745	2110	1.6	6.37	1340	5980	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	9/18/2020	DM	0.103	838	2410	1.33	6.22	1310	6860	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	1/28/2021	DM	<0.0500	830	2200	1.44	6.26	1340	6190	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	7/21/2021	DM	0.130	684	1780	1.74	6.16	1240	5270	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	1/27/2022	DM	<0.0500	974	2020	1.75	6.36	1310	5320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-308I	7/27/2022	DM	0.0790	736	2470	1.43	6.23	1190	6840	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	1/23/2017	DM	<0.05	854	1600	0.53	5.74	307	5000	<0.001	<0.002	0.0703	<0.004	<0.001	<0.001	<0.001	<0.001	0.0858	<0.0002	0.00112	<0.005	<0.001	<1.0	1.23	1.23	21.95	NA	NA	6053
CBL-341I	2/23/2017	DM	<0.05	870	2000	<0.50	5.23	404	4520	<0.001	<0.002	0.0733	<0.004	<0.001	<0.001	<0.001	<0.001	0.0840	<0.0002	<0.001	<0.005	<0.001	1.53	2.19	3.72	22.14	NA	NA	6030
CBL-341I	3/22/2017	DM	<0.05	906	1780	<0.50	5.72	346	5110	<0.001	<0.002	0.0739	<0.004	<0.001	<0.001	<0.001	<0.001	0.0895	<0.0002	<0.001	<0.005	<0.001	<1.00	2.62	2.62	22.08	NA	NA	6014
CBL-341I	4/20/2017	DM	0.0587	898	1770	<0.50	5.73	336	4240	<0.001	<0.002	0.0747	<0.004	<0.001	<0.001	<0.001	<0.001	0.0856	<0.0002	0.00116	<0.005	<0.001	2.21	1.90	4.11	21.88	NA	NA	6038
CBL-341I	5/16/2017	DM	0.0896	860	1900	<0.50	5.54	369	4840	<0.001	<0.002	0.0706	<0.004	<0.001	<0.001	<0.001	<0.001	0.0835	<0.0002	<0.001	<0.005	<0.001	<1.00	1.29	1.29	22.18	NA	NA	6108
CBL-341I	6/20/2017	DM	0.0668	950	1820	0.335	6.19	363	5940	<0.001	<0.002	0.0693	<0.004	<0.001	<0.001	0.00163	<0.001	0.0825	<0.0002	0.00328	0.00692	<0.001	NA	NA	NA	22.86	NA	NA	5931
CBL-341I	7/27/2017	DM	0.0507	829	1970	0.055	6.21	419	4150	<0.001	<0.002	0.0685	<0.004	<0.001	<0.001	<0.001	<0.001	0.0912	<0.0002	<0.001	<0.005	<0.001	NA	NA	NA	23.17	NA	NA	6036
CBL-341I	2/862018	DM	<0.05	810	2110	0.106	6.18	383	4320	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	21.52	NA	NA	4320
CBL-341I	8/24/2018	DM	<0.05	824	1910	0.114	5.82	376	4800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.85	NA	NA	6076
CBL-341I	1/22/2019	DM	<0.05	782	1790	0.0546	6.38	358	3870	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	7/31/2019	DM	<0.05	714	1650	0.1	6.23	329	5370	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	1/30/2020	DM	<0.05	767	1780	0.153	6.27	351	4900	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	9/17/2020	DM	0.102	814	1700	<0.25	6.14	336	4930	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	1/27/2021	DM	<0.0500	874	1800	<0.500	6.06	324	3940	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	7/22/2021	DM	0.111	852	1750	1.16	5.98	316	4520	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	9/7/2021	DM	NA	NA	NA	<0.250	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	1/27/2022	DM	<0.0500	1040	1810	<0.500	6.26	320	3800	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CBL-341I	7/28/2022	DM	0.115	704	1690	0.141	6.16	296	4910	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Regulatory Phase: Background (B), Detection Monitoring (DM), Assessment Monitoring (AM), Corrective Action (CA)

All concentrations reported in mg/L (milligrams per liter)

NE = Not established, EPA considers these compounds are not a concern from a human health standpoint

All concentrations reported in mg/L (milligrams per liter)

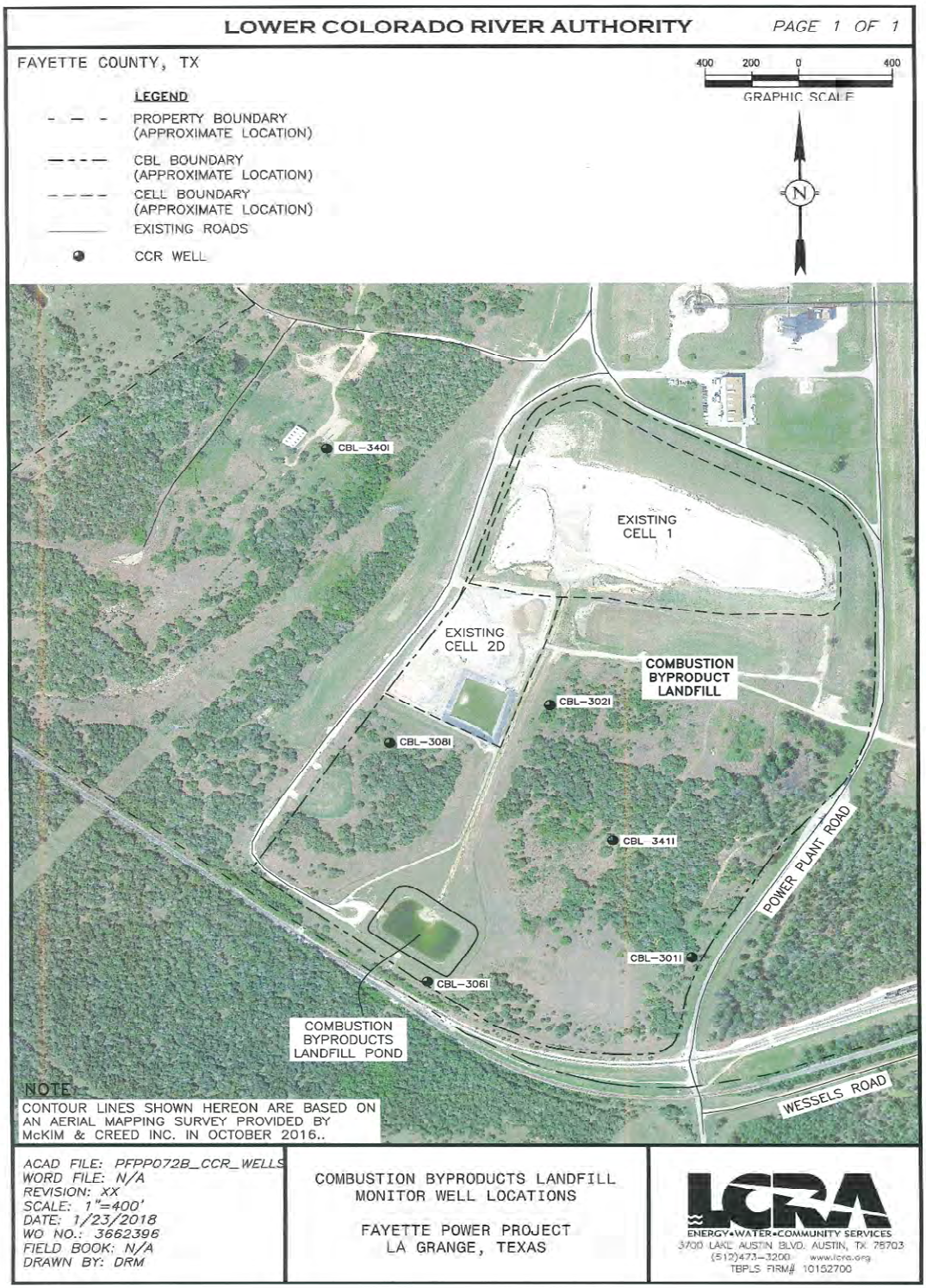
NA = Not analyzed in accordance with 40 CFR 257.94

Appendix III to Part 257 Constituents for Detection Monitoring

Appendix IV to Part 257 Constituents for Assessment Monitoring

FIGURE 1

MONITOR WELL LOCATION MAP



Appendix A

CCR Groundwater Detection Monitoring Program
Evaluation of First Quarter 2022
Potentiometric Surface Data Collected from the CBL
Bullock, Bennett & Associates, LLC
May 31, 2022

CCR Groundwater Detection Monitoring Program
Evaluation of Third Quarter 2022
Potentiometric Surface Data Collected from the CBL
Bullock, Bennett & Associates, LLC
November 17, 2022

Bullock, Bennett & Associates, LLC

www.bbaengineering.com
165 N. Lampasas St. • Bertram, Texas 78605 • (512) 355-9198

Technical Memorandum

To: Rebecca D. Jones, P.G.
Environmental Coordinator
Lower Colorado River Authority (LCRA)

Project No. 22482

From: Charlie Macon, P.G.

Date: May 31, 2022

Subject: CCR GROUNDWATER DETECTION MONITORING PROGRAM EVALUATION OF FIRST QUARTER 2022 POTENTIOMETRIC SURFACE DATA COLLECTED FROM THE CBL

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the evaluation of the Intermediate Sand groundwater bearing unit potentiometric surface data obtained during the First Quarter-2022 Combustion Byproducts Landfill (CBL) Groundwater Monitoring Event. The groundwater monitoring is being performed as part of the CBL Groundwater Monitoring Program (GMP) in accordance with 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 measurement of the potentiometric surface evaluation and determination of groundwater flow direction and flow rate is conducted for each groundwater monitoring event pursuant to the GMP requirements of 40 CFR 257.93(c) and 30 Tex. Admin. Code §352.931.

2.0 POTENTIOMETRIC SURFACE DATA COLLECTION, MAPPING, AND GRADIENT DETERMINATION

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 monitoring well casing elevation. Table 1 presents the summary of groundwater measurements obtained from the CBL Groundwater Monitoring network in the First Quarter–2022 event.

Based on the measured groundwater elevations, a potentiometric surface map was prepared to document the First Quarter-2022 monitoring event (Figure 1). The map shows a groundwater potentiometric surface that is relatively consistent with those presented for all prior CBL GMP monitoring events. As illustrated by the map shown in Figure 1, the groundwater flow direction is to the south-southwest. The calculated gradient for the western portion of the CBL is 0.010 ft/ft. For the eastern portion of the CBL, a gradient of 0.021 ft/ft was calculated.

3.0 GROUNDWATER FLOW RATE CALCULATION

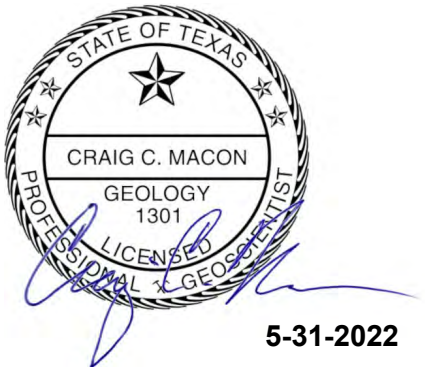
Groundwater flow rate was calculated along two transects, one along the western area having the lower gradient, and one along the eastern area having the higher gradient. As documented in the CBL Hydrogeology Report (Amec, 2013), a hydraulic conductivity value (K) of 6.3×10^{-4} centimeters per second (cm/sec) has been estimated for the Intermediate Sand. The hydraulic conductivity value is based on the rising-head slug test data obtained from monitoring well CBL-302I. Consistent with past evaluations of the Intermediate Sand, this hydraulic conductivity value was utilized for the First Quarter-2022 event to calculate the groundwater flow rate. Also consistent with past evaluations, an assumed porosity value of 0.30 was utilized based on the dominant aquifer lithology (clayey sands and silty sands).

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

Eastern Transect (gradient of 0.021 ft/ft): 45 ft/yr (rounded)
Western Transect (gradient of 0.010 ft/ft): 22 ft/yr (rounded)

4.0 REFERENCES

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



5-31-2022

TABLE 1
Combustion Byproducts Landfill
Groundwater Monitoring Well System
January 2022 Potentiometric Surface Data
Fayette Power Project
La Grange, Texas

Well ID	CBL-340I		CBL-301I		CBL-302I		CBL-306I		CBL-308I		CBL-341I	
Well Top of Casing Elevation	376.98		372.11		358.99		339.96		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)
1/26/2022	NM	NM	35.65	336.46	NM	NM	NM	NM	NM	NM	NM	NM
1/27/2022	NM	NM	NM	NM	10.70	348.29	8.71	331.25	24.38	344.29	16.48	350.17
1/28/2022	24.68	352.30	NM	NM	NM	NM	NM	NM	NM	NM	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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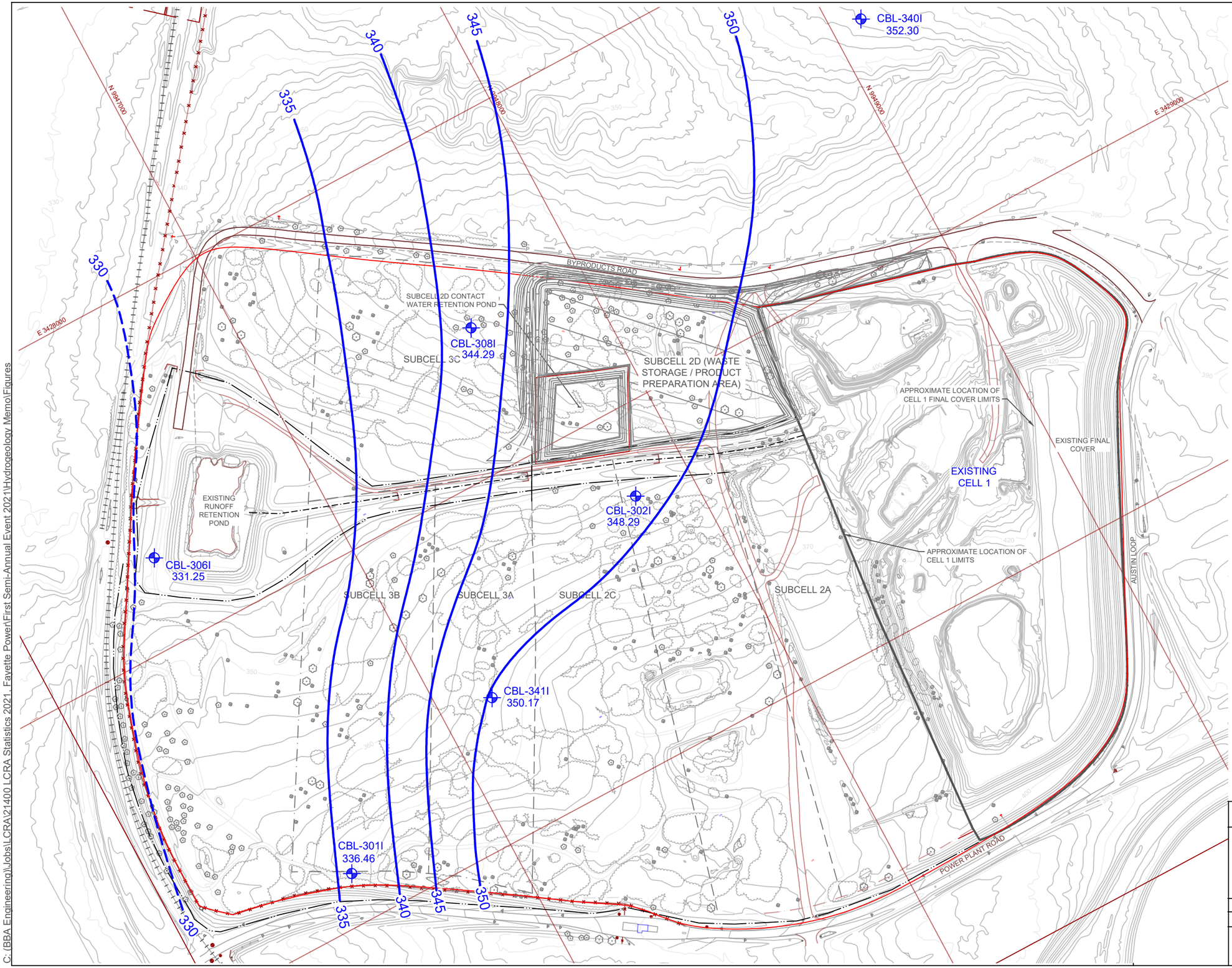

LEGEND

- CBL UNIT BOUNDARY
- 350 — EXISTING GROUND ELEVATION (FT,MSL) (NOTES 1,2)
- 350 — EXISTING TOP OF CLAY LINER ELEVATION (FT,MSL) (NOTE 2)
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING RAILROAD
- N 9949000 / E 3428000 — COORDINATE GRID (NOTE 2)
- EXISTING FENCE
- PROPOSED PHASE BOUNDARY
- PROPOSED LIMIT OF WASTE
- P P P — POWER LINE
- CBL-302I 347.90 — WELLS
- CBL GROUNDWATER MONITORING WELL WITH POTENTIOMETRIC SURFACE ELEVATION INDICATED IN FEET ABOVE NAVD 1988.
- 350 — POTENTIOMETRIC SURFACE CONTOUR LINE
- INFERRED GROUNDWATER FLOW DIRECTION

NOTES:

1. THE EXISTING CONTOUR BASE MAP SHOWN ON THIS DRAWING WAS COMPILED USING AN AERIAL SURVEY BASED ON PHOTOGRAPHY PERFORMED ON 23 OCTOBER 2013 BY SURDEX CORPORATION AND LIDAR DATA PUBLISHED DECEMBER 2008 AND PROVIDED BY LCRA SURVEYING, MAPPING, AND GIS.
2. ELEVATIONS ARE IN FEET (FT) AS DEFINED BY THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. STATE PLANE COORDINATE GRID CORRESPONDS TO TEXAS STATE PLANE COORDINATE SYSTEM, TEXAS CENTRAL ZONE (4203), NORTH AMERICAN DATUM 83 (NAD-83) 1983.

STATE OF TEXAS
CRAIG C. MACON
GEOLOGY
1301
LICENSED
PROFESSIONAL GEOSCIENTIST

11/16/22

0 140 280
SCALE IN FEET

LOWER COLORADO RIVER AUTHORITY

Figure 1
Potentiometric Surface Map of the Intermediate Sand
January 2022

PROJECT: 22482	BY: SLB	REVISIONS
DATE: 05/02/2022	CHECKED: CCM	

Bullock, Bennet & Associates, LLC
Engineering and Geoscience
Texas Registrations: Engineering F-8542, Geoscience 50127

Bullock, Bennett & Associates, LLC

www.bbaengineering.com
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Technical Memorandum

To: Rebecca D. Jones, P.G.
Environmental Coordinator
Lower Colorado River Authority (LCRA)

Project No. 22482

From: Charlie Macon, P.G.

Date: November 17, 2022

Subject: CCR GROUNDWATER DETECTION MONITORING PROGRAM EVALUATION OF THIRD QUARTER 2022 POTENTIOMETRIC SURFACE DATA COLLECTED FROM THE CBL

1.0 INTRODUCTION

This Technical Memorandum (Tech Memo) documents the evaluation of the Intermediate Sand groundwater bearing unit potentiometric surface data obtained during the Third Quarter-2022 Combustion Byproducts Landfill (CBL) Groundwater Monitoring Event. The groundwater monitoring is being performed as part of the CBL Groundwater Monitoring Program (GMP) in accordance with 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 measurement of the potentiometric surface evaluation and determination of groundwater flow direction and flow rate is conducted for each groundwater monitoring event pursuant to the GMP requirements of 40 CFR 257.93(c) and 30 Tex. Admin. Code §352.931.

2.0 POTENTIOMETRIC SURFACE DATA COLLECTION, MAPPING, AND GRADIENT DETERMINATION

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 monitoring well casing elevation. Table 1 presents the summary of groundwater measurements obtained from the CBL Groundwater Monitoring network in the Third Quarter–2022 event.

Based on the measured groundwater elevations, a potentiometric surface map was prepared to document the Third Quarter-2022 monitoring event (Figure 1). The map shows a groundwater potentiometric surface that is relatively consistent with those presented for all prior CBL GMP monitoring events. As illustrated by the map shown in Figure 1, the groundwater flow direction is to the south-southwest. The calculated gradient for the western portion of the CBL is 0.011 ft/ft. For the eastern portion of the CBL, a gradient of 0.028 ft/ft was calculated.

3.0 GROUNDWATER FLOW RATE CALCULATION

Groundwater flow rate was calculated along two transects, one along the western area having the lower gradient, and one along the eastern area having the higher gradient. 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. The hydraulic conductivity value is based on the rising-head slug test data obtained from monitoring well CBL-302I. Consistent with past evaluations of the Intermediate Sand, this hydraulic conductivity value was utilized for the Third Quarter-2022 event to calculate the groundwater flow rate. Also consistent with past evaluations, an assumed porosity value of 0.30 was utilized based on the dominant aquifer lithology (clayey sands and silty sands).

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

Eastern Transect (gradient of 0.028 ft/ft): 61 ft/yr (rounded)
Western Transect (gradient of 0.011 ft/ft): 24 ft/yr (rounded)

4.0 REFERENCES

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
July 2022 Potentiometric Surface Data
Fayette Power Project
La Grange, Texas

Well ID	CBL-340I		CBL-301I		CBL-302I		CBL-306I		CBL-308I		CBL-341I	
Well Top of Casing Elevation	376.98		372.11		358.99		339.96		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)
7/27/2022	NM	NM	35.08	337.03	NM	NM	NM	NM	24.82	343.85	NM	NM
7/28/2022	24.95	352.03	NM	NM	12.34	346.65	12.20	327.76	NM	NM	16.58	350.07

Notes:
NM = Not Measured
ft btoc = feet below top of casing
ft NGVD =feet above National Geodetic Vertical Datum

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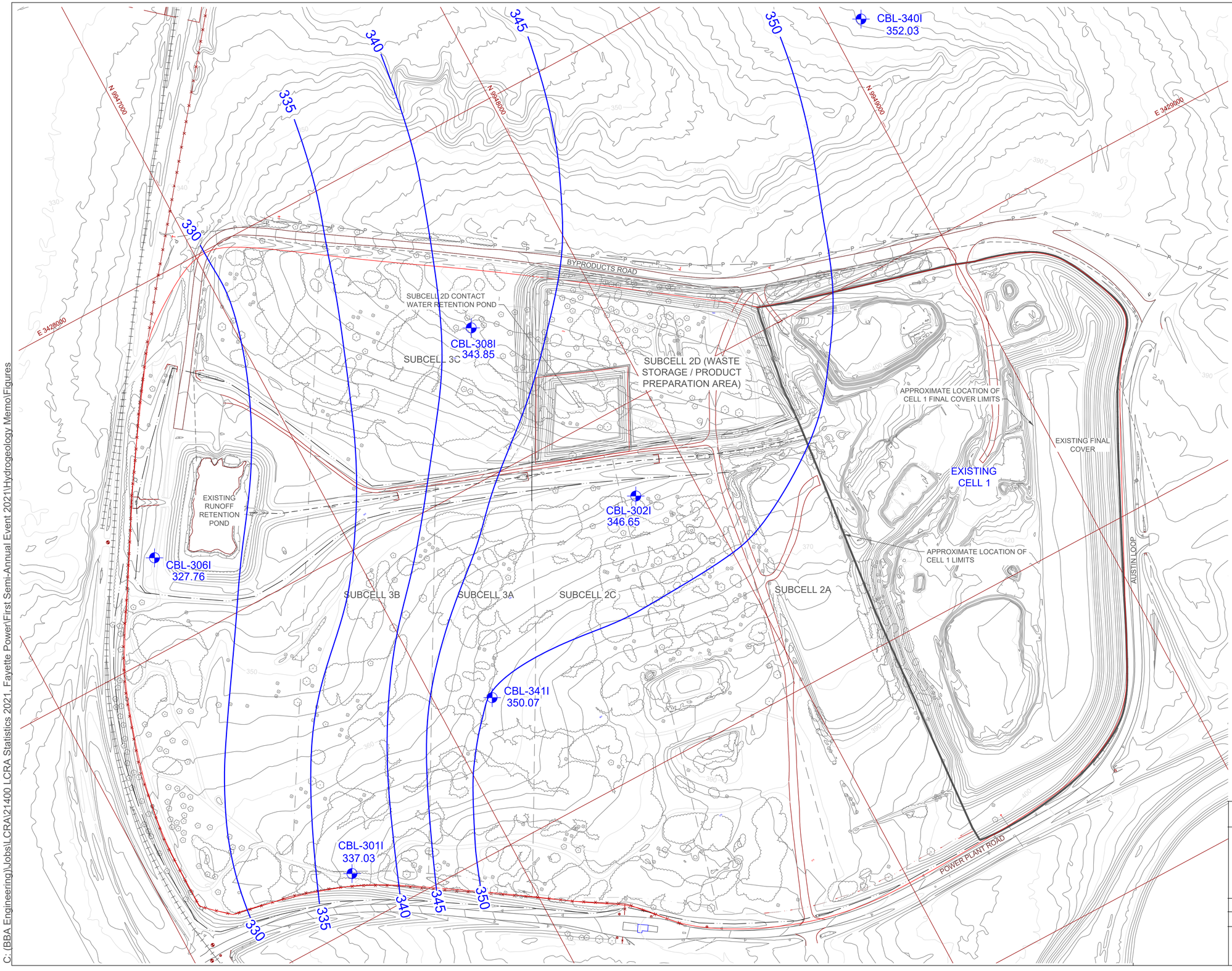

LEGEND

- CBL UNIT BOUNDARY
- EXISTING GROUND ELEVATION (FT,MSL) (NOTES 1,2)
- EXISTING TOP OF CLAY LINER ELEVATION (FT,MSL) (NOTE 2)
- EXISTING ROAD
- EXISTING BUILDING
- EXISTING RAILROAD
- COORDINATE GRID (NOTE 2)
- EXISTING FENCE
- PROPOSED PHASE BOUNDARY
- PROPOSED LIMIT OF WASTE
- POWER LINE
- WELLS
- CBL GROUNDWATER MONITORING WELL WITH POTENTIOMETRIC SURFACE ELEVATION INDICATED IN FEET ABOVE NAVD 1988.
- POTENTIOMETRIC SURFACE CONTOUR LINE
- INFERRED GROUNDWATER FLOW DIRECTION

NOTES:

1. THE EXISTING CONTOUR BASE MAP SHOWN ON THIS DRAWING WAS COMPILED USING AN AERIAL SURVEY BASED ON PHOTOGRAPHY PERFORMED ON 23 OCTOBER 2013 BY SURDEX CORPORATION AND LIDAR DATA PUBLISHED DECEMBER 2008 AND PROVIDED BY LCRA SURVEYING, MAPPING, AND GIS.
2. ELEVATIONS ARE IN FEET (FT) AS DEFINED BY THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988. STATE PLANE COORDINATE GRID CORRESPONDS TO TEXAS STATE PLANE COORDINATE SYSTEM, TEXAS CENTRAL ZONE (4203), NORTH AMERICAN DATUM 83 (NAD-83) 1983.

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11-17-2022

0 140 280
SCALE IN FEET

LOWER COLORADO RIVER AUTHORITY

Figure 1
Potentiometric Surface Map of the Intermediate Sand
July 2022

PROJECT: 22482	BY: SLB	REVISIONS
DATE: 11/17/2022	CHECKED: CCM	

Bullock, Bennet & Associates, LLC
Engineering and Geoscience
Texas Registrations: Engineering F-8542, Geoscience 50127

APPENDIX B

Results of the Groundwater Statistics for the Lower Colorado River Authority
First Semi-Annual Monitoring Event in 2022
Otter Creek Environmental Services, LLC
May 2022

Results of the Groundwater Statistics

for Lower Colorado River Authority Fayette Power Project

First Semi-Annual Monitoring Event in 2022

Prepared for:
Lower Colorado River Authority (LCRA)
Fayette Power Project
LaGrange, TX

Prepared by:
Jeffrey A. Holmgren
Otter Creek Environmental Services, L.L.C.
40W565 Foxwick Court
Elgin, IL 60124
(847) 464-1355

May 2022

INTRODUCTION

This report contains the results of the statistical analyses used to evaluate the groundwater data obtained during the first semi-annual monitoring event in 2022 at the Lower Colorado River Authority (LCRA) Fayette Power Project (FPP) Combustion Byproducts Landfill (CBL), the Coal Combustion Residuals (CCR) unit addressed in this report. The groundwater at the FPP is monitored by wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, CBL-340I, and CBL-341I.

Statistical comparisons and evaluation for statistically significant increases (SSIs) are conducted on all wells with the exception of former background (side-gradient) monitoring well CBL-340I. Based on the Alternative Source Determination (ASD) study conducted in 2018, the identification of natural aquifer heterogeneity resulted in determination that CBL-340I could not be used to reliably characterize the background geochemistry of the groundwater flowing beneath the CCR unit. As such, intrawell analysis of wells potentially affected by CCR operation was selected at that time, and the need for use of CBL-340I geochemical data was negated. A Groundwater Monitoring System Addendum Certification was prepared in 2018, documenting the transition from former interwell analysis to intrawell analysis.

The statistical plan is designed to detect a release from the facility at the earliest indication. An intrawell methodology is described and then applied to the FPP data. The statistical method conforms with the Coal Combustion Residual (CCR) rule (40 CFR 257), USEPA Guidance document ("*Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance"*, March 2009), and the American Society for Testing and Materials (ASTM) standard D6312-98, *Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs*. The intrawell statistical evaluations were completed within 90 days of receipt of laboratory data.

Groundwater Monitoring Program

The groundwater monitoring program (GMP) network for FPP consists of monitoring wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, CBL-340I, and CBL-341I. Each of the groundwater monitoring wells is to be sampled at least semiannually and analyzed for the detection monitoring parameters listed in Appendix III of 40 CFR Part 257, as follows:

Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids

Statistical analysis is conducted on data from all GMP wells with the exception of CBL-340I, as described above. The groundwater data obtained for statistical evaluation during the first semi-annual monitoring event in 2022 are summarized in Attachment A. Historical Appendix III data is summarized in Attachment B.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

The CCR rule for statistical analysis provides several options for evaluating the groundwater data [40 CFR 257.93(f)]. As referenced in Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (EPA 530/R-09-007), the preferred methods for comparing groundwater data are using either prediction limits or using control charts. The control chart procedure offers an advantage over the prediction limits procedure as more data is generated over time, because they generate a graph of compliance data over time and allow for better identification of long-term trends.

An intrawell control chart method was applied to the FPP 2022 Q1 data using the DUMPStat® statistical program. DUMPStat® is a program for the statistical analysis of groundwater monitoring data using methods described in "Statistical Methods for Groundwater Monitoring" by Dr. Robert D. Gibbons. Groundwater statistics are conducted on the Appendix III constituents listed above.

Intrawell statistics

Intrawell statistics compare new measurements to the historical data at each groundwater monitoring well independently. The Unified Guidance-recommended technique for intrawell comparisons is the combined Shewhart-CUSUM control chart. This control chart procedure is useful because it will detect changes in analyte concentrations both in terms of constituent concentration and cumulative concentration increases. This method is also extremely sensitive to sudden and gradual releases. A requirement for constructing these control charts is that the parameter is detected at a frequency greater than or equal to 25%, otherwise the data variance is not properly defined.

The combined Shewhart-CUSUM control chart assumes that the data are independent and normally distributed with a fixed mean and a constant variance. Independent data is much more critical than the normality assumption. To achieve independence, it is recommended that data are collected no more frequently than quarterly to account for seasonal variation. The combined Shewhart-CUSUM control chart is robust to deviations from normality. Because the control charts do not use a specific multiplier based on a normal distribution, it is more conservative to assume normality.

Some groundwater monitoring parameters are not detected at a frequency great enough to generate the combined Shewhart-CUSUM control charts. For constituents that are detected less than 25% of the time at a particular well, the data are plotted as a time series until a sufficient number of data points are available to provide a 99% confidence nonparametric prediction limit. Thirteen independent measurements (with 1 resample) are necessary to achieve a 99% confidence (1% false positive rate) nonparametric prediction limit. Eight independent measurements (for pass 1 of 2 resamples) are necessary to achieve a 99% confidence nonparametric prediction limit. The nonparametric prediction limit is the largest determination out of the data set collected for that well and parameter. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

In developing the statistical background, the historical data must be thoroughly screened for anomalous data due to sampling error, analytical error, or simply by chance alone. An erroneous data point, if not removed prior to the mean and variance computations, would yield a larger control limit thus increasing the false negative rate. The DUMPStat® program screens for outliers using the Dixon test. If the Dixon test indicates an outlier, the value is compared to three times the median value for intrawell analyses. If the value fails both criteria of the two-stage screening, the value is considered a statistical outlier and will not be used in the mean and variance determinations. Anomalous data will still be plotted on the graphs (with a unique symbol) but will not be included in the calculations.

The verification resample plan is an integral function of the statistical plan to reduce the probability that anomalous data obtained after the background has been established, is indicative of a landfill release. Should an indication of an SSI be identified, the resampling plan is implemented by the operator to collect a verification sample within 60 days of identification.

Results of the Intrawell Statistics

The Appendix III parameter data from wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, and CBL-341I were evaluated using the combined Shewhart-CUSUM control chart method.

The initial background was established with the ProUCL software using data obtained in 2016 and 2017. Initial exceedances for boron at CBL-301I and boron at CBL-341I were reported following the second semi-annual monitoring in 2020. Since the boron concentrations determined subsequently in January 2021 at CBL-301I (<0.050 mg/L) and CBL-341I (<0.050 mg/L) do not exceed the baseline threshold values (BTV), the previous exceedances are not statistically significant. BTV will be analogous to control limits in this report and future reports.

As groundwater monitoring at a CCR facility proceeds, it is recommended to update monitoring well background data sets periodically with valid detection monitoring results that are representative of background groundwater quality. Failure to update background data sets will exclude factors such as natural temporal variation, changes in field or laboratory methodologies, and changes in the water table due to meteorological conditions or other influences. Since there were no exceedances attributed to the unit, the background data in this evaluation includes historical data obtained from 2016 through 2020 for wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, and CBL-341I.

A summary of the intrawell statistics is included in Attachment C, Table 1 "Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts." The control charts or time series graphs follow the summary table. For the parameters evaluated, there were no control limit exceedances detected.

A slight increasing trend was detected in the background data for sulfate at CBL-302I.

A control chart factor was selected to provide a balance of the site-wide false positive and false negative rates. A statistical power curve indicates the expected false assessments for the site as a whole. The site-wide false positive rate is 5% and the test becomes sensitive to 3 standard deviation units over background.

CONCLUSIONS

This document describes a comprehensive statistical plan designated for the FPP. The groundwater monitoring network for FPP, utilized for statistical evaluation, consists of monitoring wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, and CBL-341I. Each of the groundwater monitoring wells is sampled and analyzed for the detection monitoring parameters listed in Appendix III of 40 CFR Part 257. The current groundwater data was compared to background using intrawell control charts. Using intrawell comparisons, there were no control limit exceedances detected.

Attachment A

Groundwater Data obtained during the First Semi-Annual Monitoring Event in 2022

Table 1

Analytical Data Summary for 1/26/2022 to 1/28/2022

Constituents	Units	CBL-301I	CBL-302I	CBL-306I	CBL-308I	CBL-341I
Boron, Total	mg/L	<.0500	<.0500	.0548	<.0500	<.0500
Calcium, Total	mg/L	999	754	212	974	1040
Chloride	mg/L	2440	1310	384	2020	1810
Fluoride	mg/L	<.05	<.05	2.99	1.75	<.05
pH	S.U.	6.27	6.32	6.87	6.36	6.26
Sulfate	mg/L	406	1340	510	1310	320
Total Dissolved Solids	mg/L	4700	4510	1730	5320	3800

Attachment B

Historical Appendix III Groundwater Data

Table 1

Analytical Data Summary for CBL-301I

Constituents	Units	1/21/2016	5/4/2016	7/27/2016	10/24/2016	1/23/2017	3/22/2017	5/18/2017	7/26/2017	2/8/2018	7/25/2018	1/17/2019	5/2/2019	7/31/2019
Boron, Total	mg/L	<.0500	<.0500	<.0500	<.0500	<.0500	<.0500	.0707	<.0500	<.0500	<.0500	<.0500	<.0500	<.0500
Calcium, Total	mg/L	905	949	925	978	1000	1030	1060	961	873	993	156	762	783
Chloride	mg/L	2300	2160	2290	2250	3200	2390	2420	2500	2480	1330	619	1910	2240
Fluoride	mg/L	<.250	<.500	<.500	<.250	.312	<.500	<.500	<.500	<.500	<.500	.219	.112	.051
pH	S.U.	6.33	6.26	5.95	6.23	6.26	6.31	5.95	6.02	6.17	6.04	7.16	6.14	6.19
Sulfate	mg/L	336	311	336	326	488	337	342	381	344	196	104	398	332
Total Dissolved Solids	mg/L	4380	5050	6020	4570	6140	6570	6430	4290	5120	5390	1460	5650	6040

Table 1

Analytical Data Summary for CBL-301I

Constituents	1/28/2020	9/17/2020	1/26/2021	7/20/2021	9/7/2021	1/26/2022
Boron, Total	<.0500	.0801	<.0500	.0826	<.0500	<.0500
Calcium, Total	851	1060	1130	1100		999
Chloride	2360	2270	2420	2590		2440
Fluoride	.130	<.250	<.500	2.680	<.500	<.050
pH	6.26	6.13	6.06	6.13	6.14	6.27
Sulfate	349	350	374	419		406
Total Dissolved Solids	4790	6340	6060	5870		4700

Table 2

Analytical Data Summary for CBL-302I

Constituents	Units	1/22/2016	5/4/2016	7/27/2016	10/24/2016	1/23/2017	3/22/2017	5/16/2017	7/27/2017	2/8/2018	7/27/2018	1/22/2019	7/31/2019	1/30/2020
Boron, Total	mg/L	<.0500	<.0500	<.0500	.1560	<.0500	.2970	<.0500	<.0500	<.0500	<.0500	<.0500	<.0500	<.0500
Calcium, Total	mg/L	1030	1010	1030	1070	1100	1090	1100	1040	934	995	855	914	838
Chloride	mg/L	2190	2130	2210	2170	2080	2050	2230	2040	2080	1980	1960	1540	1540
Fluoride	mg/L	<.2500	<.5000	<.5000	<.2500	.3320	<.5000	<.5000	<.5000	.1120	<.5000	.0402	.0605	.1930
pH	S.U.	6.29	6.01	5.17	7.75	5.36	5.40	4.94	6.20	6.21	5.77	6.44	6.15	6.34
Sulfate	mg/L	1020	993	1090	1180	1150	1120	1230	1180	1240	1390	1250	1260	1350
Total Dissolved Solids	mg/L	5500	5390	6850	4210	6430	6460	5860	5120	6010	5510	5060	4190	4790

Table 2

Analytical Data Summary for CBL-302I

Constituents	9/17/2020	1/28/2021	7/21/2021	9/7/2021	1/27/2022
Boron, Total	<.0500	<.0500	.0743		<.0500
Calcium, Total	853	1020	844		754
Chloride	1410	1370	1380		1310
Fluoride	<.2500	<.5000	2.2500	<.2500	<.0500
pH	6.20	6.21	6.06	6.28	6.32
Sulfate	1280	1290	1350		1340
Total Dissolved Solids	4990	4800	4810		4510

Table 3

Analytical Data Summary for CBL-306I

Constituents	Units	1/21/2016	5/4/2016	7/26/2016	10/24/2016	1/19/2017	3/22/2017	5/18/2017	7/27/2017	2/8/2018	7/27/2018	1/16/2019	7/31/2019	8/23/2019
Boron, Total	mg/L	<.0500	.0717	.0998	.0556	<.0500	.1240	.0832	.0531	<.0500	<.0500	<.0500	.0824	.0500
Calcium, Total	mg/L	137			198	174	204	205	234	230	275	180	106	226
Chloride	mg/L	155	20		330	197	231	289	350	385	283	215	538	318
Fluoride	mg/L	2.50	1.00	1.37	2.38	1.85	12.60	2.20	2.91	2.81	2.95	1.98	9.26	2.66
pH	S.U.	7.09	6.69	6.95	6.72	7.29	4.41	5.61	6.94	6.67	6.86	6.78	6.92	6.83
Sulfate	mg/L	266.0	29.5	139.0	432.0	270.0	340.0	412.0	513.0	493.0	406.0	292.0	816.0	387.0
Total Dissolved Solids	mg/L	1280	431	790	1150	1320	1460	1440	1280	1760	1450	1220	676	1710

Table 3

Analytical Data Summary for CBL-306I

Constituents	1/29/2020	9/19/2020	1/28/2021	7/21/2021	1/27/2022
Boron, Total	<.0500	.0773	<.0500	.0927	.0548
Calcium, Total	247	260	257	216	212
Chloride	445	420	292	255	384
Fluoride	2.83	2.72	2.90	2.42	2.99
pH	6.70	7.16	6.84	6.55	6.87
Sulfate	561.0	506.0	388.0	336.0	510.0
Total Dissolved Solids	1830	1730	1420	1320	1730

Table 4

Analytical Data Summary for CBL-308I

Constituents	Units	1/22/2016	5/4/2016	7/26/2016	10/24/2016	1/19/2017	3/22/2017	5/16/2017	7/26/2017	2/6/2018	7/25/2018	1/18/2019	7/31/2019	1/29/2020
Boron, Total	mg/L	<.0500	.1210	.1860	.2560	<.0500	.5450	.1090	.0799	<.0500	<.0500	<.0500	<.0500	<.0500
Calcium, Total	mg/L	903	870	911	939	919	947	954	878	859	863	760	840	745
Chloride	mg/L	2760	2580	2680	2870	2360	2530	2740	2760	2750	2680	2240	2290	2110
Fluoride	mg/L	1.49	2.30	1.64	1.59	1.33	9.05	1.70	1.90	1.76	2.10	1.68	1.62	1.60
pH	S.U.	6.36	6.13	5.95	6.27	6.83	6.27	5.54	6.27	6.26	6.07	6.39	6.25	6.37
Sulfate	mg/L	1490	1410	1490	1550	1320	1470	1580	1550	1570	1540	1520	1420	1340
Total Dissolved Solids	mg/L	6820	6120	7890	10200	9620	7260	6590	6480	6200	6320	4760	5820	5980

Table 4

Analytical Data Summary for CBL-308I

Constituents	9/18/2020	1/28/2021	7/21/2021	1/27/2022
Boron, Total	.1030	<.0500	.1300	<.0500
Calcium, Total	838	830	684	974
Chloride	2410	2200	1780	2020
Fluoride	1.33	1.44	1.74	1.75
pH	6.22	6.26	6.16	6.36
Sulfate	1310	1340	1240	1310
Total Dissolved Solids	6860	6190	5270	5320

Table 5

Analytical Data Summary for CBL-341I

Constituents	Units	1/23/2017	2/23/2017	3/22/2017	4/20/2017	5/16/2017	6/20/2017	7/27/2017	2/8/2018	8/24/2018	1/22/2019	7/31/2019	1/30/2020	9/17/2020
Boron, Total	mg/L	<.0500	<.0500	<.0500	.0587	.0896	.0668	.0507	<.0500	<.0500	<.0500	<.0500	<.0500	.1020
Calcium, Total	mg/L	854	870	906	898	860	950	829	810	824	782	714	767	814
Chloride	mg/L	1600	2000	1780	1770	1900	1820	1970	2110	1910	1790	1650	1780	1700
Fluoride	mg/L	.5300	<.5000	<.5000	<.5000	<.5000	.3350	.0550	.1060	.1140	.0546	.1000	.1530	<.2500
pH	S.U.	5.74		5.72	5.73	5.54	6.19	6.21	6.18	5.82	6.38	6.23	6.27	6.14
Sulfate	mg/L	307	404	346	336	369	363	419	383	376	358	329	351	336
Total Dissolved Solids	mg/L	5000	4520	5110	4240	4840	5940	4150	4320	4800	3870	5370	4900	4930

Table 5

Analytical Data Summary for CBL-341I

Constituents	1/27/2021	7/22/2021	9/7/2021	1/27/2022
Boron, Total	<.0500	.1110		<.0500
Calcium, Total	874	852		1040
Chloride	1800	1750		1810
Fluoride	<.5000	1.1600	<.2500	<.0500
pH	6.06	5.98	6.18	6.26
Sulfate	324	316		320
Total Dissolved Solids	3940	4520		3800

Attachment C

Summary Tables and Graphs for the Intrawell Comparisons

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Boron, Total	mg/L	CBL-301I	15	4	19			0.0500	0.0500			0.0801	nonpar	.99	**
Boron, Total	mg/L	CBL-302I	14	3	17			0.0743	0.0500			0.2970	nonpar	.99	**
Boron, Total	mg/L	CBL-306I	15	3	18	0.0665	0.0228	0.0927	0.0548	0.0756	0.0665	0.1806	normal		
Boron, Total	mg/L	CBL-308I	14	3	17	0.1250	0.1357	0.1300	0.0500	0.1250	0.1250	0.8036	normal		
Boron, Total	mg/L	CBL-341I	13	3	16	0.0591	0.0172	0.1110	0.0500	0.0981	0.0591	0.1452	normal		
Calcium, Total	mg/L	CBL-301I	14	3	18	937.8571	94.2189	1100.0000	999.0000	1150.8144	1141.2931	1408.9518	normal		
Calcium, Total	mg/L	CBL-302I	14	3	17	989.9286	94.3541	844.0000	754.0000	989.9286	989.9286	1461.6988	normal		
Calcium, Total	mg/L	CBL-306I	13	3	18	205.8462	47.9997	216.0000	212.0000	205.8462	205.8462	445.8448	normal		
Calcium, Total	mg/L	CBL-308I	14	3	17	873.2857	63.6389	684.0000	974.0000	873.2857	926.2708	1191.4803	normal		
Calcium, Total	mg/L	CBL-341I	13	3	16	836.7692	63.0491	852.0000	1040.0000	836.7692	992.7132	1152.0149	normal		
Chloride	mg/L	CBL-301I	14	3	18	2292.8571	394.9183	2590.0000	2440.0000	2293.8113	2292.8571	4267.4485	normal		
Chloride	mg/L	CBL-302I	14	3	17	1972.1429	271.4967	1380.0000	1310.0000	1972.1429	1972.1429	3329.6262	normal		
Chloride	mg/L	CBL-306I	13	3	18	319.6923	108.7837	255.0000	384.0000	319.6923	319.6923	863.6109	normal		
Chloride	mg/L	CBL-308I	14	3	17	2554.2857	234.4458	1780.0000	2020.0000	2554.2857	2554.2857	3726.5147	normal		
Chloride	mg/L	CBL-341I	13	3	16	1829.2308	144.5373	1750.0000	1810.0000	1829.2308	1829.2308	2551.9172	normal		
Fluoride	mg/L	CBL-301I	15	4	19	0.3883	0.1724	0.5000	0.0500	0.3883	0.3883	1.2502	normal		
Fluoride	mg/L	CBL-302I	14	4	18	0.3741	0.1872	0.2500	0.0500	0.3741	0.3741	1.3103	normal		
Fluoride	mg/L	CBL-306I	13	3	18	2.3200	0.6159	2.4200	2.9900	2.3200	2.5280	5.3997	normal		
Fluoride	mg/L	CBL-308I	13	3	17	1.6954	0.2759	1.7400	1.7500	1.6954	1.6954	3.0751	normal		
Fluoride	mg/L	CBL-341I	13	4	17	0.3037	0.2058	0.2500	0.0500	0.5477	0.3037	1.3325	normal		
pH	S.U.	CBL-301I	15	4	19	6.2267	0.2859	6.1400	6.2700	6.2267	6.2267	4.80 - 7.66	normal		
pH	S.U.	CBL-302I	14	4	18	6.0164	0.6925	6.2800	6.3200	6.0164	6.0164	2.55 - 9.48	normal		
pH	S.U.	CBL-306I	15	3	18	6.6413	0.7227	6.5500	6.8700	6.6413	6.6413	3.03 - 10.25	normal		
pH	S.U.	CBL-308I	14	3	17	6.2271	0.2799	6.1600	6.3600	6.2271	6.2271	4.83 - 7.63	normal		
pH	S.U.	CBL-341I	12	4	17	6.0125	0.2802	6.1800	6.2600	6.0125	6.0499	4.61 - 7.41	normal		
Sulfate	mg/L	CBL-301I	14	3	18	344.7143	61.2164	419.0000	406.0000	373.0877	388.4611	650.7964	normal		
Sulfate	mg/L	CBL-302I	14	3	17	1195.2143	114.4648	1350.0000	1340.0000	1273.0886	1332.0257	1767.5381	normal		
Sulfate	mg/L	CBL-306I	14	3	18	416.6429	163.4642	336.0000	510.0000	416.6429	416.6429	1233.9640	normal		
Sulfate	mg/L	CBL-308I	14	3	17	1468.5714	93.7146	1240.0000	1310.0000	1468.5714	1468.5714	1937.1442	normal		
Sulfate	mg/L	CBL-341I	13	3	16	359.7692	30.9493	316.0000	320.0000	359.7692	359.7692	514.5157	normal		
Total Dissolved Solids	mg/L	CBL-301I	14	3	18	5484.2857	791.9083	5870.0000	4700.0000	5484.2857	5484.2857	9443.8270	normal		
Total Dissolved Solids	mg/L	CBL-302I	14	3	17	5455.0000	806.9387	4810.0000	4510.0000	5455.0000	5455.0000	9489.6933	normal		
Total Dissolved Solids	mg/L	CBL-306I	15	3	18	1301.8000	409.5196	1320.0000	1730.0000	1301.8000	1422.8603	3349.3981	normal		
Total Dissolved Solids	mg/L	CBL-308I	14	3	17	6922.8571	1459.6756	5270.0000	5320.0000	6922.8571	6922.8571	14221.2350	normal		
Total Dissolved Solids	mg/L	CBL-341I	13	3	16	4768.4615	554.2239	4520.0000	3800.0000	4768.4615	4768.4615	7539.5809	normal		

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

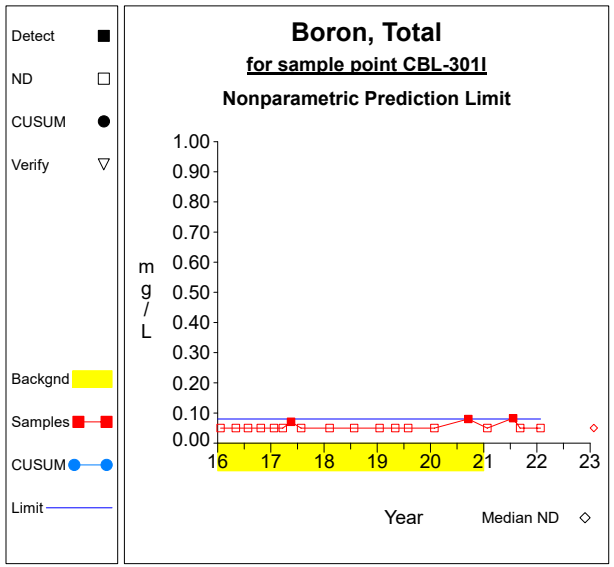
Table 4

Dixon's Test Outliers
1% Significance Level

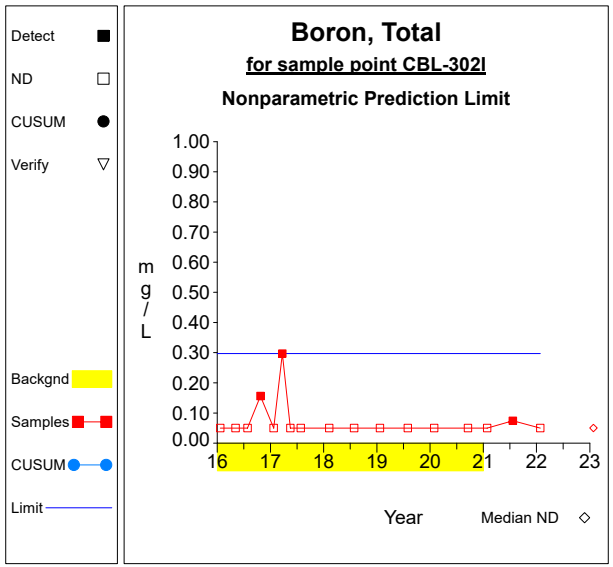
Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Calcium, Total	mg/L	CBL-301I	01/17/2019	156.0000		01/21/2016-09/17/2020	15	0.6177
Chloride	mg/L	CBL-301I	01/17/2019	619.0000		01/21/2016-09/17/2020	15	0.6177
Chloride	mg/L	CBL-306I	05/04/2016	20.0000		01/21/2016-09/19/2020	14	0.6403
Fluoride	mg/L	CBL-306I	03/22/2017	12.6000		01/21/2016-09/19/2020	15	0.6403
Fluoride	mg/L	CBL-306I	07/31/2019	9.2600		01/21/2016-09/19/2020	15	0.6403
Fluoride	mg/L	CBL-308I	03/22/2017	9.0500		01/22/2016-09/18/2020	14	0.6403
Sulfate	mg/L	CBL-301I	01/17/2019	104.0000		01/21/2016-09/17/2020	15	0.6177
Sulfate	mg/L	CBL-306I	05/04/2016	29.5000		01/21/2016-09/19/2020	15	0.6177
Total Dissolved Solids	mg/L	CBL-301I	01/17/2019	1460.0000		01/21/2016-09/17/2020	15	0.6177

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

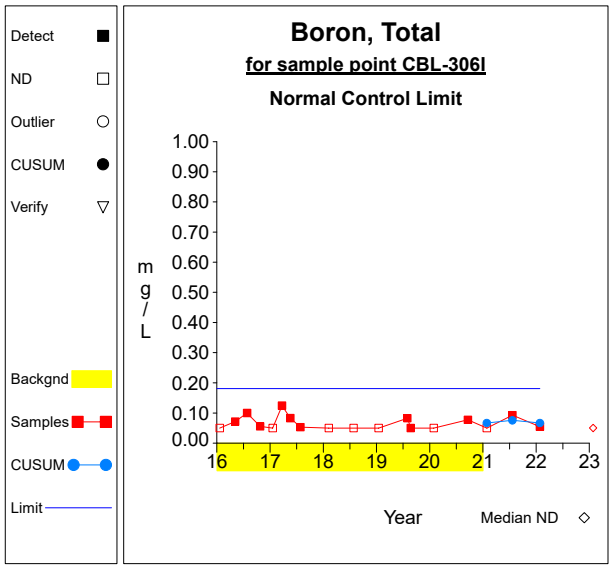
Intra-Well Control Charts / Prediction Limits



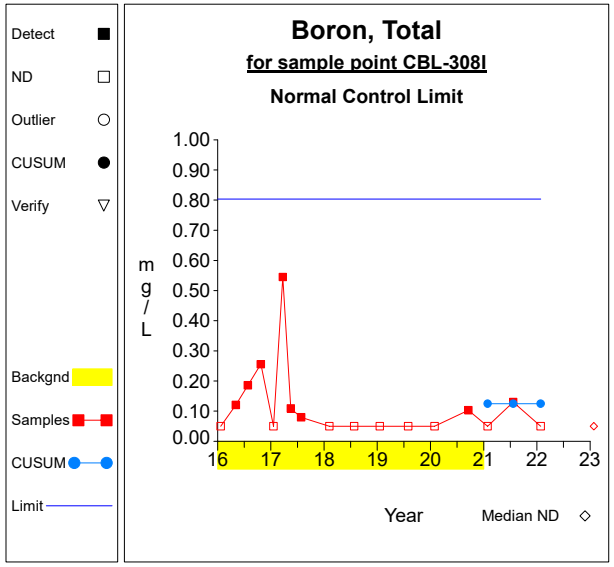
Graph 1



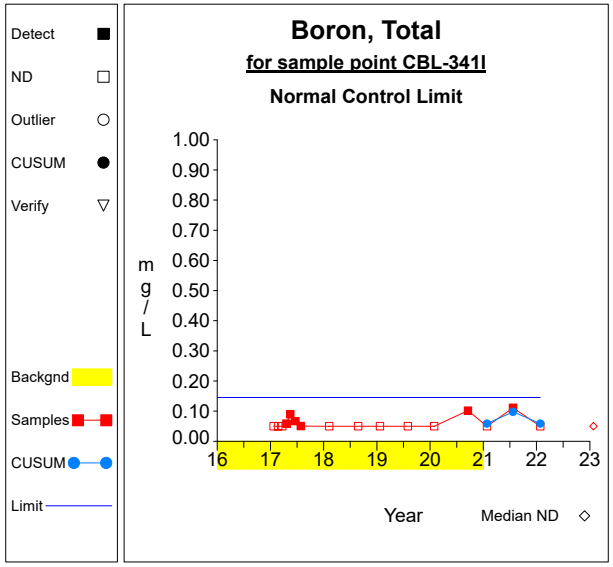
Graph 2



Graph 3



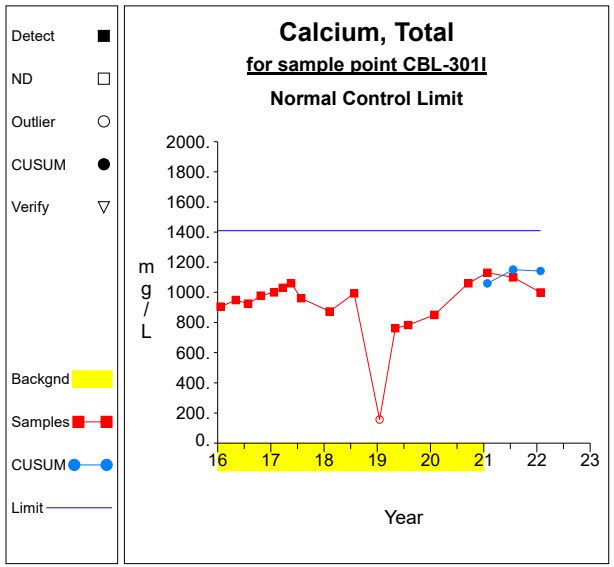
Graph 4



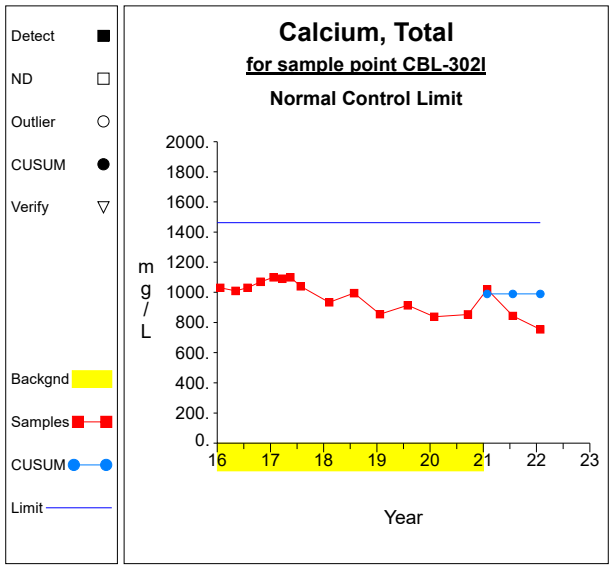
Graph 5

Prepared by: Otter Creek Environmental

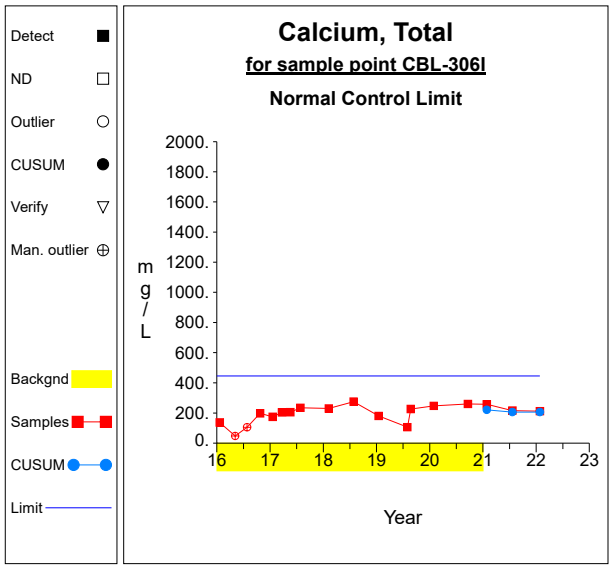
Intra-Well Control Charts / Prediction Limits



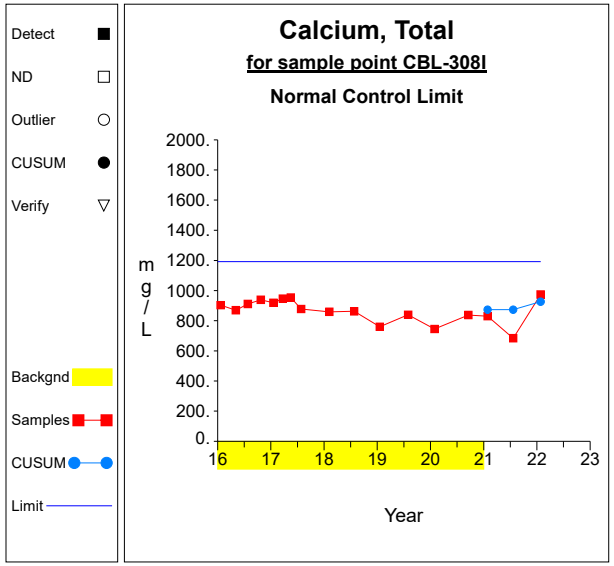
Graph 6



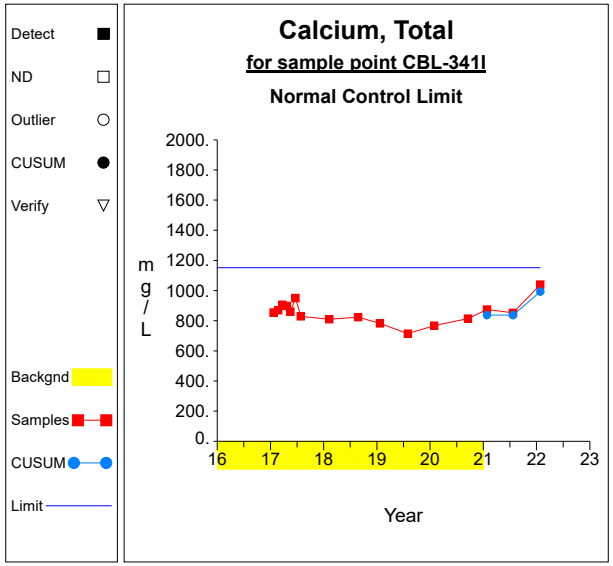
Graph 7



Graph 8

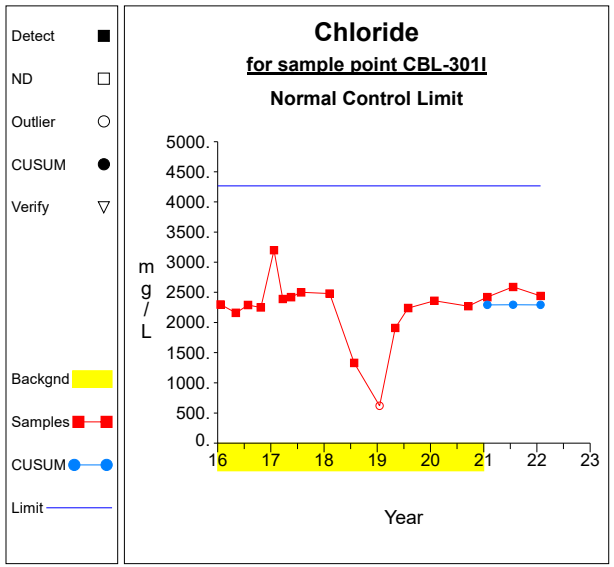


Graph 9

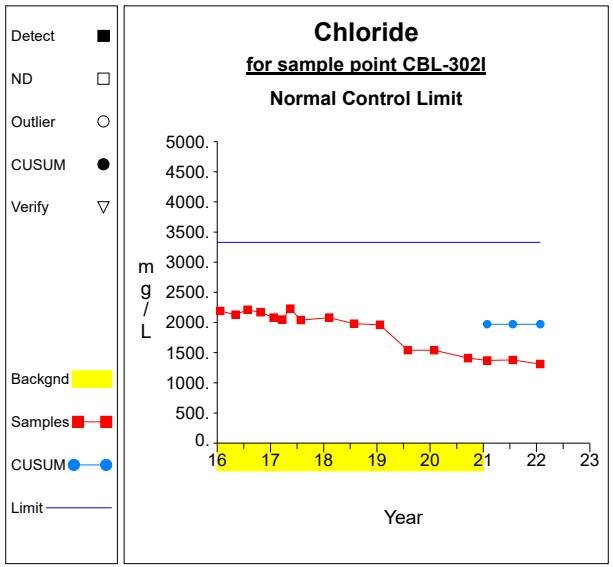


Graph 10

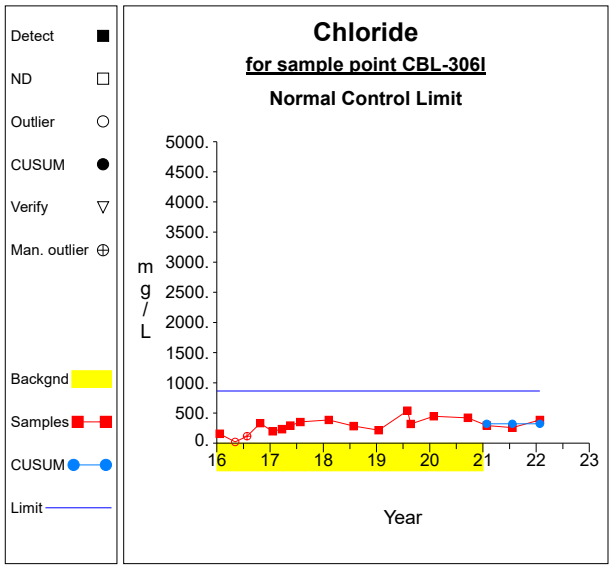
Intra-Well Control Charts / Prediction Limits



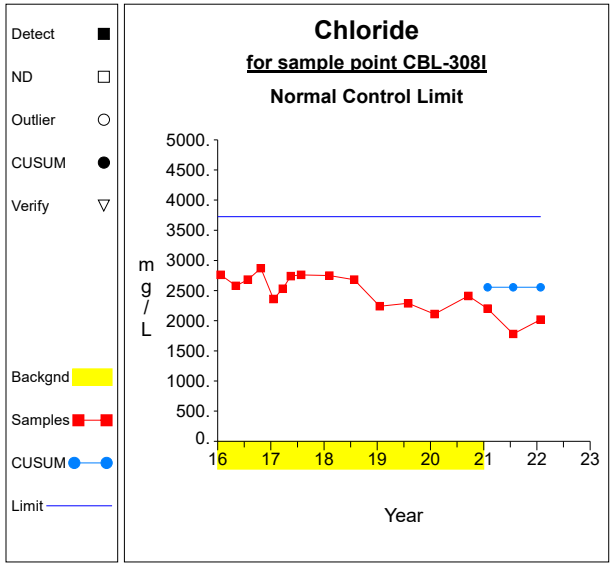
Graph 11



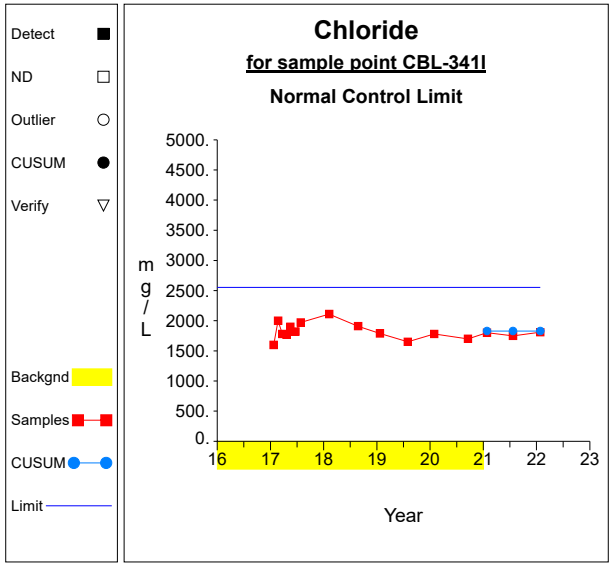
Graph 12



Graph 13



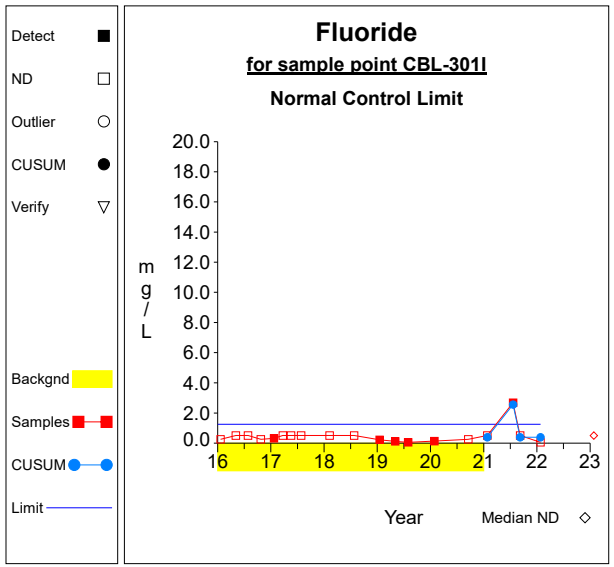
Graph 14



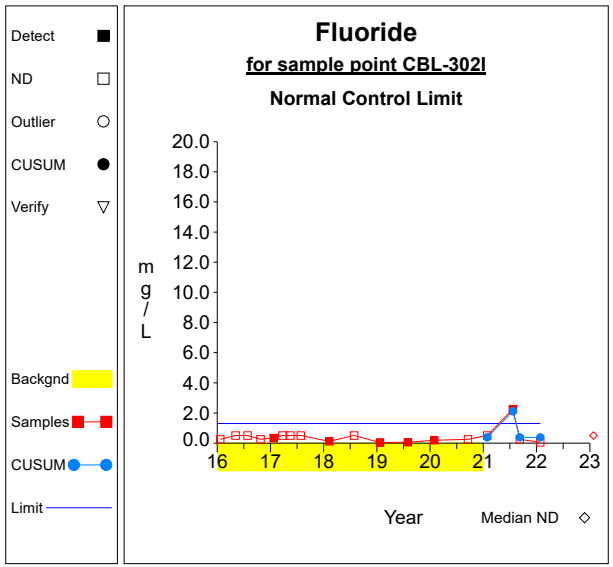
Graph 15

Prepared by: Otter Creek Environmental

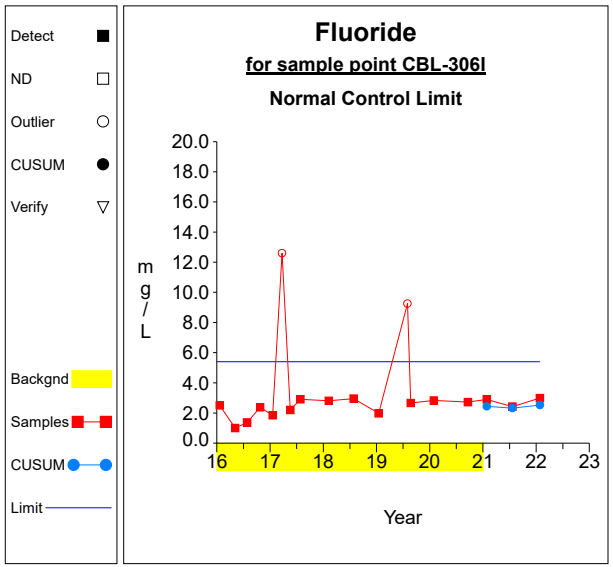
Intra-Well Control Charts / Prediction Limits



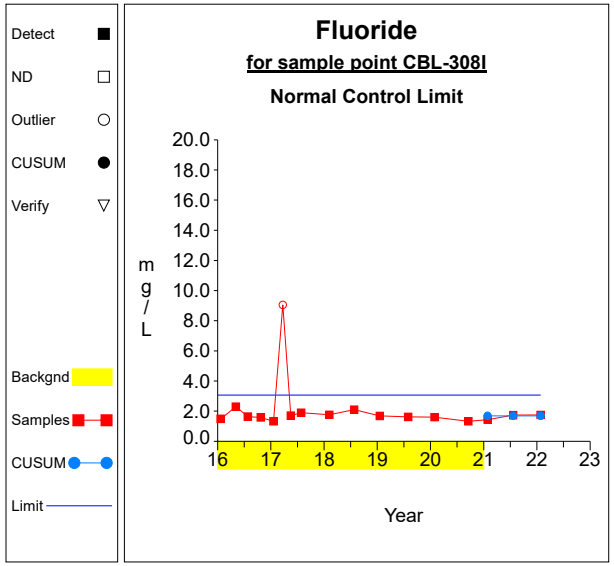
Graph 16



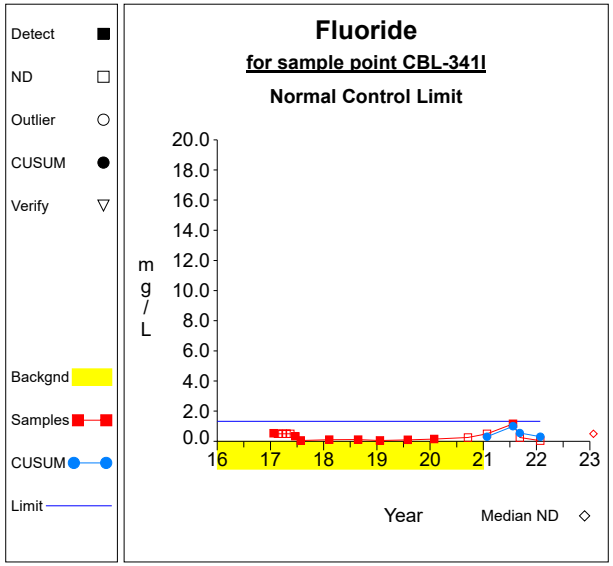
Graph 17



Graph 18

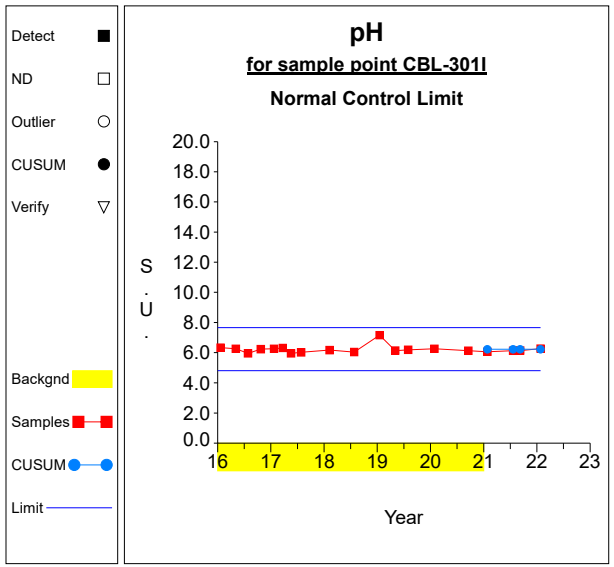


Graph 19

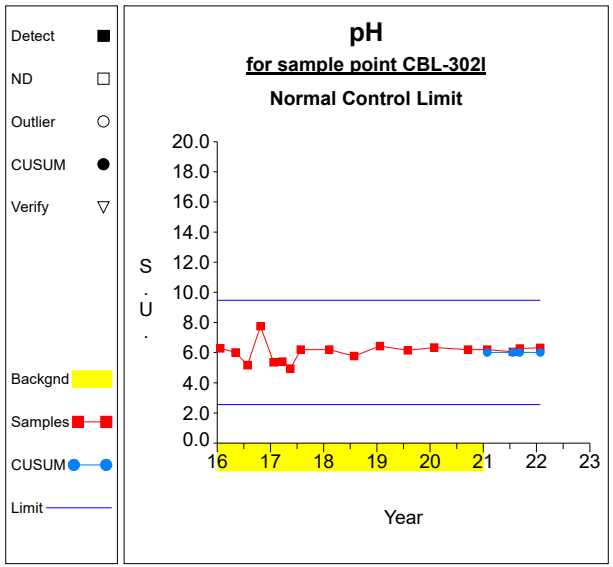


Graph 20

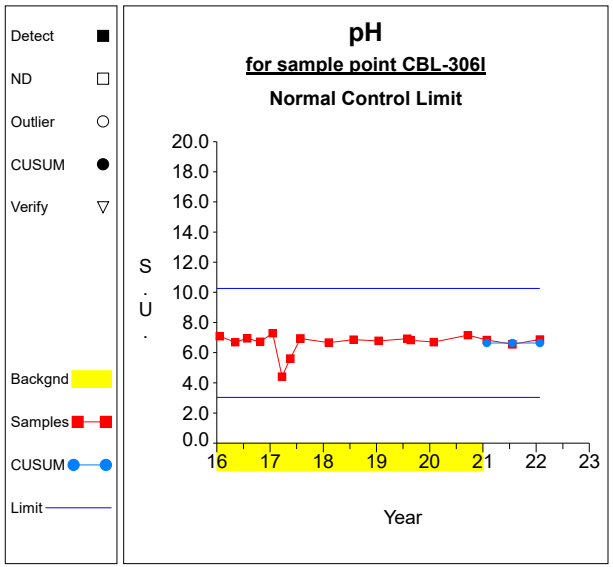
Intra-Well Control Charts / Prediction Limits



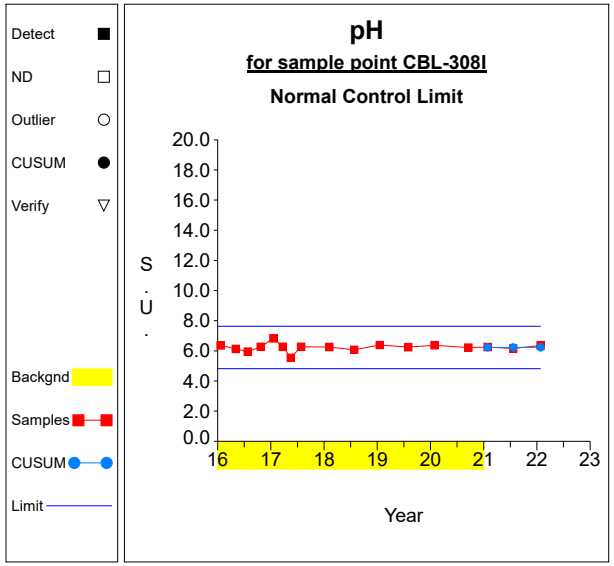
Graph 21



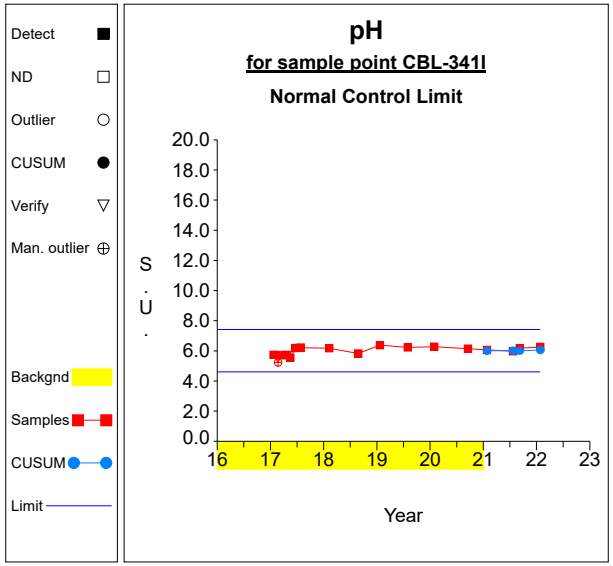
Graph 22



Graph 23

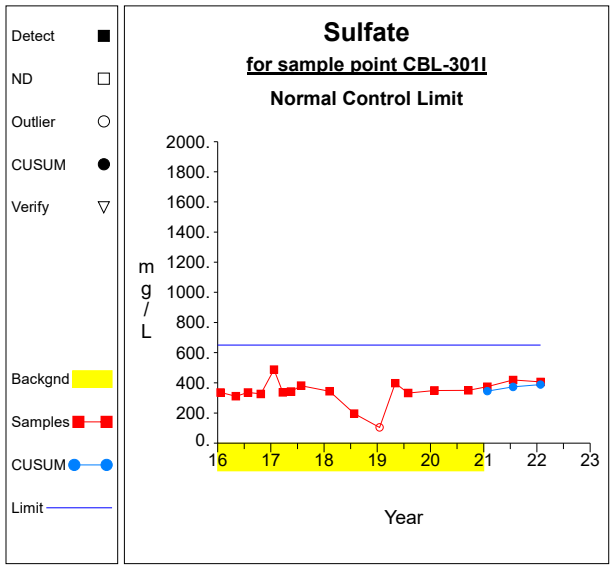


Graph 24

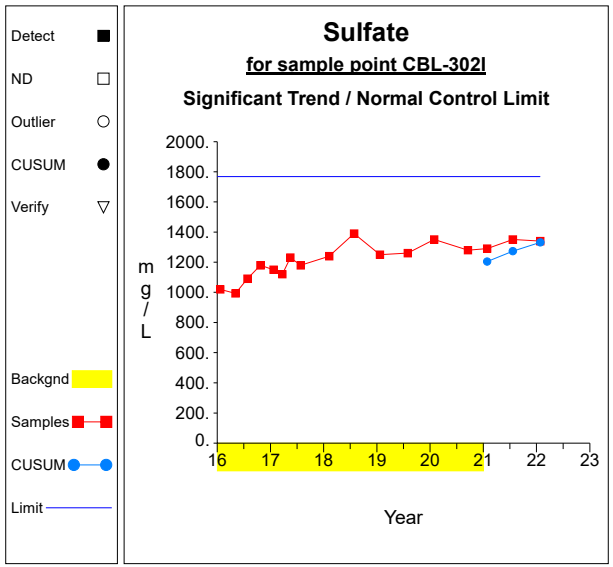


Graph 25

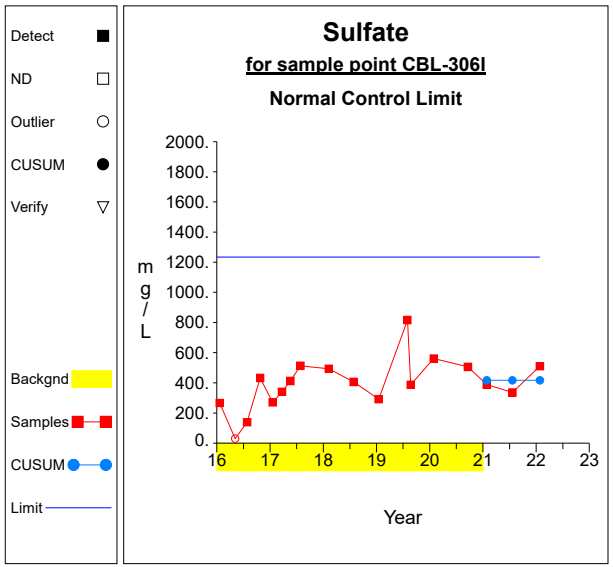
Intra-Well Control Charts / Prediction Limits



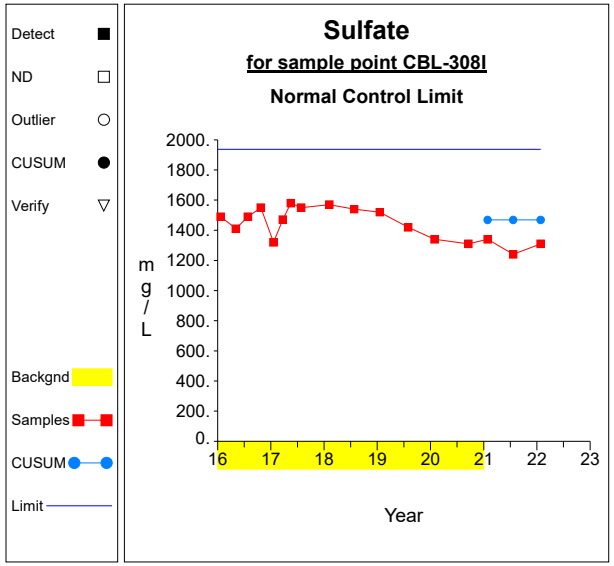
Graph 26



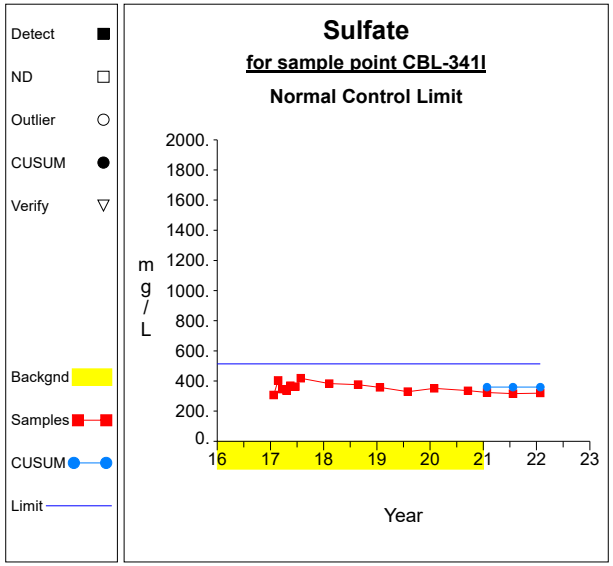
Graph 27



Graph 28



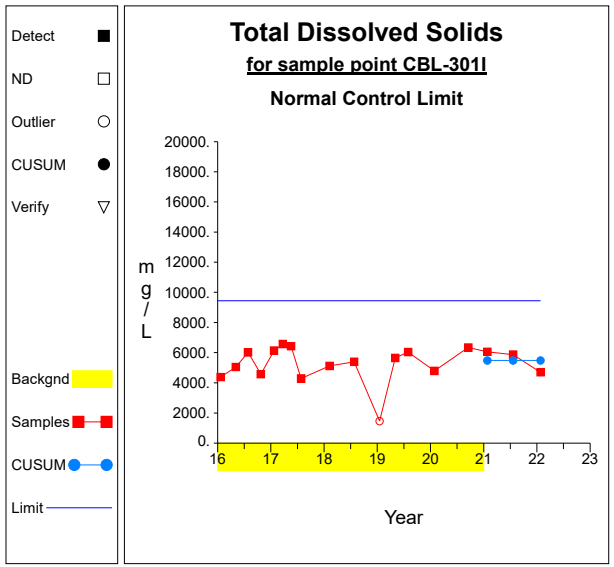
Graph 29



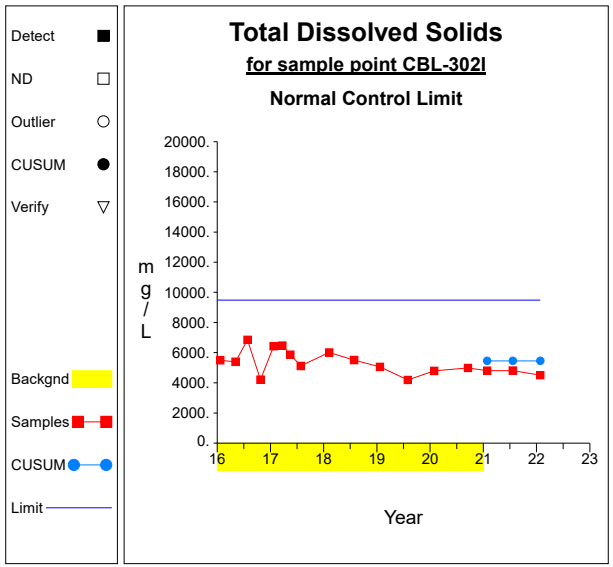
Graph 30

Prepared by: Otter Creek Environmental

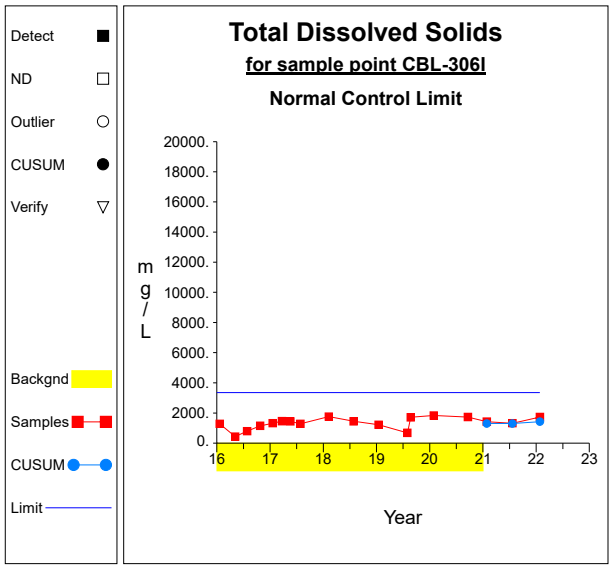
Intra-Well Control Charts / Prediction Limits



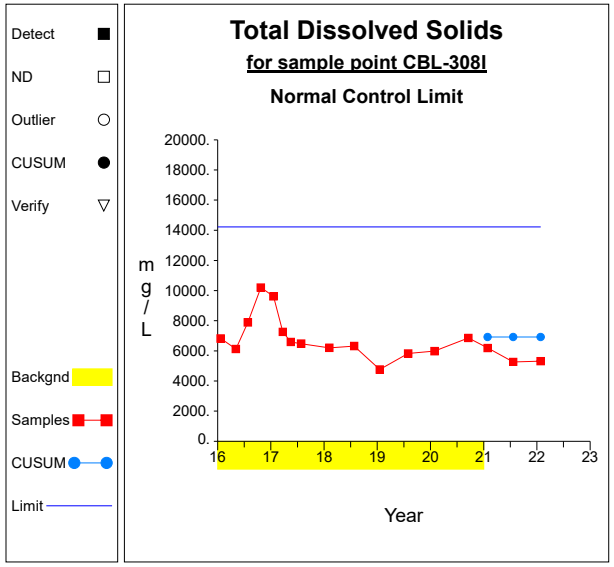
Graph 31



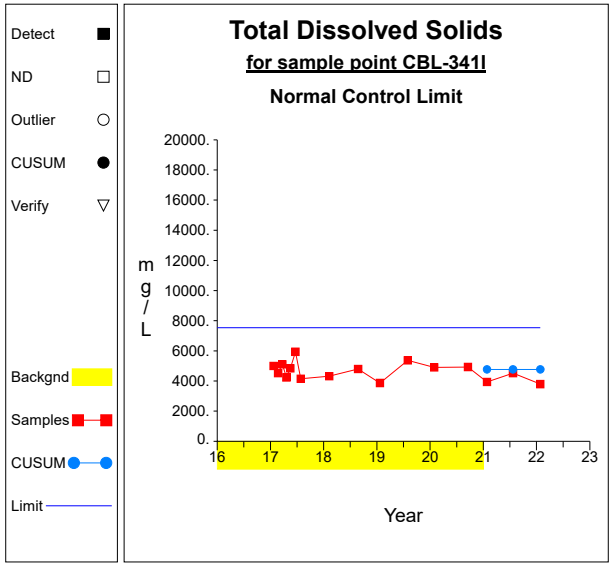
Graph 32



Graph 33

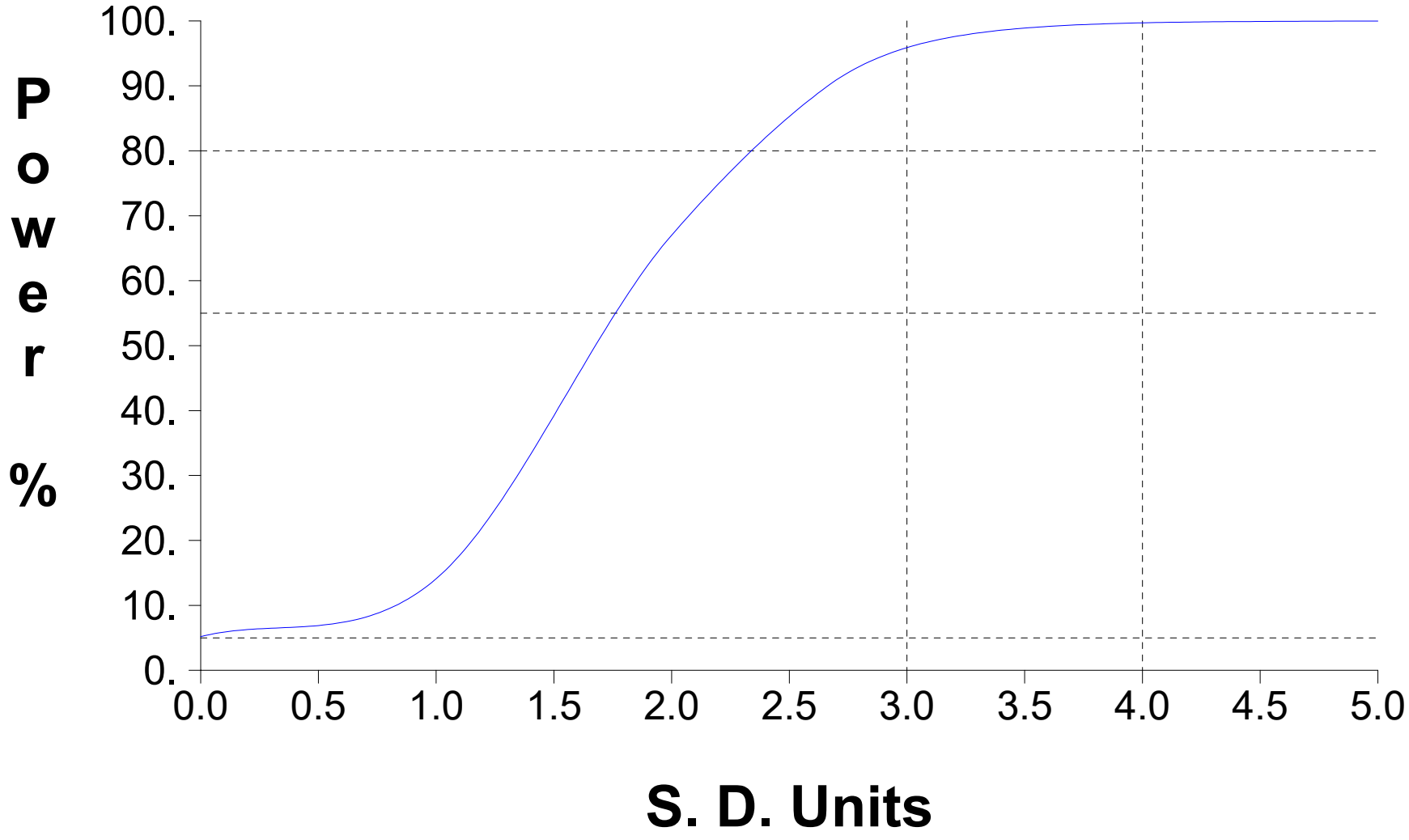


Graph 34



Graph 35

False Positive and False Negative Rates for Current Intra-Well Control Charts Monitoring Program



APPENDIX C

Results of the Groundwater Statistics for the Lower Colorado River Authority
Second Semi-Annual Monitoring Event in 2022
Otter Creek Environmental Services, LLC
November 2022

Results of the Ground Water Statistics

for Lower Colorado River Authority Fayette Power Project

Second Semi-Annual Monitoring Event in 2022

Prepared for:
Lower Colorado River Authority (LCRA)
Fayette Power Project
LaGrange, TX

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November 2022

INTRODUCTION

This report contains the results of the statistical analyses used to evaluate the groundwater data obtained during the second semi-annual monitoring event in 2022 at the Lower Colorado River Authority (LCRA) Fayette Power Project (FPP) Combustion Byproducts Landfill (CBL), the Coal Combustion Residuals (CCR) unit addressed in this report. The groundwater at the FPP is monitored by wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, CBL-340I, and CBL-341I.

Statistical comparisons and evaluation for statistically significant increases (SSIs) are conducted on all wells with the exception of former background (side-gradient) monitoring well CBL-340I. Based on the Alternative Source Determination (ASD) study conducted in 2018, the identification of natural aquifer heterogeneity resulted in determination that CBL-340I could not be used to reliably characterize the background geochemistry of the groundwater flowing beneath the CCR unit. As such, intrawell analysis of wells potentially affected by CCR operation was selected at that time, and the need for use of CBL-340I geochemical data was negated. A Groundwater Monitoring System Addendum Certification was prepared in 2018, documenting the transition from former interwell analysis to intrawell analysis.

The statistical plan is designed to detect a release from the facility at the earliest indication. An intrawell methodology is described and then applied to the FPP data. The statistical method conforms with the Coal Combustion Residual (CCR) rule (40 CFR Part 257), USEPA Guidance document (*Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance,* March 2009), and the American Society for Testing and Materials (ASTM) standard D6312-98, *Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs*. The intrawell statistical evaluations were completed within 90 days of receipt of laboratory data.

Ground Water Monitoring Program

The groundwater monitoring network for FPP includes background well CBL-340I and downgradient wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, and CBL-341I. Each of the groundwater monitoring wells is to be sampled at least semiannually and analyzed for the detection monitoring parameters listed in Appendix III of 40 CFR Part 257, as follows:

Boron
Calcium
Chloride
Fluoride
pH
Sulfate
Total Dissolved Solids

Statistical analysis is conducted on data from all Groundwater Monitoring Plan (GMP) wells with the exception of CBL-340I, as described above. The groundwater data obtained for statistical evaluation during the second semi-annual monitoring event in 2022 are summarized in Attachment A. Historical Appendix III data is summarized in Attachment B.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

The CCR rule for statistical analysis provides several options for evaluating the ground water data [40 CFR 257.93(f)]. As referenced in Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance (EPA 530/R-09-007), the preferred methods for comparing ground water data are using either prediction limits or using control charts. The control chart procedure offers an advantage over the prediction limits procedure as more data is generated over time, because the control chart procedure generates a graph of compliance data over time and allows for better identification of long-term trends.

An intrawell control chart method was applied to the FPP 2022 second semiannual data using the DUMPStat® statistical program. DUMPStat® is a program for the statistical analysis of groundwater monitoring data using methods described in "Statistical Methods for Groundwater Monitoring" by Dr. Robert D. Gibbons. Groundwater statistical analysis was conducted on the Appendix III constituents listed above.

Intrawell statistics

Intrawell statistics compare new measurements to the historical data at each groundwater monitoring well independently. The Unified Guidance-recommended technique for intrawell comparisons is the combined Shewhart-CUSUM control chart. This control chart procedure detects changes in analyte concentrations both in terms of constituent concentration and cumulative concentration increases. This method is also extremely sensitive to sudden and gradual releases. A requirement for constructing these control charts is that the parameter is detected at a frequency greater than or equal to 25%, otherwise the data variance is not properly defined (ASTM D 6312-98 *Standard Guide for Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs*).

The combined Shewhart-CUSUM control chart assumes that the data are independent and normally distributed with a fixed mean and a constant variance. Independent data is much more critical than the normality assumption. To achieve independence, it is recommended that data are collected no more frequently than quarterly to account for seasonal variation. The combined Shewhart-CUSUM control chart is robust to deviations from normality. Because the control charts do not use a specific multiplier based on a normal distribution, it is more conservative to assume normality.

Some groundwater monitoring parameters are not detected at a frequency great enough to generate the combined Shewhart-CUSUM control charts. For constituents that are detected less than 25% of the time at a particular well, the data are plotted as a time series until a sufficient number of data points are available to provide a 99% confidence nonparametric prediction limit. Thirteen independent measurements (with 1 resample) are necessary to achieve a 99% confidence (1% false positive rate) nonparametric prediction limit. Eight independent measurements (for pass 1 of 2 resamples) are necessary to achieve a 99% confidence nonparametric prediction limit. The nonparametric prediction limit is the largest determination out of the data set collected for that well and parameter. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

In developing the statistical background, the historical data must be thoroughly screened for anomalous data due to sample collection error or laboratory analysis error. An erroneous data point, if not removed prior to the mean and variance computations, would yield a larger control limit thus increasing the false negative rate. The DUMPStat® program screens for outliers using the Dixon test. If the Dixon test indicates an outlier, the value is compared to three times the median value for intrawell analyses. If the value fails both criteria of the two-stage screening, the value is considered a statistical outlier and will not be used in the mean and variance determinations. Anomalous data will still be plotted on the graphs (with a unique symbol) but will not be included in the calculations.

The verification resample plan is an integral function of the statistical plan to reduce the probability that anomalous data obtained after the background has been established is indicative of a landfill release. Should an indication of an SSI be identified, the resampling plan is implemented by the operator to collect a verification sample.

The background data for each well and constituent is tested for existing trends using Sen's nonparametric estimate of trend.

Results of the Intrawell Statistics

The Appendix III parameter data from wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, and CBL-341I were evaluated using the combined Shewhart-CUSUM control chart method.

The initial background was established with the ProUCL software using data obtained in 2016 and 2017. Initial exceedances for boron at CBL-301I and boron at CBL-341I were reported following the second semi-annual monitoring in 2020. Since the boron concentrations determined subsequently in January 2021 at CBL-301I (<0.050 mg/L) and CBL-341I (<0.050 mg/L) do not exceed the baseline threshold values (BTV), the previous exceedances are not statistically significant. BTV will be analogous to control limits in this report and future reports.

Monitoring well background data sets must be periodically updated with valid detection monitoring results that are representative of background groundwater quality. Failure to update background data sets will exclude factors such as natural temporal variation, changes in field or laboratory methodologies, and changes in the water table due to meteorological conditions or other influences. Since there were no exceedances attributed to the unit, the background data in this evaluation includes historical data obtained from 2016 through 2020 for wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, and CBL-341I.

A summary of the intrawell statistics is included in Attachment C, Table 1 "Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts." The control charts or time series graphs follow the summary table.

For the parameters evaluated, there was a control limit exceedance detected for boron at CBL-301I for the second semi-annual monitoring event for 2022. The initial sample analysis of boron concentration determined at CBL-301I (0.085 mg/L) slightly exceeded the nonparametric prediction limit of 0.0801 mg/L. Monitoring well CBL-301I was resampled on August 30, 2022, and again on October 25, 2022, for boron analysis. The August resample result (0.107 mg/L boron) exceeded the prediction limit, but the October

resample result (0.0645 mg/L boron) did not exceed the prediction limit of 0.0801 mg/L. Since the resamples did not both exceed the prediction limit, the initial exceedance is not statistically significant.

A slight increasing trend was detected in the background data for sulfate at CBL-302I.

A control chart factor was selected to provide a balance of the site-wide false positive and false negative rates. A statistical power curve indicates the expected false assessments for the site as a whole. The site-wide false positive rate is 5% and the test becomes sensitive to 3 standard deviation units over background.

CONCLUSIONS

This document describes a comprehensive statistical plan designated for the FPP. The groundwater monitoring network for FPP consists of wells CBL-301I, CBL-302I, CBL-306I, CBL-308I, and CBL-341I. Each of the groundwater monitoring wells is sampled and analyzed for the detection monitoring parameters listed in Appendix III of 40 CFR Part 257. The current ground water data was compared to background using intrawell control charts. Using intrawell comparisons, there were no confirmed control limit exceedances detected.

Attachment A

Ground Water Data obtained during the Second Semi-Annual Monitoring Event in 2022

Table 1

Analytical Data Summary for 7/27/2022 to 7/28/2022

Constituents	Units	CBL-301I	CBL-302I	CBL-306I	CBL-308I	CBL-341I
Boron, Total	mg/L	.085	<.050	.110	.079	.115
Calcium, Total	mg/L	1010	750	182	736	704
Chloride	mg/L	1840	1300	261	2470	1690
Fluoride	mg/L	.156	.165	2.260	1.430	.141
pH	S.U.	6.08	6.21	6.70	6.23	6.16
Sulfate	mg/L	285	1300	348	1190	296
Total Dissolved Solids	mg/L	4590	5120	1540	6840	4910

Table 2

Analytical Data Summary for 8/30/2022

Constituents	Units	CBL-301I
Boron, Total	mg/L	.107
pH	S.U.	6.14

Table 3

Analytical Data Summary for 10/25/2022

Constituents	Units	CBL-301I
Boron, Total	mg/L	.0645
pH	S.U.	6.21

Attachment B

Historical Appendix III Ground Water Data

Table 1

Analytical Data Summary for CBL-301I

Constituents	Units	1/21/2016	5/4/2016	7/27/2016	10/24/2016	1/23/2017	3/22/2017	5/18/2017	7/26/2017	2/8/2018	7/25/2018	1/17/2019	5/2/2019	7/31/2019
Boron, Total	mg/L	<.0500	<.0500	<.0500	<.0500	<.0500	<.0500	.0707	<.0500	<.0500	<.0500	<.0500	<.0500	<.0500
Calcium, Total	mg/L	905	949	925	978	1000	1030	1060	961	873	993	156	762	783
Chloride	mg/L	2300	2160	2290	2250	3200	2390	2420	2500	2480	1330	619	1910	2240
Fluoride	mg/L	<.250	<.500	<.500	<.250	.312	<.500	<.500	<.500	<.500	<.500	.219	.112	.051
pH	S.U.	6.33	6.26	5.95	6.23	6.26	6.31	5.95	6.02	6.17	6.04	7.16	6.14	6.19
Sulfate	mg/L	336	311	336	326	488	337	342	381	344	196	104	398	332
Total Dissolved Solids	mg/L	4380	5050	6020	4570	6140	6570	6430	4290	5120	5390	1460	5650	6040

Table 1

Analytical Data Summary for CBL-301I

Constituents	1/28/2020	9/17/2020	1/26/2021	7/20/2021	9/7/2021	1/26/2022	7/27/2022	8/30/2022	10/25/2022
Boron, Total	<.0500	.0801	<.0500	.0826	<.0500	<.0500	.0850	.1070	.0645
Calcium, Total	851	1060	1130	1100		999	1010		
Chloride	2360	2270	2420	2590		2440	1840		
Fluoride	.130	<.250	<.500	2.680	<.500	<.050	.156		
pH	6.26	6.13	6.06	6.13	6.14	6.27	6.08	6.14	6.21
Sulfate	349	350	374	419		406	285		
Total Dissolved Solids	4790	6340	6060	5870		4700	4590		

Table 2

Analytical Data Summary for CBL-302I

Constituents	Units	1/22/2016	5/4/2016	7/27/2016	10/24/2016	1/23/2017	3/22/2017	5/16/2017	7/27/2017	2/8/2018	7/27/2018	1/22/2019	7/31/2019	1/30/2020
Boron, Total	mg/L	<.0500	<.0500	<.0500	.1560	<.0500	.2970	<.0500	<.0500	<.0500	<.0500	<.0500	<.0500	<.0500
Calcium, Total	mg/L	1030	1010	1030	1070	1100	1090	1100	1040	934	995	855	914	838
Chloride	mg/L	2190	2130	2210	2170	2080	2050	2230	2040	2080	1980	1960	1540	1540
Fluoride	mg/L	<.2500	<.5000	<.5000	<.2500	.3320	<.5000	<.5000	<.5000	.1120	<.5000	.0402	.0605	.1930
pH	S.U.	6.29	6.01	5.17	7.75	5.36	5.40	4.94	6.20	6.21	5.77	6.44	6.15	6.34
Sulfate	mg/L	1020	993	1090	1180	1150	1120	1230	1180	1240	1390	1250	1260	1350
Total Dissolved Solids	mg/L	5500	5390	6850	4210	6430	6460	5860	5120	6010	5510	5060	4190	4790

Table 2

Analytical Data Summary for CBL-302I

Constituents	9/17/2020	1/28/2021	7/21/2021	9/7/2021	1/27/2022	7/28/2022
Boron, Total	<.0500	<.0500	.0743		<.0500	<.0500
Calcium, Total	853	1020	844		754	750
Chloride	1410	1370	1380		1310	1300
Fluoride	<.2500	<.5000	2.2500	<.2500	<.0500	.1650
pH	6.20	6.21	6.06	6.28	6.32	6.21
Sulfate	1280	1290	1350		1340	1300
Total Dissolved Solids	4990	4800	4810		4510	5120

Table 3

Analytical Data Summary for CBL-306I

Constituents	Units	1/21/2016	5/4/2016	7/26/2016	10/24/2016	1/19/2017	3/22/2017	5/18/2017	7/27/2017	2/8/2018	7/27/2018	1/16/2019	7/31/2019	8/23/2019
Boron, Total	mg/L	<.0500	.0717	.0998	.0556	<.0500	.1240	.0832	.0531	<.0500	<.0500	<.0500	.0824	.0500
Calcium, Total	mg/L	137.0	47.2	105.0	198.0	174.0	204.0	205.0	234.0	230.0	275.0	180.0	106.0	226.0
Chloride	mg/L	155	20	114	330	197	231	289	350	385	283	215	538	318
Fluoride	mg/L	2.50	1.00	1.37	2.38	1.85	12.60	2.20	2.91	2.81	2.95	1.98	9.26	2.66
pH	S.U.	7.09	6.69	6.95	6.72	7.29	4.41	5.61	6.94	6.67	6.86	6.78	6.92	6.83
Sulfate	mg/L	266.0	29.5	139.0	432.0	270.0	340.0	412.0	513.0	493.0	406.0	292.0	816.0	387.0
Total Dissolved Solids	mg/L	1280	431	790	1150	1320	1460	1440	1280	1760	1450	1220	676	1710

Table 3

Analytical Data Summary for CBL-306I

Constituents	1/29/2020	9/19/2020	1/28/2021	7/21/2021	1/27/2022	7/28/2022
Boron, Total	<.0500	.0773	<.0500	.0927	.0548	.1100
Calcium, Total	247.0	260.0	257.0	216.0	212.0	182.0
Chloride	445	420	292	255	384	261
Fluoride	2.83	2.72	2.90	2.42	2.99	2.26
pH	6.70	7.16	6.84	6.55	6.87	6.70
Sulfate	561.0	506.0	388.0	336.0	510.0	348.0
Total Dissolved Solids	1830	1730	1420	1320	1730	1540

Table 4

Analytical Data Summary for CBL-308I

Constituents	Units	1/22/2016	5/4/2016	7/26/2016	10/24/2016	1/19/2017	3/22/2017	5/16/2017	7/26/2017	2/6/2018	7/25/2018	1/18/2019	7/31/2019	1/29/2020
Boron, Total	mg/L	<.0500	.1210	.1860	.2560	<.0500	.5450	.1090	.0799	<.0500	<.0500	<.0500	<.0500	<.0500
Calcium, Total	mg/L	903	870	911	939	919	947	954	878	859	863	760	840	745
Chloride	mg/L	2760	2580	2680	2870	2360	2530	2740	2760	2750	2680	2240	2290	2110
Fluoride	mg/L	1.49	2.30	1.64	1.59	1.33	9.05	1.70	1.90	1.76	2.10	1.68	1.62	1.60
pH	S.U.	6.36	6.13	5.95	6.27	6.83	6.27	5.54	6.27	6.26	6.07	6.39	6.25	6.37
Sulfate	mg/L	1490	1410	1490	1550	1320	1470	1580	1550	1570	1540	1520	1420	1340
Total Dissolved Solids	mg/L	6820	6120	7890	10200	9620	7260	6590	6480	6200	6320	4760	5820	5980

Table 4

Analytical Data Summary for CBL-308I

Constituents	9/18/2020	1/28/2021	7/21/2021	1/27/2022	7/27/2022
Boron, Total	.1030	<.0500	.1300	<.0500	.0790
Calcium, Total	838	830	684	974	736
Chloride	2410	2200	1780	2020	2470
Fluoride	1.33	1.44	1.74	1.75	1.43
pH	6.22	6.26	6.16	6.36	6.23
Sulfate	1310	1340	1240	1310	1190
Total Dissolved Solids	6860	6190	5270	5320	6840

Table 5

Analytical Data Summary for CBL-340I

Constituents	Units	1/21/2016	5/4/2016	7/27/2016	10/24/2016	1/23/2017	3/22/2017	5/16/2017	7/27/2017	2/8/2018	7/27/2018	1/22/2019	7/31/2019	1/30/2020
Boron, Total	mg/L	<.0500	.0832	.0810	.1580	<.0500	.1740	.1040	.0816	.0638	<.0500	<.0500	.1240	.0562
Calcium, Total	mg/L	564	560	575	607	627	581	584	571	555	544	518	518	539
Chloride	mg/L	2370	2260	2350	2380	2070	2280	2520	2380	2730	2450	2250	2280	2240
Fluoride	mg/L	1.090	1.920	1.060	1.260	.840	8.440	1.010	.850	1.000	1.300	.830	.880	.870
pH	S.U.	6.52	6.13	6.95	6.19	5.46	6.49	5.77	6.42	6.41	6.25	6.59	6.45	6.49
Sulfate	mg/L	652	616	668	675	571	635	715	685	752	711	639	684	637
Total Dissolved Solids	mg/L	4990	5230	6250	5670	6230	5480	5470	4880	5290	5100	4720	5560	5080

Table 5

Analytical Data Summary for CBL-340I

Constituents	9/18/2020	1/28/2021	7/22/2021	1/28/2022	7/28/2022
Boron, Total	.1460	<.0500	.3840	.1600	.2850
Calcium, Total	547	607	532	597	538
Chloride	2130	2260	2200	2200	2160
Fluoride	.725	.835	.865	1.060	.865
pH	6.32	6.32	6.24	6.42	6.35
Sulfate	608	634	618	619	614
Total Dissolved Solids	5430	5520	4990	4870	5490

Table 6

Analytical Data Summary for CBL-341I

Constituents	Units	1/23/2017	2/23/2017	3/22/2017	4/20/2017	5/16/2017	6/20/2017	7/27/2017	2/8/2018	8/24/2018	1/22/2019	7/31/2019	1/30/2020	9/17/2020
Boron, Total	mg/L	<.0500	<.0500	<.0500	.0587	.0896	.0668	.0507	<.0500	<.0500	<.0500	<.0500	<.0500	.1020
Calcium, Total	mg/L	854	870	906	898	860	950	829	810	824	782	714	767	814
Chloride	mg/L	1600	2000	1780	1770	1900	1820	1970	2110	1910	1790	1650	1780	1700
Fluoride	mg/L	.5300	<.5000	<.5000	<.5000	<.5000	.3350	.0550	.1060	.1140	.0546	.1000	.1530	<.2500
pH	S.U.	5.74	5.23	5.72	5.73	5.54	6.19	6.21	6.18	5.82	6.38	6.23	6.27	6.14
Sulfate	mg/L	307	404	346	336	369	363	419	383	376	358	329	351	336
Total Dissolved Solids	mg/L	5000	4520	5110	4240	4840	5940	4150	4320	4800	3870	5370	4900	4930

Table 6

Analytical Data Summary for CBL-341I

Constituents	1/27/2021	7/22/2021	9/7/2021	1/27/2022	7/28/2022
Boron, Total	<.0500	.1110		<.0500	.1150
Calcium, Total	874	852		1040	704
Chloride	1800	1750		1810	1690
Fluoride	<.5000	1.1600	<.2500	<.0500	.1410
pH	6.06	5.98	6.18	6.26	6.16
Sulfate	324	316		320	296
Total Dissolved Solids	3940	4520		3800	4910

Attachment C

Summary Tables and Graphs for the Intrawell Comparisons

Table 1

Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts

Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Boron, Total	mg/L	CBL-301I	15	7	22			0.1070	0.0645			0.0801	nonpar	.99	**
Boron, Total	mg/L	CBL-302I	14	4	18			0.0500	0.0500			0.2970	nonpar	.99	**
Boron, Total	mg/L	CBL-306I	15	4	19	0.0665	0.0228	0.0548	0.1100	0.0665	0.0929	0.1806	normal		
Boron, Total	mg/L	CBL-308I	14	4	18	0.1250	0.1357	0.0500	0.0790	0.1250	0.1250	0.8036	normal		
Boron, Total	mg/L	CBL-341I	13	4	17	0.0591	0.0172	0.0500	0.1150	0.0591	0.1021	0.1452	normal		
Calcium, Total	mg/L	CBL-301I	14	4	19	937.8571	94.2189	999.0000	1010.0000	1141.2931	1142.7717	1408.9518	normal		
Calcium, Total	mg/L	CBL-302I	14	4	18	989.9286	94.3541	754.0000	750.0000	989.9286	989.9286	1461.6988	normal		
Calcium, Total	mg/L	CBL-306I	13	4	19	205.8462	47.9997	212.0000	182.0000	205.8462	205.8462	445.8448	normal		
Calcium, Total	mg/L	CBL-308I	14	4	18	873.2857	63.6389	974.0000	736.0000	926.2708	873.2857	1191.4803	normal		
Calcium, Total	mg/L	CBL-341I	13	4	17	836.7692	63.0491	1040.0000	704.0000	992.7132	836.7692	1152.0149	normal		
Chloride	mg/L	CBL-301I	14	4	19	2292.8571	394.9183	2440.0000	1840.0000	2292.8571	2292.8571	4267.4485	normal		
Chloride	mg/L	CBL-302I	14	4	18	1972.1429	271.4967	1310.0000	1300.0000	1972.1429	1972.1429	3329.6262	normal		
Chloride	mg/L	CBL-306I	13	4	19	319.6923	108.7837	384.0000	261.0000	319.6923	319.6923	863.6109	normal		
Chloride	mg/L	CBL-308I	14	4	18	2554.2857	234.4458	2020.0000	2470.0000	2554.2857	2554.2857	3726.5147	normal		
Chloride	mg/L	CBL-341I	13	4	17	1829.2308	144.5373	1810.0000	1690.0000	1829.2308	1829.2308	2551.9172	normal		
Fluoride	mg/L	CBL-301I	15	5	20	0.3883	0.1724	0.0500	0.1560	0.3883	0.3883	1.2502	normal		
Fluoride	mg/L	CBL-302I	14	5	19	0.3741	0.1872	0.0500	0.1650	0.3741	0.3741	1.3103	normal		
Fluoride	mg/L	CBL-306I	13	4	19	2.3200	0.6159	2.9900	2.2600	2.5280	2.3200	5.3997	normal		
Fluoride	mg/L	CBL-308I	13	4	18	1.6954	0.2759	1.7500	1.4300	1.6954	1.6954	3.0751	normal		
Fluoride	mg/L	CBL-341I	13	5	18	0.3037	0.2058	0.0500	0.1410	0.3037	0.3037	1.3325	normal		
pH	S.U.	CBL-301I	15	7	22	6.2267	0.2859	6.1400	6.2100	6.2267	6.2267	4.80 - 7.66	normal		
pH	S.U.	CBL-302I	14	5	19	6.0164	0.6925	6.3200	6.2100	6.0164	6.0164	2.55 - 9.48	normal		
pH	S.U.	CBL-306I	15	4	19	6.6413	0.7227	6.8700	6.7000	6.6413	6.6413	3.03 - 10.25	normal		
pH	S.U.	CBL-308I	14	4	18	6.2271	0.2799	6.3600	6.2300	6.2271	6.2271	4.83 - 7.63	normal		
pH	S.U.	CBL-341I	12	5	18	6.0125	0.2802	6.2600	6.1600	6.0499	6.0125	4.61 - 7.41	normal		
Sulfate	mg/L	CBL-301I	14	4	19	344.7143	61.2164	406.0000	285.0000	388.4611	344.7143	650.7964	normal		
Sulfate	mg/L	CBL-302I	14	4	18	1195.2143	114.4648	1340.0000	1300.0000	1332.0257	1350.9629	1767.5381	normal		
Sulfate	mg/L	CBL-306I	14	4	19	416.6429	163.4642	510.0000	348.0000	416.6429	416.6429	1233.9640	normal		
Sulfate	mg/L	CBL-308I	14	4	18	1468.5714	93.7146	1310.0000	1190.0000	1468.5714	1468.5714	1937.1442	normal		
Sulfate	mg/L	CBL-341I	13	4	17	359.7692	30.9493	320.0000	296.0000	359.7692	359.7692	514.5157	normal		
Total Dissolved Solids	mg/L	CBL-301I	14	4	19	5484.2857	791.9083	4700.0000	4590.0000	5484.2857	5484.2857	9443.8270	normal		
Total Dissolved Solids	mg/L	CBL-302I	14	4	18	5455.0000	806.9387	4510.0000	5120.0000	5455.0000	5455.0000	9489.6933	normal		
Total Dissolved Solids	mg/L	CBL-306I	15	4	19	1301.8000	409.5196	1730.0000	1540.0000	1422.8603	1353.9206	3349.3981	normal		
Total Dissolved Solids	mg/L	CBL-308I	14	4	18	6922.8571	1459.6756	5320.0000	6840.0000	6922.8571	6922.8571	14221.2350	normal		
Total Dissolved Solids	mg/L	CBL-341I	13	4	17	4768.4615	554.2239	3800.0000	4910.0000	4768.4615	4768.4615	7539.5809	normal		

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
N(tot) = All independent measurements for that constituent and well.
For transformed data, mean and SD in transformed units and control limit in original units.
Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
* - Insufficient Data.
** - Detection Frequency < 25%.
*** - Zero Variance.

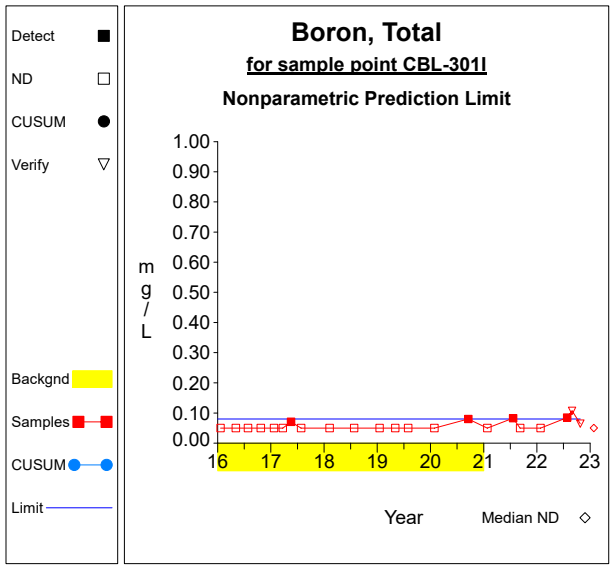
Table 4

Dixon's Test Outliers
1% Significance Level

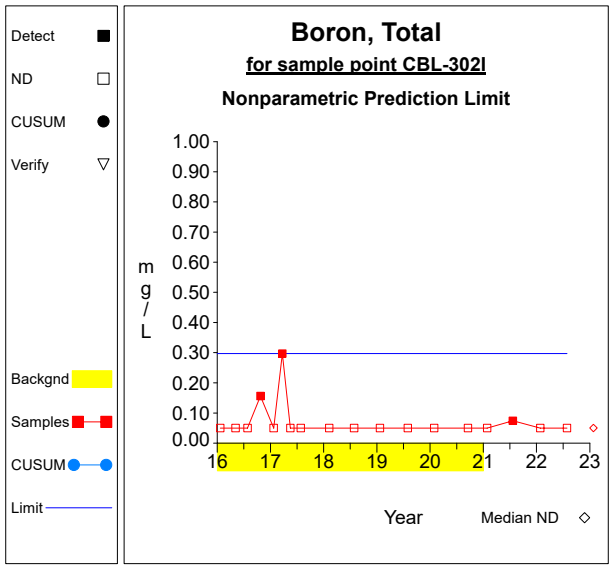
Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Calcium, Total	mg/L	CBL-301I	01/17/2019	156.0000		01/21/2016-09/17/2020	15	0.6177
Chloride	mg/L	CBL-301I	01/17/2019	619.0000		01/21/2016-09/17/2020	15	0.6177
Chloride	mg/L	CBL-306I	05/04/2016	20.0000		01/21/2016-09/19/2020	14	0.6403
Fluoride	mg/L	CBL-306I	03/22/2017	12.6000		01/21/2016-09/19/2020	15	0.6403
Fluoride	mg/L	CBL-306I	07/31/2019	9.2600		01/21/2016-09/19/2020	15	0.6403
Fluoride	mg/L	CBL-308I	03/22/2017	9.0500		01/22/2016-09/18/2020	14	0.6403
Sulfate	mg/L	CBL-301I	01/17/2019	104.0000		01/21/2016-09/17/2020	15	0.6177
Sulfate	mg/L	CBL-306I	05/04/2016	29.5000		01/21/2016-09/19/2020	15	0.6177
Total Dissolved Solids	mg/L	CBL-301I	01/17/2019	1460.0000		01/21/2016-09/17/2020	15	0.6177

N = Total number of independent measurements in background at each well.
Date Range = Dates of the first and last measurements included in background at each well.
Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

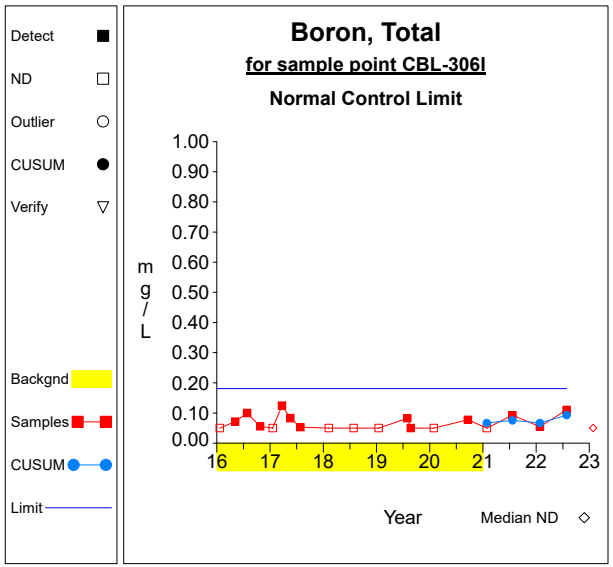
Intra-Well Control Charts / Prediction Limits



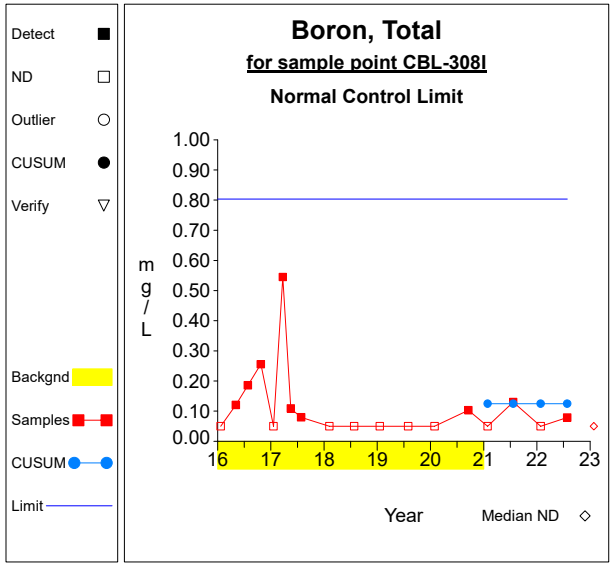
Graph 1



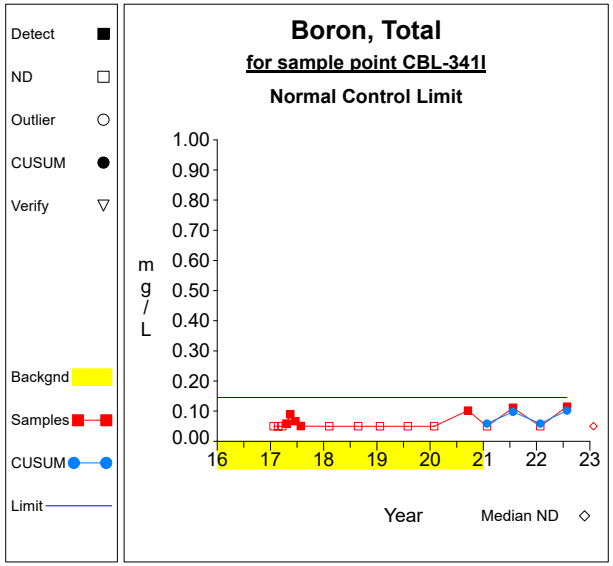
Graph 2



Graph 3



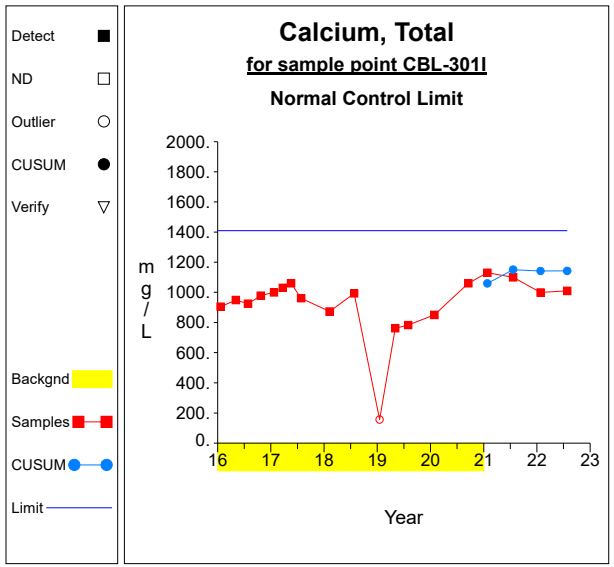
Graph 4



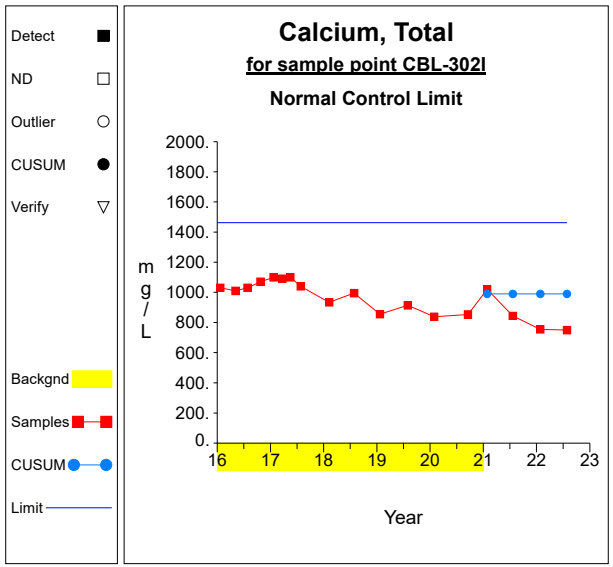
Graph 5

Prepared by: Otter Creek Environmental

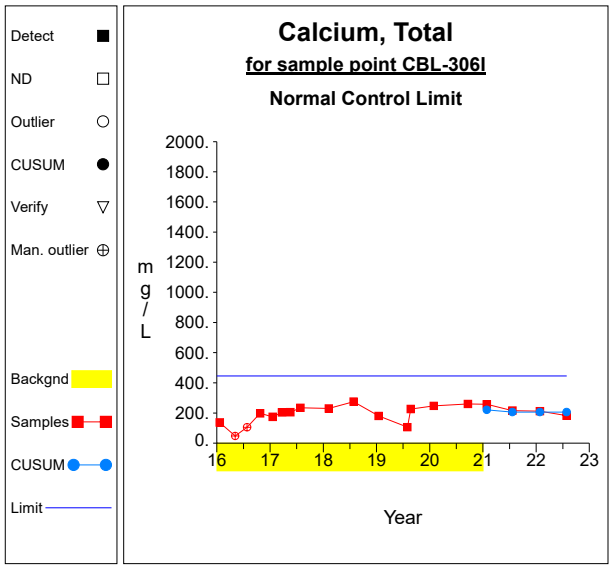
Intra-Well Control Charts / Prediction Limits



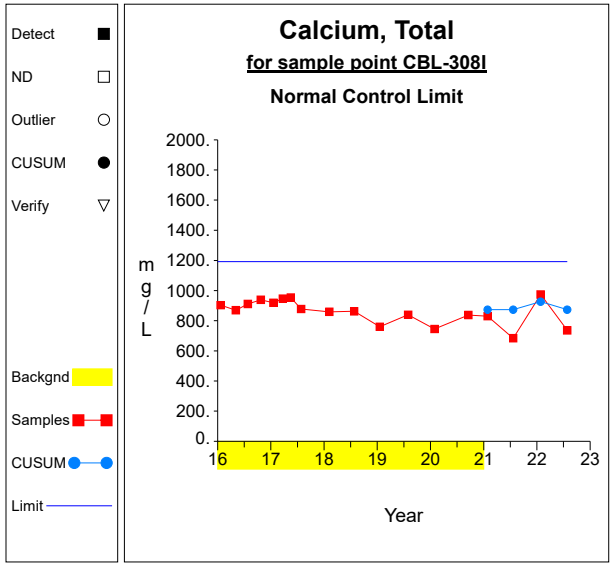
Graph 6



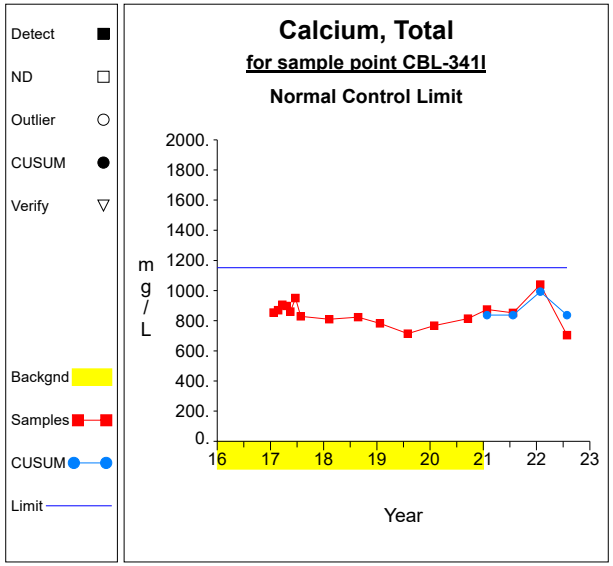
Graph 7



Graph 8

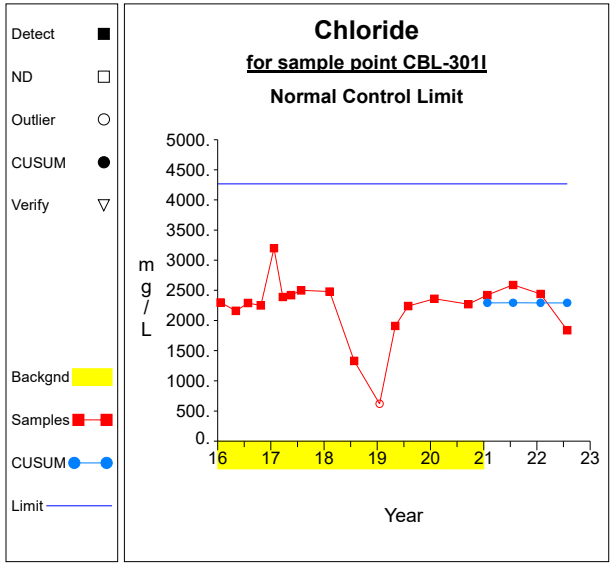


Graph 9

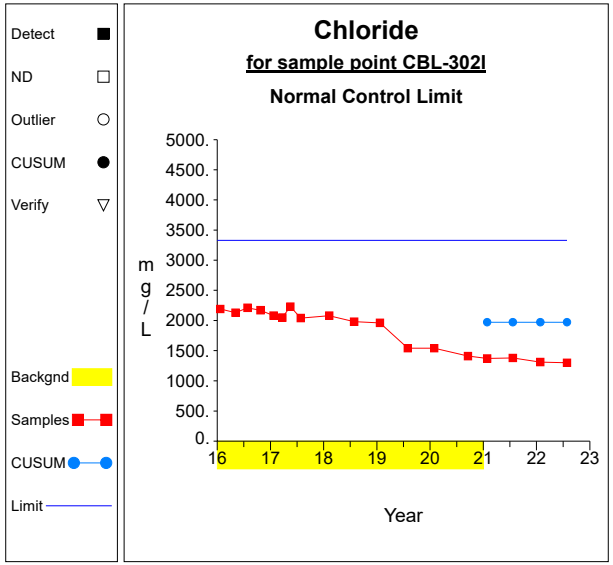


Graph 10

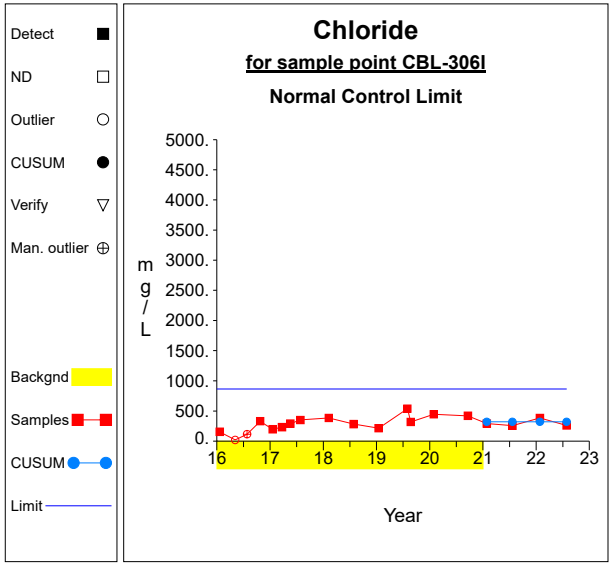
Intra-Well Control Charts / Prediction Limits



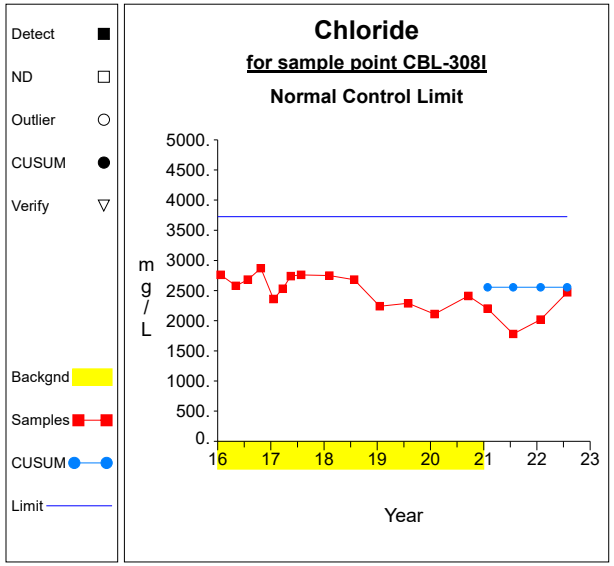
Graph 11



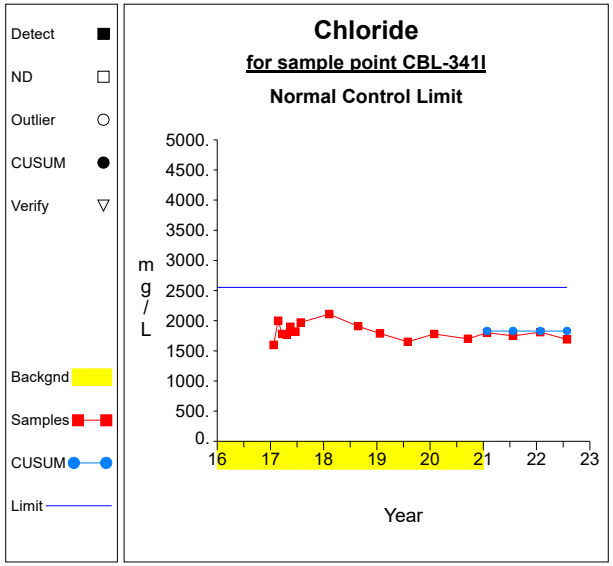
Graph 12



Graph 13



Graph 14



Graph 15

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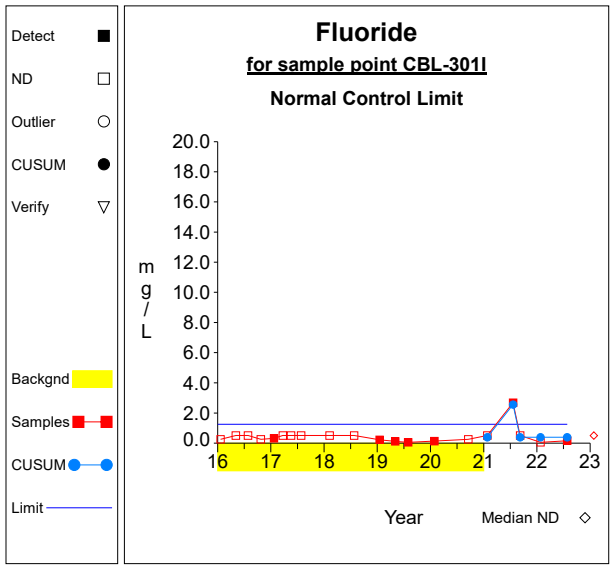
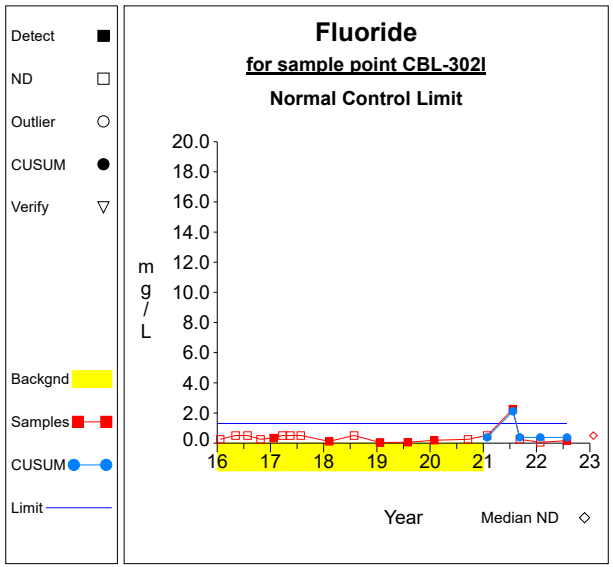
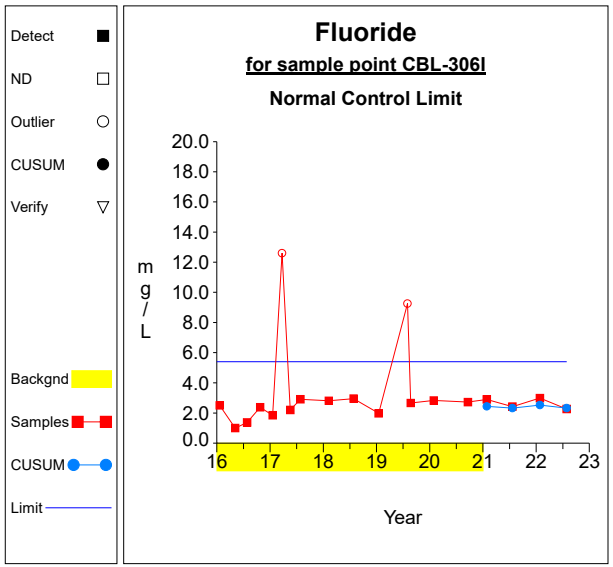
Intra-Well Control Charts / Prediction Limits



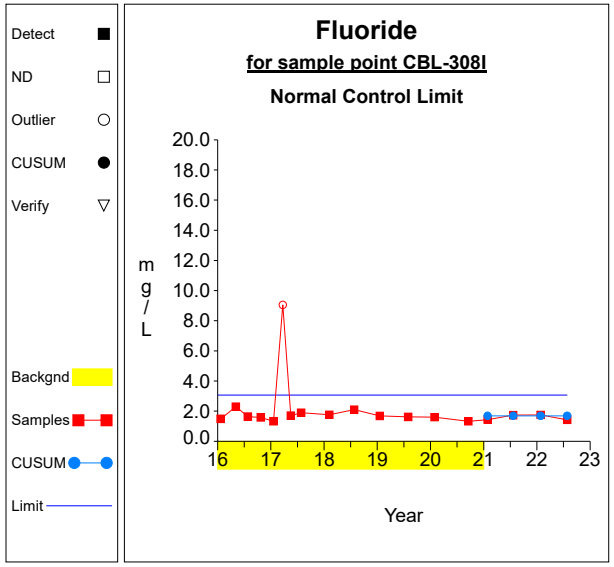
Graph 16



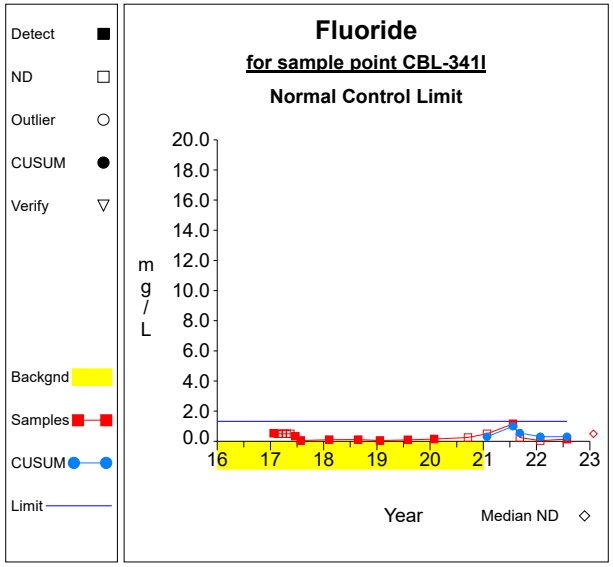
Graph 17



Graph 18



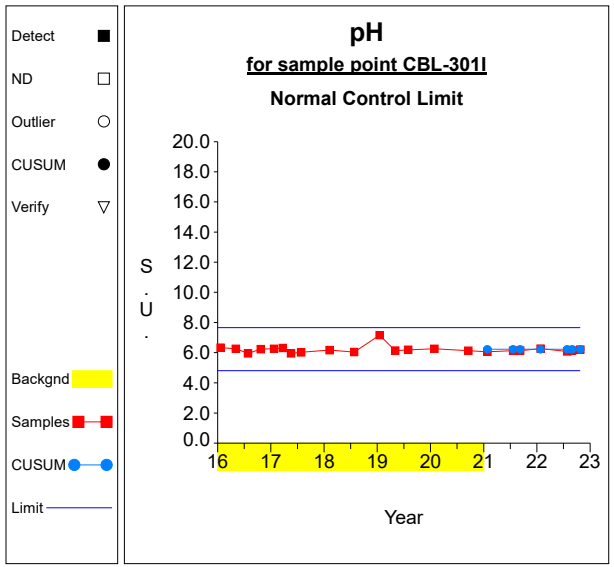
Graph 19



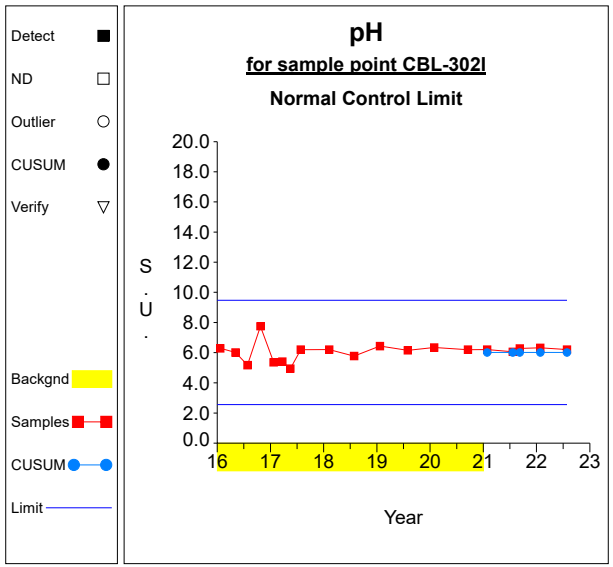
Graph 20

Prepared by: Otter Creek Environmental

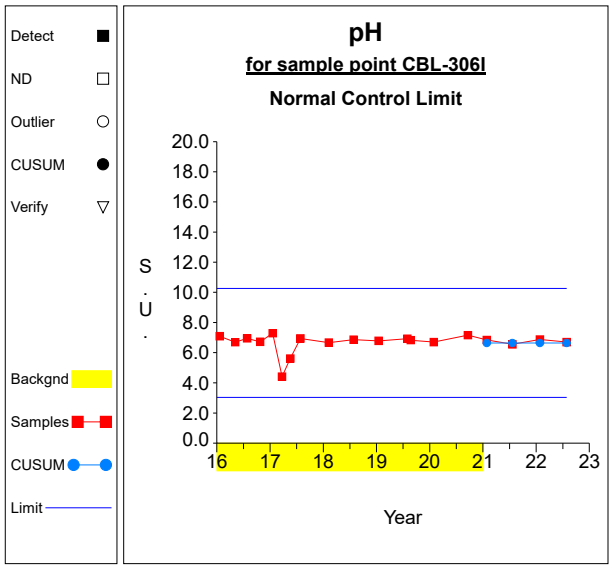
Intra-Well Control Charts / Prediction Limits



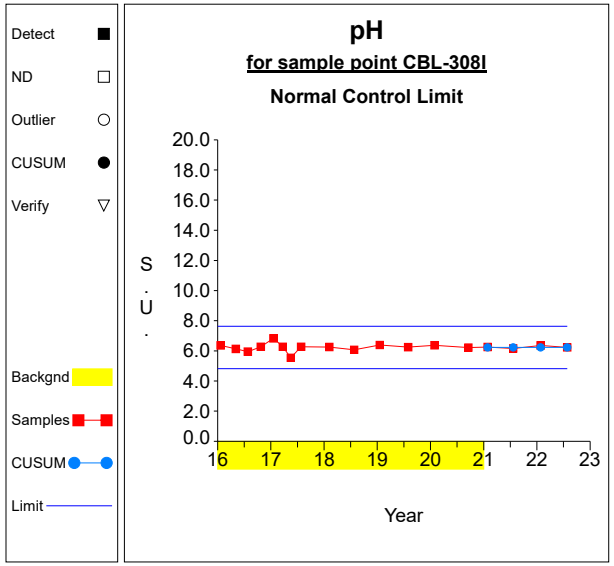
Graph 21



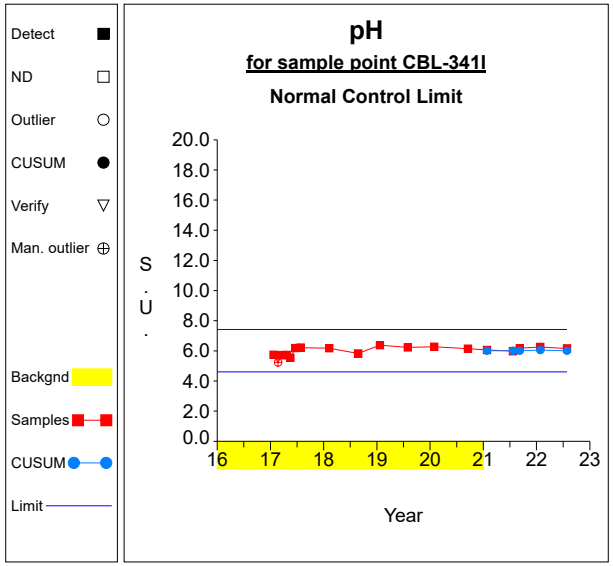
Graph 22



Graph 23

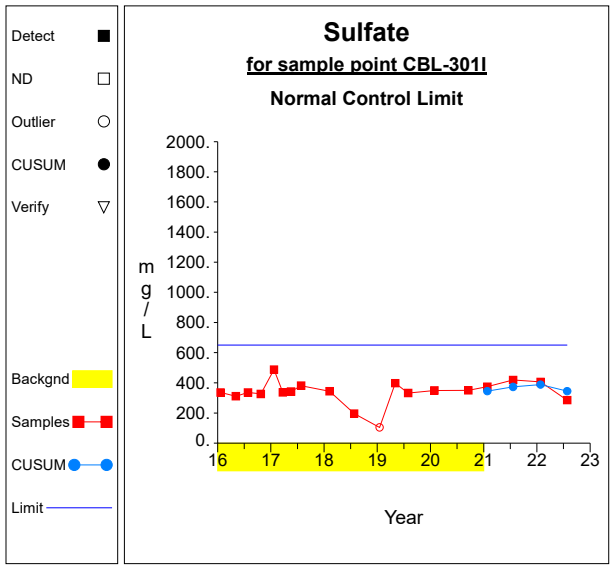


Graph 24

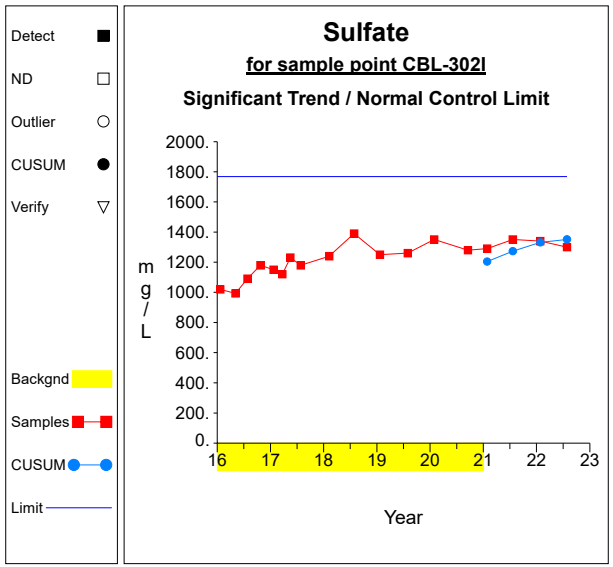


Graph 25

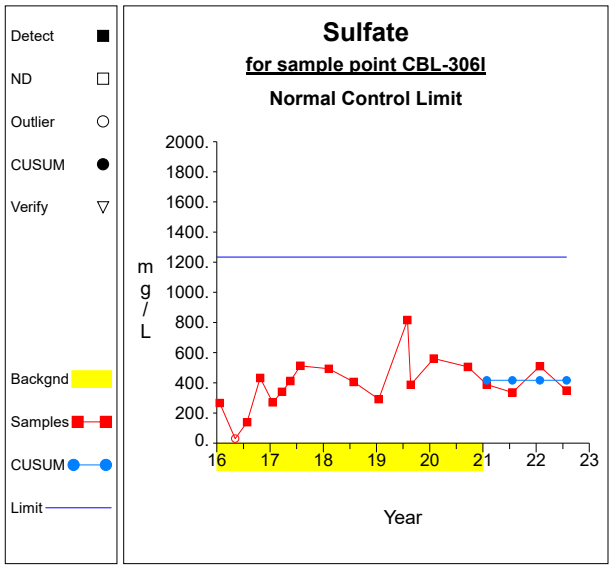
Intra-Well Control Charts / Prediction Limits



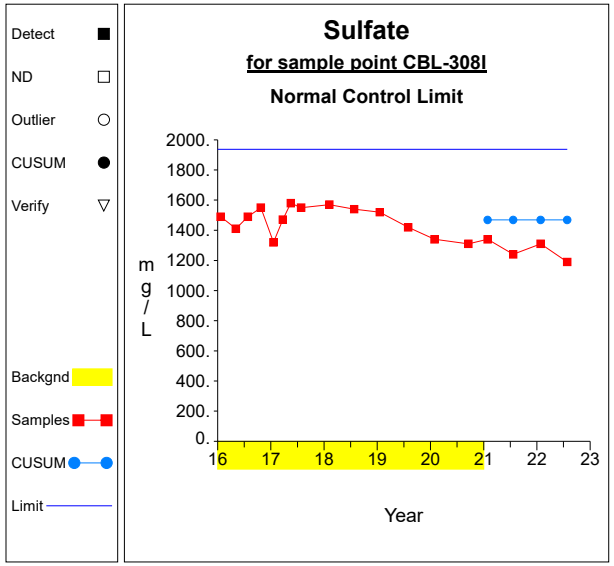
Graph 26



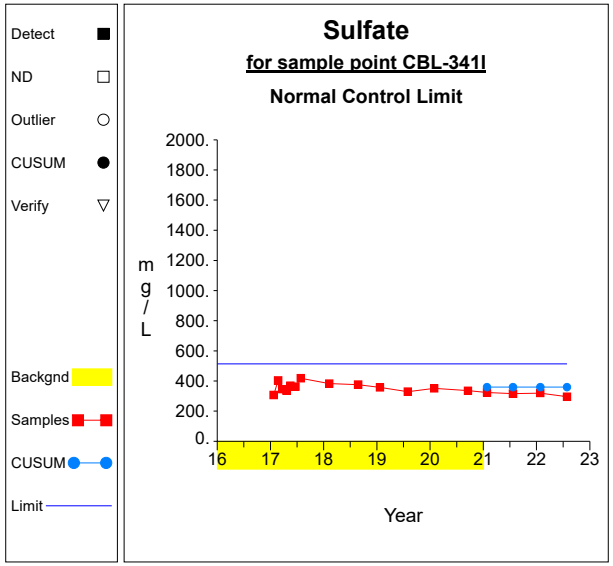
Graph 27



Graph 28



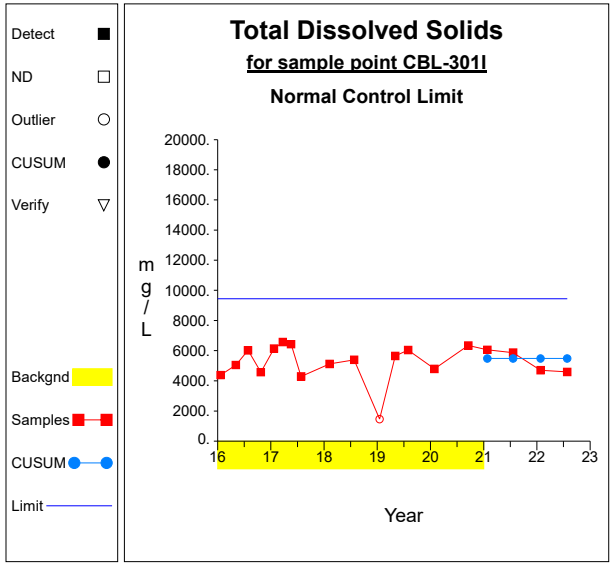
Graph 29



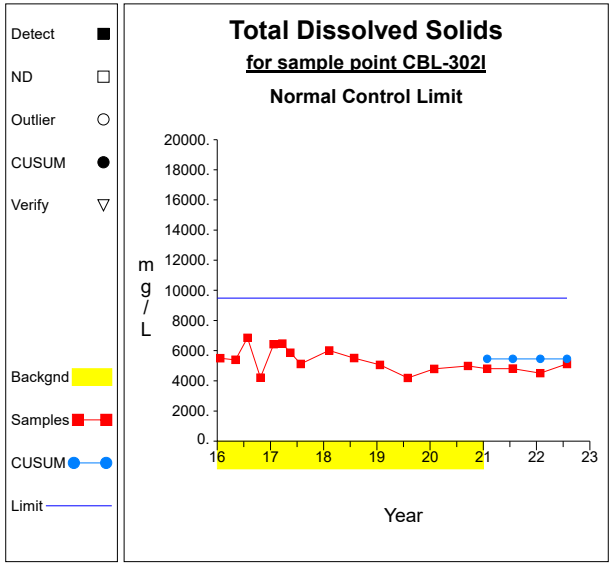
Graph 30

Prepared by: Otter Creek Environmental

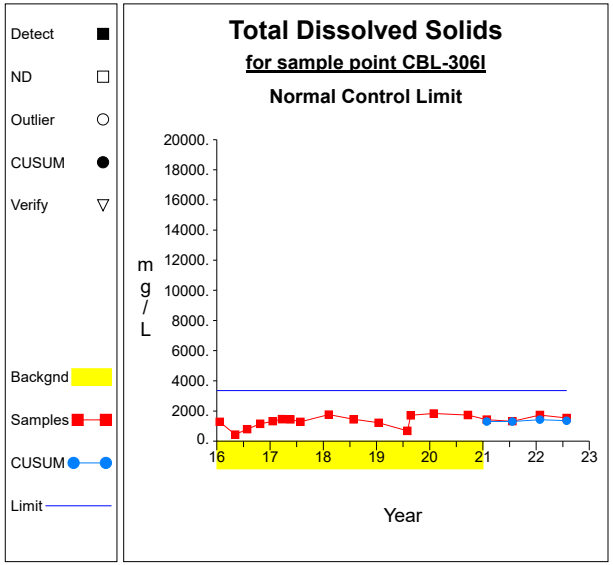
Intra-Well Control Charts / Prediction Limits



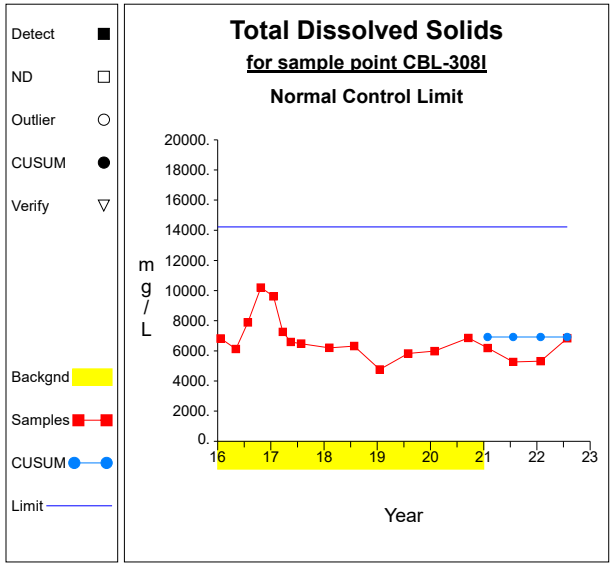
Graph 31



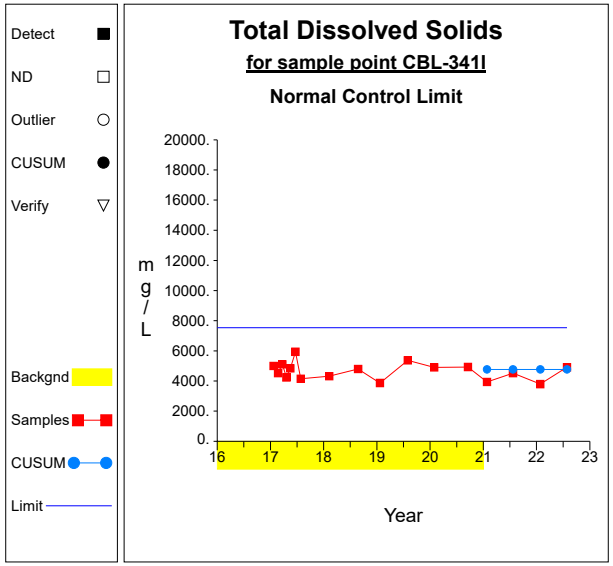
Graph 32



Graph 33

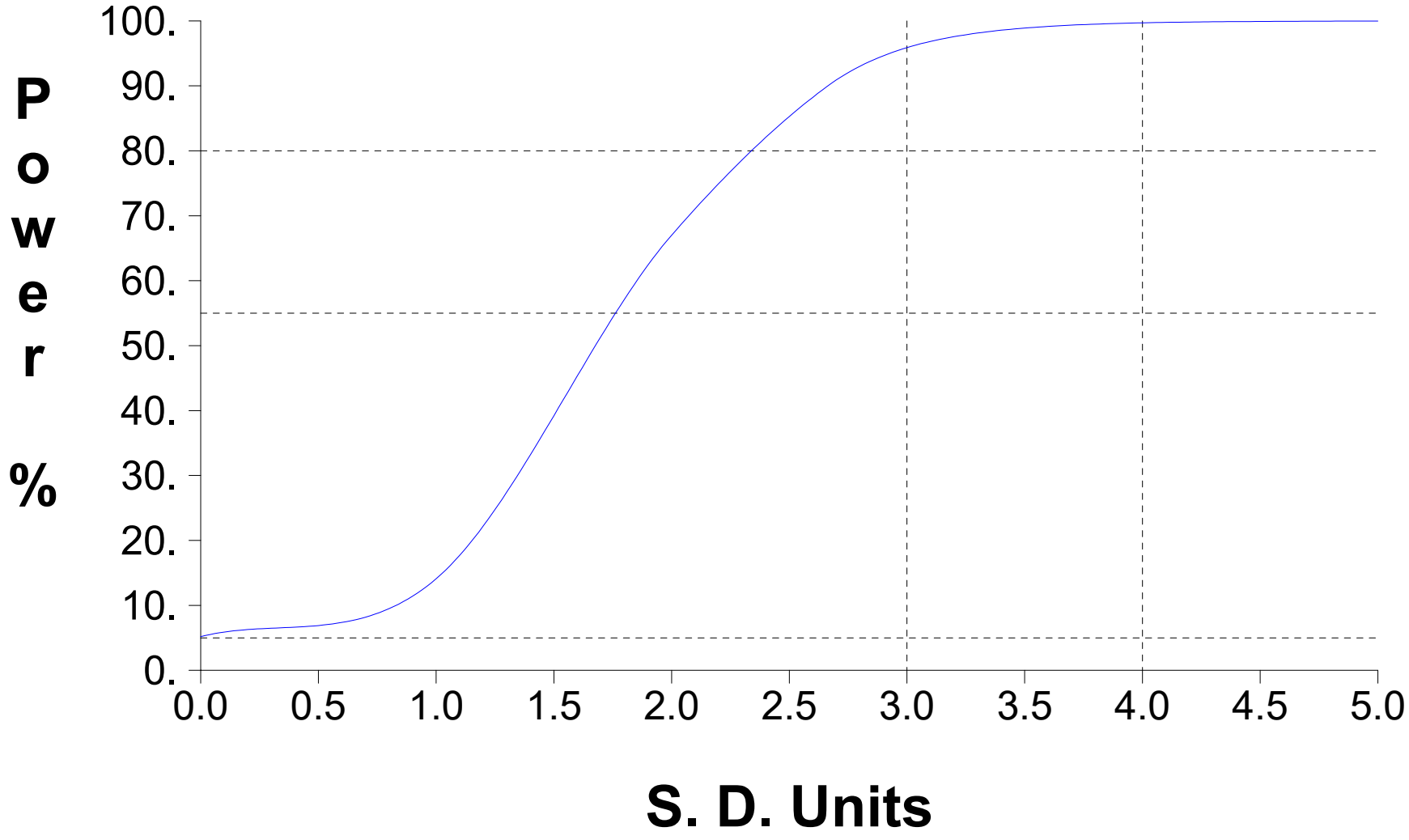


Graph 34



Graph 35

False Positive and False Negative Rates for Current Intra-Well Control Charts Monitoring Program



APPENDIX D

Analytical Data for Calendar Year 2022

DATA USABILITY SUMMARY – LCRA Analytical Report Q2202957

Bullock, Bennett & Associates, LLC has reviewed the analytical data package to be included in Appendix D of the Coal Combustion Residual Landfill 2022 Annual Groundwater Monitoring Report (Annual Groundwater Report) that was produced by LCRA Environmental Laboratory Services (ELS) for the analysis of groundwater samples collected in January 2022 at the Fayette Power Project (FPP) site. The Data were reviewed for conformance to the groundwater sampling and analysis requirements of 40 CFR § 257.93/30 TAC 352.931 and adherence to project objectives.

Objectives of the Data: To provide current data on concentrations of COCs in groundwater at the site for purposes of comparing Combustion Byproducts Landfill (CBL) compliance sample data to Appendix III Control Limits. To accomplish the stated data objectives, all field and laboratory procedures were performed in accordance with industry-established protocol, and the FPP Sampling and Analysis Plan. Appropriate quality assurance/quality control (QA/QC) measures were utilized. As described within the body of the Annual Groundwater Report, field QA/QC protocols integrated into this project followed industry standards and involved, among other factors:

- Use of sampling equipment decontamination protocol;
- Proper sample handling, preservation, and shipping procedures; and
- Maintenance of the sample chain of custody.

Also, as presented in the individual laboratory data package, laboratory QA/QC procedures integrated into this project followed industry standards and involved, among others:

- Maintenance of sample custody;
- Application of laboratory cross references to field sample identifications and to specific QC samples;
- Use of laboratory control samples (LCSs);
- Use of matrix spike/matrix duplicate spikes (MS/MSDs);
- Use of appropriate method and method reporting limit (MRL);
- Reporting of non-detect results as less than the value of the MRL;
- Use of surrogate recoveries;
- Calculation of relative percent differences (RPDs);
- Use of method and preparation blanks; and
- The application of data qualifiers.

Data Reviewed: The data reviewed consisted of laboratory submittals and field data as follows:

- Project Objectives (i.e., recoveries and relative percent differences);
- Analytical Results, including, as applicable, data qualifiers;
- Documentation of preservation and holding times;
- Field and laboratory equipment calibrations;
- Laboratory blanks;
- Internal Laboratory Control Standards and Surrogate Recoveries;
- Laboratory Control Samples;
- Matrix Spike/Matrix Spike Duplicates;
- Field Precision as determined by duplicate samples collected in the field; and

- Field Procedures.

The results of the supporting quality control analyses for each of these QC factors were summarized in Quality Control narratives provided by the laboratory, and field/laboratory-completed chain of custody forms, the field forms, and the LCRA standard operational field procedures and the Groundwater Sampling Procedures. A review of each of these was included in this Data Usability Review.

Based on the Data Usability Review, the groundwater data are usable for their intended purpose. All samples were collected in the field using industry-standard operating procedures (SOPs), including decontamination protocol, sample preservation, and chain of custody.

Also, as presented in detail in the attached laboratory data packages, all appropriate QA/QC protocol were accomplished by the analytical laboratory. Where applicable, data have been appropriately qualified in the laboratory reports and the data, therefore, have been used accordingly.

It is noted that the January 2022 sampling event's Matrix Spike (MS) (1712186) recovery and associated Matrix Spike Duplicate (MSD) (1712187) recovery from the original sample (Lab ID: Q2202957001) for calcium analysis had high recoveries, outside of the established Control Limit ranges, and these results are appropriately flagged. Given that the Spike concentration (10 milligrams per liter) in these samples were approximately 100 times lower than the sample aliquot which was spiked, the high recoveries are not unexpected. Laboratory Control Sample Spike and Laboratory Control Sample Spike Duplicates were within acceptable recovery limits. Based on this information, the data are considered usable.

All exceptions were documented and described in the Quality Control narratives and no conditions with regard to laboratory control samples, matrix spike/matrix spike duplicates, sample preservation and holding times, or equipment calibrations were identified that would cause any of the data not to be useable.

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March 02, 2022

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

RE: Final Analytical Report Q2202957

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 or environmental.lab@lcra.org. We look forward to assisting you again.

Authorized for release by:

Jason Woods
Account Manager
jason.woods@lcra.org

Enclosures:

LCRA Environmental Laboratory Services
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Workorder: Q2202957
Workorder Description: FPPCCR
Client: LCRA
Profile: FPP GWMP CCR

Sampled By: COLT PETRI ELLE TERRELL

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

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported
Q2202957001	CBL - 301I	AQ	E300.0, Anions	01/26/2022 09:54	01/28/2022 13:11	3
Q2202957001	CBL - 301I	AQ	Field pH SM4500H+B TCEQ VOL 1	01/26/2022 09:54	01/28/2022 13:11	1
Q2202957001	CBL - 301I	AQ	SM2540C, TDS	01/26/2022 09:54	01/28/2022 13:11	1
Q2202957001	CBL - 301I	AQ	SW6010B ICP-AES	01/26/2022 09:54	01/28/2022 13:11	2
Q2202957002	CBL - 302I	AQ	E300.0, Anions	01/27/2022 10:44	01/28/2022 13:11	3
Q2202957002	CBL - 302I	AQ	Field pH SM4500H+B TCEQ VOL 1	01/27/2022 10:44	01/28/2022 13:11	1
Q2202957002	CBL - 302I	AQ	SM2540C, TDS	01/27/2022 10:44	01/28/2022 13:11	1
Q2202957002	CBL - 302I	AQ	SW6010B ICP-AES	01/27/2022 10:44	01/28/2022 13:11	2
Q2202957003	CBL - 306I	AQ	E300.0, Anions	01/27/2022 13:11	01/28/2022 13:11	3
Q2202957003	CBL - 306I	AQ	Field pH SM4500H+B TCEQ VOL 1	01/27/2022 13:11	01/28/2022 13:11	1
Q2202957003	CBL - 306I	AQ	SM2540C, TDS	01/27/2022 13:11	01/28/2022 13:11	1
Q2202957003	CBL - 306I	AQ	SW6010B ICP-AES	01/27/2022 13:11	01/28/2022 13:11	2
Q2202957004	CBL - 308I	AQ	E300.0, Anions	01/27/2022 14:11	01/28/2022 13:11	3
Q2202957004	CBL - 308I	AQ	Field pH SM4500H+B TCEQ VOL 1	01/27/2022 14:11	01/28/2022 13:11	1
Q2202957004	CBL - 308I	AQ	SM2540C, TDS	01/27/2022 14:11	01/28/2022 13:11	1
Q2202957004	CBL - 308I	AQ	SW6010B ICP-AES	01/27/2022 14:11	01/28/2022 13:11	2
Q2202957005	CBL - 340I	AQ	E300.0, Anions	01/28/2022 10:47	01/28/2022 13:11	3
Q2202957005	CBL - 340I	AQ	Field pH SM4500H+B TCEQ VOL 1	01/28/2022 10:47	01/28/2022 13:11	1
Q2202957005	CBL - 340I	AQ	SM2540C, TDS	01/28/2022 10:47	01/28/2022 13:11	1
Q2202957005	CBL - 340I	AQ	SW6010B ICP-AES	01/28/2022 10:47	01/28/2022 13:11	2
Q2202957006	CBL - 341I	AQ	E300.0, Anions	01/27/2022 12:05	01/28/2022 13:11	3
Q2202957006	CBL - 341I	AQ	Field pH SM4500H+B TCEQ VOL 1	01/27/2022 12:05	01/28/2022 13:11	1
Q2202957006	CBL - 341I	AQ	SM2540C, TDS	01/27/2022 12:05	01/28/2022 13:11	1
Q2202957006	CBL - 341I	AQ	SW6010B ICP-AES	01/27/2022 12:05	01/28/2022 13:11	2
Q2202957007	CBL - 641I	AQ	E300.0, Anions	01/27/2022 12:05	01/28/2022 13:11	3
Q2202957007	CBL - 641I	AQ	Field pH SM4500H+B TCEQ VOL 1	01/27/2022 12:05	01/28/2022 13:11	1
Q2202957007	CBL - 641I	AQ	SM2540C, TDS	01/27/2022 12:05	01/28/2022 13:11	1
Q2202957007	CBL - 641I	AQ	SW6010B ICP-AES	01/27/2022 12:05	01/28/2022 13:11	2
Q2202957008	EQB	AQ	E300.0, Anions	01/28/2022 09:57	01/28/2022 13:11	3
Q2202957008	EQB	AQ	SM2540C, TDS	01/28/2022 09:57	01/28/2022 13:11	1

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Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported
Q2202957008	EQB	AQ	SW6010B ICP-AES	01/28/2022 09:57	01/28/2022 13:11	2
Q2202957009	FB	AQ	E300.0, Anions	01/28/2022 10:00	01/28/2022 13:11	3
Q2202957009	FB	AQ	SM2540C, TDS	01/28/2022 10:00	01/28/2022 13:11	1
Q2202957009	FB	AQ	SW6010B ICP-AES	01/28/2022 10:00	01/28/2022 13:11	2

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
(S) - Surrogate Spike
MDL - Method Detection Limit
RPD - Relative Percent Difference

Qualifier Definitions

J - Analyte detected below quantitation limit
R - RPD outside duplicate precision limit
S - Spike recovery outside limit
B- Analyte detected in method blank
N - Not Accredited
M - Analyte Detected Above Maximum Contaminant Level
SL - Spike Recovery Low
SH - Spike Recovery High
H - Analyzed Past Hold Time
CR - Confirmed Result
CH - Result confirmed by historical data

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Workorder Summary

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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/26/2022 09:54	**Matrix:**	Aqueous
Lab ID:	Q2202957001	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	CBL - 301I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.27	pH				1	01/26/2022 09:54	CCP	01/26/2022 09:54	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	2440	mg/L	50.0	20.0		50	02/02/2022 01:09	FO	02/02/2022 01:09	FO	
Sulfate	406	mg/L	50.0	20.0		50	02/02/2022 01:09	FO	02/02/2022 01:09	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Fluoride	<0.0500	mg/L	0.0500	0.0200		5	02/07/2022 20:52	FO	02/07/2022 20:52	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:12	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	999	mg/L	2.00	0.700		10	02/08/2022 10:08	ME	02/10/2022 21:19	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	4700	mg/L	250	250		100	02/01/2022 13:19	ERR	02/01/2022 13:19	ERR	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/27/2022 10:44	**Matrix:**	Aqueous
Lab ID:	Q2202957002	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	CBL - 302I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.32	pH				1	01/27/2022 10:44	CCP	01/27/2022 10:44	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	1310	mg/L	50.0	20.0		50	02/02/2022 01:25	FO	02/02/2022 01:25	FO	
Sulfate	1340	mg/L	50.0	20.0		50	02/02/2022 01:25	FO	02/02/2022 01:25	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Fluoride	<0.0500	mg/L	0.0500	0.0200		5	02/07/2022 21:09	FO	02/07/2022 21:09	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:18	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	754	mg/L	2.00	0.700		10	02/08/2022 10:08	ME	02/10/2022 21:24	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	4510	mg/L	250	250		100	02/01/2022 14:12	ERR	02/01/2022 14:12	ERR	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/27/2022 13:11	**Matrix:**	Aqueous
Lab ID:	Q2202957003	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	CBL - 306I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.87	pH				1	01/27/2022 13:11	CCP	01/27/2022 13:11	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	384	mg/L	10.0	4.00		10	02/02/2022 00:53	FO	02/02/2022 00:53	FO	
Fluoride	2.99	mg/L	0.100	0.0400		10	02/02/2022 00:53	FO	02/02/2022 00:53	FO	
Sulfate	510	mg/L	10.0	4.00		10	02/02/2022 00:53	FO	02/02/2022 00:53	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.0548	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:23	FM	
Calcium Total	212	mg/L	0.200	0.0700		1	02/08/2022 10:08	ME	02/09/2022 18:23	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	1730	mg/L	250	250		100	02/01/2022 14:12	ERR	02/01/2022 14:12	ERR	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/27/2022 14:11	**Matrix:**	Aqueous
Lab ID:	Q2202957004	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	CBL - 308I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.36	pH				1	01/27/2022 14:11	CCP	01/27/2022 14:11	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	2020	mg/L	50.0	20.0		50	02/02/2022 01:41	FO	02/02/2022 01:41	FO	
Fluoride	1.75	mg/L	0.500	0.200		50	02/02/2022 01:41	FO	02/02/2022 01:41	FO	
Sulfate	1310	mg/L	50.0	20.0		50	02/02/2022 01:41	FO	02/02/2022 01:41	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	974	mg/L	2.00	0.700		10	02/08/2022 10:08	ME	02/10/2022 21:28	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:28	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	5320	mg/L	250	250		100	02/01/2022 14:12	ERR	02/01/2022 14:12	ERR	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/28/2022 10:47	**Matrix:**	Aqueous
Lab ID:	Q2202957005	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	CBL - 340I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.42	pH				1	01/28/2022 10:47	CCP	01/28/2022 10:47	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	2200	mg/L	50.0	20.0		50	02/02/2022 02:14	FO	02/02/2022 02:14	FO	
Fluoride	1.06	mg/L	0.500	0.200		50	02/02/2022 02:14	FO	02/02/2022 02:14	FO	
Sulfate	619	mg/L	50.0	20.0		50	02/02/2022 02:14	FO	02/02/2022 02:14	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.160	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:33	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	597	mg/L	2.00	0.700		10	02/08/2022 10:08	ME	02/10/2022 21:33	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	4870	mg/L	250	250		100	02/02/2022 13:47	ERR	02/02/2022 13:47	ERR	

Environmental Laboratory Services
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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/27/2022 12:05	**Matrix:**	Aqueous
Lab ID:	Q2202957006	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	CBL - 341I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.26	pH				1	01/27/2022 12:05	CCP	01/27/2022 12:05	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	1810	mg/L	50.0	20.0		50	02/02/2022 01:58	FO	02/02/2022 01:58	FO	
Sulfate	320	mg/L	50.0	20.0		50	02/02/2022 01:58	FO	02/02/2022 01:58	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Fluoride	<0.0500	mg/L	0.0500	0.0200		5	02/07/2022 21:26	FO	02/07/2022 21:26	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	1040	mg/L	2.00	0.700		10	02/08/2022 10:08	ME	02/10/2022 21:37	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:38	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	3800	mg/L	250	250		100	02/01/2022 14:12	ERR	02/01/2022 14:12	ERR	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/27/2022 12:05	**Matrix:**	Aqueous
Lab ID:	Q2202957007	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	CBL - 641I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.26	pH				1	01/27/2022 12:05	CCP	01/27/2022 12:05	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Fluoride	<0.0500	mg/L	0.0500	0.0200		5	02/07/2022 21:43	FO	02/07/2022 21:43	FO	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	1800	mg/L	50.0	20.0		50	02/02/2022 02:30	FO	02/02/2022 02:30	FO	
Sulfate	318	mg/L	50.0	20.0		50	02/02/2022 02:30	FO	02/02/2022 02:30	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:43	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	844	mg/L	2.00	0.700		10	02/08/2022 10:08	ME	02/10/2022 21:42	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	3620	mg/L	250	250		100	02/01/2022 14:12	ERR	02/01/2022 14:12	ERR	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/28/2022 09:57	**Matrix:**	Aqueous
Lab ID:	Q2202957008	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	EQB	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	<1.00	mg/L	1.00	0.400		1	02/02/2022 04:38	FO	02/02/2022 04:38	FO	
Fluoride	<0.0100	mg/L	0.0100	0.00400		1	02/02/2022 04:38	FO	02/02/2022 04:38	FO	
Sulfate	<1.00	mg/L	1.00	0.400		1	02/02/2022 04:38	FO	02/02/2022 04:38	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:48	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	02/08/2022 10:08	ME	02/09/2022 18:48	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		10	02/02/2022 13:47	ERR	02/02/2022 13:47	ERR	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	01/28/2022 10:00	**Matrix:**	Aqueous
Lab ID:	Q2202957009	**Date Received:**	01/28/2022 13:11	**Sample Type:**	SAMPLE
Sample ID:	FB	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	<1.00	mg/L	1.00	0.400		1	02/02/2022 10:02	FO	02/02/2022 10:02	FO	
Fluoride	<0.0100	mg/L	0.0100	0.00400		1	02/02/2022 10:02	FO	02/02/2022 10:02	FO	
Sulfate	<1.00	mg/L	1.00	0.400		1	02/02/2022 10:02	FO	02/02/2022 10:02	FO	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	02/08/2022 10:08	ME	02/09/2022 18:52	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	02/08/2022 10:08	ME	02/09/2022 18:52	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		10	02/02/2022 13:47	ERR	02/02/2022 13:47	ERR	

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Quality Control Results

QC Batch: MET/8986 **Analysis Method:** SW6010B ICP-AES
Preparation Method: SW3010A, Metals Prep
Associated Lab IDs: Q2202957001, Q2202957002, Q2202957003, Q2202957004, Q2202957005, Q2202957006, Q2202957007, Q2202957008, Q2202957009

Matrix Spike (1712186); Matrix Spike Duplicate (1712187); Original: Q2202957001

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Boron Total	mg/L	1.0	0.967	96.7	75 - 125	0.957	95.7	1.04	20	
Calcium Total	mg/L	10.0	1100.0	1050.0	75 - 125	1100.0	1000.0	0.0	20	SH

Method Blank(1712185)

Parameter	Units	Results	MRL	LOD	Qualifier
Boron Total	mg/L	<0.0500	0.05	0.02	
Calcium Total	mg/L	<0.200	0.2	0.07	

Lab Control Sample (1712183); Lab Control Sample Duplicate (1712184)

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Boron Total	mg/L	1.0	0.994	99.4	80 - 120	1.0	100.0	0.602	20	
Calcium Total	mg/L	10.0	10.6	106.0	80 - 120	10.6	106.0	0.0	20	

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Quality Control Results

QC Batch: WET/25746
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2202957001
Analysis Method: SM2540C, TDS

Matrix Spike (1710673); Original: Q2202716007

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	492.0	85.0	70 - 130	

Method Blank(1710670)

Parameter	Units	Results	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	mg/L	<25.0	25.0	25.0	

Duplicate (1710672); Original Q2202716007

Parameter	Units	Original	Duplicate	RPD	RPD Limit	Qualifier
Total Dissolved Solids(TDS)	mg/L	152.0	151.0	0.66	20	

Lab Control Sample (1710671)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	350.0	87.5	80 - 120	

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Quality Control Results

QC Batch: WET/25747 **Analysis Method:** SM2540C, TDS
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2202957002, Q2202957003, Q2202957004, Q2202957006, Q2202957007

Duplicate (1710682); Original Q2202897020

Parameter	Units	Original	Duplicate	RPD	RPD Limit	Qualifier
Total Dissolved Solids(TDS)	mg/L	512.0	510.0	0.391	20	

Method Blank(1710680)

Parameter	Units	Results	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	mg/L	<25.0	25.0	25.0	

Lab Control Sample (1710681)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	363.0	90.8	80 - 120	

Matrix Spike (1710683); Original: Q2202897020

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	908.0	99.0	70 - 130	

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Quality Control Results

QC Batch: WET/25753 **Analysis Method:** E300.0, Anions
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2202957001, Q2202957002, Q2202957003, Q2202957004, Q2202957005, Q2202957006, Q2202957007

Laboratory Fortified Matrix (1711272); Lab Fortified Matrix Duplicate (1711273); Original: Q2203385005

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Chloride	mg/L	20.0	58.5	90.4	80 - 120	58.6	90.6	0.171	20	
Fluoride	mg/L	1.0	1.4	96.5	80 - 120	1.4	96.5	0.0	20	
Sulfate	mg/L	20.0	44.1	103.0	80 - 120	44.1	103.0	0.0	20	

Laboratory Reagent Blank(1711253)

Parameter	Units	Results	MRL	LOD	Qualifier
Chloride	mg/L	<1.00	1.0	0.4	
Fluoride	mg/L	<0.0100	0.01	0.004	
Sulfate	mg/L	<1.00	1.0	0.4	

Laboratory Fortified Blank (1711254)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	30.0	30.5	102.0	90 - 110	
Fluoride	mg/L	1.0	1.01	101.0	90 - 110	
Sulfate	mg/L	30.0	30.2	101.0	90 - 110	

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Quality Control Results

QC Batch: WET/25753 **Analysis Method:** E300.0, Anions
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2202957001, Q2202957002, Q2202957003, Q2202957004, Q2202957005, Q2202957006, Q2202957007, Q2202957008, Q2202957009

Limit of Quantitation Check (1711248)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	5.0	4.15	83.0	70 - 130	
Fluoride	mg/L	0.02	0.0194	97.0	70 - 130	
Sulfate	mg/L	5.0	4.2	84.1	70 - 130	

Method Reporting Limit Check (1711246)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	1.0	0.734	73.4	50 - 150	
Fluoride	mg/L	0.01	0.0123	123.0	50 - 150	
Sulfate	mg/L	1.0	0.82	82.0	50 - 150	

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Quality Control Results

QC Batch: WET/25753
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2202957008
Analysis Method: E300.0, Anions

Laboratory Fortified Matrix (1711274); Lab Fortified Matrix Duplicate (1711275); Original: Q2202957008

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Chloride	mg/L	20.0	20.0	99.8	80 - 120	19.9	99.7	0.50 1	20	
Fluoride	mg/L	1.0	1.02	102.0	80 - 120	1.02	102.0	0.0	20	
Sulfate	mg/L	20.0	19.5	97.3	80 - 120	19.5	97.3	0.0	20	

Laboratory Reagent Blank(1711256)

Parameter	Units	Results	MRL	LOD	Qualifier
Chloride	mg/L	<1.00	1.0	0.4	
Fluoride	mg/L	<0.0100	0.01	0.004	
Sulfate	mg/L	<1.00	1.0	0.4	

Laboratory Fortified Blank (1711257)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	30.0	30.6	102.0	90 - 110	
Fluoride	mg/L	1.0	1.01	101.0	90 - 110	
Sulfate	mg/L	30.0	30.2	101.0	90 - 110	

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Quality Control Results

QC Batch: WET/25753
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2202957009
Analysis Method: E300.0, Anions

Laboratory Fortified Blank (1711260)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	30.0	30.5	102.0	90 - 110	
Fluoride	mg/L	1.0	1.02	102.0	90 - 110	
Sulfate	mg/L	30.0	30.1	100.0	90 - 110	

Laboratory Reagent Blank(1711259)

Parameter	Units	Results	MRL	LOD	Qualifier
Chloride	mg/L	<1.00	1.0	0.4	
Fluoride	mg/L	<0.0100	0.01	0.004	
Sulfate	mg/L	<1.00	1.0	0.4	

Laboratory Fortified Matrix (1711276); Lab Fortified Matrix Duplicate (1711277); Original: Q2202957009

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Chloride	mg/L	20.0	19.8	99.2	80 - 120	19.8	99.2	0.0	20	
Fluoride	mg/L	1.0	1.01	101.0	80 - 120	1.01	101.0	0.0	20	
Sulfate	mg/L	20.0	19.4	96.8	80 - 120	19.3	96.7	0.517	20	

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Quality Control Results

QC Batch: WET/25754
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2202957005, Q2202957008, Q2202957009
Analysis Method: SM2540C, TDS

Method Blank(1711478)

Parameter	Units	Results	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	mg/L	<25.0	25.0	25.0	

Matrix Spike (1711481); Original: Q2202957008

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	350.0	87.5	70 - 130	

Lab Control Sample (1711479)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	348.0	87.0	80 - 120	

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Quality Control Results

QC Batch: WET/25770 **Analysis Method:** E300.0, Anions
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2202957001, Q2202957002, Q2202957006, Q2202957007

Laboratory Fortified Blank (1712094)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Fluoride	mg/L	1.0	1.01	101.0	90 - 110	

Laboratory Reagent Blank(1712093)

Parameter	Units	Results	MRL	LOD	Qualifier
Fluoride	mg/L	<0.0100	0.01	0.004	

Method Reporting Limit Check (1712090)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Fluoride	mg/L	0.01	0.0084	84.0	50 - 150	

Laboratory Fortified Matrix (1712102); Lab Fortified Matrix Duplicate (1712103); Original: Q2203838011

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Fluoride	mg/L	1.0	1.19	99.8	80 - 120	1.19	100.0	0.0	20	

Limit of Quantitation Check (1712092)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Fluoride	mg/L	0.02	0.0176	88.0	70 - 130	

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QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
MET/8986 - SW6010B ICP-AES			
Q2202957001	CBL - 301I	MEP/11762	SW3010A, Metals Prep
Q2202957002	CBL - 302I	MEP/11762	SW3010A, Metals Prep
Q2202957003	CBL - 306I	MEP/11762	SW3010A, Metals Prep
Q2202957004	CBL - 308I	MEP/11762	SW3010A, Metals Prep
Q2202957005	CBL - 340I	MEP/11762	SW3010A, Metals Prep
Q2202957006	CBL - 341I	MEP/11762	SW3010A, Metals Prep
Q2202957007	CBL - 641I	MEP/11762	SW3010A, Metals Prep
Q2202957008	EQB	MEP/11762	SW3010A, Metals Prep
Q2202957009	FB	MEP/11762	SW3010A, Metals Prep
MET/8994 - SW6010B ICP-AES			
Q2202957001	CBL - 301I	MEP/11762	SW3010A, Metals Prep
Q2202957002	CBL - 302I	MEP/11762	SW3010A, Metals Prep
Q2202957004	CBL - 308I	MEP/11762	SW3010A, Metals Prep
Q2202957005	CBL - 340I	MEP/11762	SW3010A, Metals Prep
Q2202957006	CBL - 341I	MEP/11762	SW3010A, Metals Prep
Q2202957007	CBL - 641I	MEP/11762	SW3010A, Metals Prep
WET/25746 - SM2540C, TDS			
Q2202957001	CBL - 301I		
WET/25747 - SM2540C, TDS			
Q2202957002	CBL - 302I		
Q2202957003	CBL - 306I		
Q2202957004	CBL - 308I		
Q2202957006	CBL - 341I		
Q2202957007	CBL - 641I		
WET/25753 - E300.0, Anions			
Q2202957001	CBL - 301I		
Q2202957002	CBL - 302I		
Q2202957003	CBL - 306I		
Q2202957004	CBL - 308I		
Q2202957005	CBL - 340I		
Q2202957006	CBL - 341I		
Q2202957007	CBL - 641I		
Q2202957008	EQB		
Q2202957009	FB		

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QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
WET/25754 - SM2540C, TDS			
Q2202957005	CBL - 340I		
Q2202957008	EQB		
Q2202957009	FB		
WET/25770 - E300.0, Anions			
Q2202957001	CBL - 301I		
Q2202957002	CBL - 302I		
Q2202957006	CBL - 341I		
Q2202957007	CBL - 641I		

End of Report

LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

LCRA - Environmental Lab
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Austin, TX 78744

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Fax: (512) 730-6021
https://els.lcra.org

Lab ID#: Q2202957
Client PO:

Project:	FPP - CCR - Groundwater	**Client:**	LCRA
Collector:	EleTeskell/coltPeters	**Contact:**	Jason Woods
Event#:		**Phone:**	(512)730-5339

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

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

		Sample ID *	Collected Date*	Collected Time HH:MM*	Matrix* AQ = Aqueous DW = Drinking Water S = Solid T = Tissue	COMPOSITE Y/N	FILTERED Y/N	Containers 250PHNO3	Containers 500PU	Containers	Containers	Containers	Containers	Containers	Requested Analysis * 2540-AMTDS	300.0AM-28	6010-AM	F-pH							
CCV	1	CBL - 301I	1/26/22	954	AQ	~	~	1	1						X	X	X	X							
CC2	2	CBL - 302I	1/27/22	1044	AQ	|	|	1	1						X	X	X	X							
CC3	3	CBL - 306I	1/27/22	1311	AQ	|	|	1	1						X	X	X	X							
CC4	4	CBL - 308I	1/27/22	1411	AQ	|	|	1	1						X	X	X	X							
CC5	5	CBL - 340I	1/26/22	1047	AQ	|	|	1	1						X	X	X	X							
CC6	6	CBL - 341I	1/27/22	1205	AQ	|	|	1	1						X	X	X	X							
CC7	7	CBL - 641I	1/27/22	1205	AQ	|	|	1	1						X	X	X	X							
CC8	9	EQB	1/28/22	957	AQ	|	|	1	1						X	X	X								
CC9	10	FB	1/26/22	1000	AQ	-	-	1	1						X	X	X								

Transfers	Relinquished By	Date/Time	Received By	Date/Time	Cooler Temp: T#	Obs	CF	Corr.
1	ColtPeters	1/28/22 1312	Sanaz Rashid	01/28/2022 13:11				
2					1129	1.1°C	+0.1°C	1.2°C
3								

Client Special Instructions:

Lab Use Only:

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.

Q2202957
533182

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Field Information Form

Sample Date: 1/26/22
Sample Time: 954
Sample ID: CBL301T

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220126	0918	V= 3	9	10

PURGING AND SAMPLING EQUIPMENT

Purging Equipment Dedicated I Y I (N) Sampling Equipment Dedicated I Y I (N)

Purging Device	A	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device		B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	X- Sampling Other (Specify)
Purging Material	E	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	E	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	E	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Spectfy)
Tubing-Sampling	E	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	35.65 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	54.10 (ft)	Pump Placement	49 (ft)

6.27 (STD) PH 8072 uS/cm Specific Conductivity Sample Temp. 23.53 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P 2x	250mL	HNO_3	Metals	N
P	250mL	ICE	Anions	N
P	500mL	ICE	Anions	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 4.95
Weather Conditions: Cloudy North wind 5-10 mph 43°
Other: Purge water is clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross sectional area
(2" dia. A= 0.0218) 4" dia. A = 0.0872

Well Appearance Normal: Yes X No
If No, Explain

Procedure: ELS Ground Water SOP 5-7P
Date: 1/26/22
Sampler: ET/CP
Employer: LCRA

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Field Information Form

Sample Date: 1/27/22
Sample Time: 1044
Sample ID: CBL302I

PURGING INFORMATION

220127	0953	V= 2.7	8	8
PURGE 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 AND SAMPLING EQUIPMENT

Purging Equipment Dedicated (Y) I N I Sampling Equipment Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	EF	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	E	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	E	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Spectfy)
Tubing-Sampling	E	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	10.70 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	27.11 (ft)	Pump Placement	23 (ft)

6.32 (STD) PH 61164 uS/cm Specific Conductivity Sample Temp. 21.68 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250mL	HNO3	Metals	N
P	500mL	ICE	Anion	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 2.19
Weather Conditions: Clear, Calm 50°
Other: Purge water is clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ galft^3)$ where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross sectional area
2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No
If No, Explain

Procedure: ELS Groundwater SOP 5-7D
Date: 1/27/22
Sampler: ET/CP
Employer: LCRA

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Field Information Form

Sample Date: 1/27/22
Sample Time: 1205
Sample ID: CBL341I

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220127	1102	V= 49	147	8

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Spectfy)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	16.48 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	46.43 (ft)	Pump Placement	38 (ft)

6.26 (STD) PH 61415 uS/cm Specific Conductivity Sample Temp. 21.87 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	500mL	ICE	Anions	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 0.75
Weather Conditions: Clear, calm 53°
Other: Purge water is clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross sectional area
(2" dia. A= 0.0218) 4" dia. A = 0.0872

Well Appearance Normal: Yes X No
If No, Explain

Procedure: ELS Groundwater SOP 5-70
Date: 1/27/22
Sampler: ET/CP
Employer: LCRA

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Field Information Form

Sample Date: 1/28/22
Sample Time: 1047
Sample ID: CBL340I

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220128	0959	V= 12.5	37.6	7

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Spectfy)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	24.68 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	40.19 (ft)	Pump Placement	34 (ft)

6.42 (STD) PH 7723 uS/cm Specific Conductivity Sample Temp. 21.36 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	500mL	ICE	Anions	N
P	2x250	HNO_3	Metals Field Blank and EQ Blank	N
P	2x500	ICE	Anions Field Blank and EQ Blank	N

Sample Appearance: Clear Odor: none Color: clear Turbidity: 1.47
Weather Conditions: Partly Cloudy North wind 5-10mph 48°
Other: Purge water is Clear with no odor.

WELL VOLUME CALCULATION

$V=(D-D_w)$ (A) (7.48 $galt/ft^3$) where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross sectional area
2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____
If No, Explain _____

Procedure: ELS Ground water SOP 5-7D
Date: 1/28/22
Sampler: CP
Employer: LCRA

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Field Information Form

Sample Date: 1/27/22
Sample Time: 1311
Sample ID: CBL3061

PURGING INFORMATION

220127	1238	V= 1	3	5
PURGE 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 AND SAMPLING EQUIPMENT

Purging Equipment Dedicated (Y) I N I Sampling Equipment Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	X- Sampling Other (Specify)
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Spectfy)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	8.71 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	14.80 (ft)	Pump Placement	12 (ft)

6.87 (STD) PH 3062 uS/cm Specific Conductivity Sample Temp. 21.53 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	2x250mL	HNO_3	Metals	N
P	250mL	ICE	Anions	N
P	500mL	ICE	Anions	N
P	250mL	HNO_3	Metals Field Blank 3	N

Sample Appearance: Clear Odor: none Color: clear Turbidity: 10.5
Weather Conditions: Clear Calm 56°
Other: Purge water is clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross sectional area
2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____
If No, Explain _____

Procedure: ELS Groundwater SOP 5-7D
Date: 1/27/22
Sampler: ET/CP
Employer: LCRA

LCRA ENERGY • WATER • COMMUNITY SERVICES

Field Information Form

Sample Date: 1/27/22

Sample Time: 1411

Sample ID: CBL308

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220127	1335	V= 1.8	5.4	5

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Spectfy)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	24.38 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	35.30 (ft)	Pump Placement	30 (ft)

PH: 6.36 (STD) Specific Conductivity: 831.6 uS/cm Sample Temp.: 22.05 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	2x250mL	HNO_3	Metals	N
P	250mL	ICE	Anions	N
P	500mL	ICE	Anions	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 3.93

Weather Conditions: Partly Cloudy Calm 58°

Other: Purge water is clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)(A)(7.48\ gal/ft^3)$ where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Ground water SOP 5-7D

Date: 1/27/22

Sampler: ET/CP

Employer: LCRA

DATA USABILITY SUMMARY – LCRA Analytical Reports Q2221595, Q2225751, and Q2232067

Bullock, Bennett & Associates, LLC has reviewed the analytical data packages to be included in Appendix D of the Coal Combustion Residual Landfill 2022 Annual Groundwater Monitoring Report (Annual Groundwater Report) that was produced by LCRA Environmental Laboratory Services (ELS) for the analysis of groundwater samples collected in June 2022 at the Fayette Power Project (FPP) site. The Data were reviewed for conformance to the groundwater sampling and analysis requirements of 40 CFR § 257.93/30 TAC 352.931 and adherence to project objectives.

Objectives of the Data: To provide current data on concentrations of COCs in groundwater at the site for purposes of comparing Combustion Byproducts Landfill (CBL) compliance sample data to Appendix III Control Limits. To accomplish the stated data objectives, all field and laboratory procedures were performed in accordance with industry-established protocol, and the FPP Sampling and Analysis Plan. Appropriate quality assurance/quality control (QA/QC) measures were utilized. As described within the body of the Annual Groundwater Report, field QA/QC protocols integrated into this project followed industry standards and involved, among other factors:

- Use of sampling equipment decontamination protocol;
- Proper sample handling, preservation, and shipping procedures; and
- Maintenance of the sample chain of custody.

Also, as presented in the individual laboratory data packages, laboratory QA/QC procedures integrated into this project followed industry standards and involved, among others:

- Maintenance of sample custody;
- Application of laboratory cross references to field sample identifications and to specific QC samples;
- Use of laboratory control samples (LCSs);
- Use of matrix spike/matrix duplicate spikes (MS/MSDs);
- Use of appropriate method and method reporting limit (MRL);
- Reporting of non-detect results as less than the value of the MRL;
- Use of surrogate recoveries;
- Calculation of relative percent differences (RPDs);
- Use of method and preparation blanks; and
- The application of data qualifiers.

Data Reviewed: The data reviewed consisted of laboratory submittals and field data as follows:

- Project Objectives (i.e., recoveries and relative percent differences);
- Analytical Results, including, as applicable, data qualifiers;
- Documentation of preservation and holding times;
- Field and laboratory equipment calibrations;
- Laboratory blanks;
- Internal Laboratory Control Standards and Surrogate Recoveries;
- Laboratory Control Samples;
- Matrix Spike/Matrix Spike Duplicates;

- Field Precision as determined by duplicate samples collected in the field; and
- Field Procedures.

The results of the supporting quality control analyses for each of these QC factors were summarized in Quality Control narratives provided by the laboratory, and field/laboratory-completed chain of custody forms, the field forms, and the LCRA standard operational field procedures and the Groundwater Sampling Procedures. A review of each of these was included in this Data Usability Review.

Based on the Data Usability Review, the groundwater data are usable for their intended purpose. All samples were collected in the field using industry-standard operating procedures (SOPs), including decontamination protocol, sample preservation, and chain of custody.

Also, as presented in detail in the attached laboratory data packages, all appropriate QA/QC protocol were accomplished by the analytical laboratory. Where applicable, data have been appropriately qualified in the laboratory reports and the data, therefore, have been used accordingly.

It is noted that the July 2022 sampling event's Matrix Spike (MS) (1782140) recovery and associated Matrix Spike Duplicate (MSD) (1782141) recovery from the original sample (Lab ID: Q2221595004) for calcium analysis had high recoveries, outside of the established Control Limit ranges, and these results are appropriately flagged. Given that the Spike concentration (10 milligrams per liter) in these samples were approximately 74 times lower than the sample aliquot which was spiked, the high recoveries are not unexpected. Laboratory Control Sample Spike and Laboratory Control Sample Spike Duplicates were within acceptable recovery limits. Based on this information, the data are considered usable.

All exceptions were documented and described in the Quality Control narratives and no conditions with regard to laboratory control samples, matrix spike/matrix spike duplicates, sample preservation and holding times, or equipment calibrations were identified that would cause any of the data not to be useable.

LCRA Environmental Laboratory Services
3505 Montopolis Drive
Austin, TX 78744
Phone (512)730-6022
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August 19, 2022

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

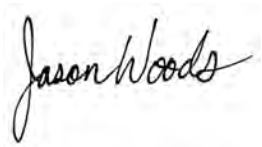
RE: Final Analytical Report Q2221595

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 or environmental.lab@lcra.org. We look forward to assisting you again.

Authorized for release by:



Jason Woods
Account Manager
jason.woods@lcra.org

Enclosures:

Environmental Laboratory Services
The Solution Lab

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

Workorder: Q2221595
Workorder Description: FPPCCR
Client: LCRA
Profile: FPP GWMP CCR

Sampled By: COLT PETRI/ELLE TERRELL

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

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported
Q2221595001	CBL - 301I	AQ	E300.0, Anions	07/27/2022 12:42	07/28/2022 15:21	3
Q2221595001	CBL - 301I	AQ	Field pH SM4500H+B TCEQ VOL 1	07/27/2022 12:42	07/28/2022 15:21	1
Q2221595001	CBL - 301I	AQ	SM2540C, TDS	07/27/2022 12:42	07/28/2022 15:21	1
Q2221595001	CBL - 301I	AQ	SW6010B ICP-AES	07/27/2022 12:42	07/28/2022 15:21	2
Q2221595002	CBL - 302I	AQ	E300.0, Anions	07/28/2022 11:26	07/28/2022 15:21	3
Q2221595002	CBL - 302I	AQ	Field pH SM4500H+B TCEQ VOL 1	07/28/2022 11:26	07/28/2022 15:21	1
Q2221595002	CBL - 302I	AQ	SM2540C, TDS	07/28/2022 11:26	07/28/2022 15:21	1
Q2221595002	CBL - 302I	AQ	SW6010B ICP-AES	07/28/2022 11:26	07/28/2022 15:21	2
Q2221595003	CBL - 306I	AQ	E300.0, Anions	07/28/2022 09:57	07/28/2022 15:21	3
Q2221595003	CBL - 306I	AQ	Field pH SM4500H+B TCEQ VOL 1	07/28/2022 09:57	07/28/2022 15:21	1
Q2221595003	CBL - 306I	AQ	SM2540C, TDS	07/28/2022 09:57	07/28/2022 15:21	1
Q2221595003	CBL - 306I	AQ	SW6010B ICP-AES	07/28/2022 09:57	07/28/2022 15:21	2
Q2221595004	CBL - 308I	AQ	E300.0, Anions	07/27/2022 11:37	07/28/2022 15:21	3
Q2221595004	CBL - 308I	AQ	Field pH SM4500H+B TCEQ VOL 1	07/27/2022 11:37	07/28/2022 15:21	1
Q2221595004	CBL - 308I	AQ	SM2540C, TDS	07/27/2022 11:37	07/28/2022 15:21	1
Q2221595004	CBL - 308I	AQ	SW6010B ICP-AES	07/27/2022 11:37	07/28/2022 15:21	2
Q2221595005	CBL - 340I	AQ	E300.0, Anions	07/28/2022 09:35	07/28/2022 15:21	3
Q2221595005	CBL - 340I	AQ	Field pH SM4500H+B TCEQ VOL 1	07/28/2022 09:35	07/28/2022 15:21	1
Q2221595005	CBL - 340I	AQ	SM2540C, TDS	07/28/2022 09:35	07/28/2022 15:21	1
Q2221595005	CBL - 340I	AQ	SW6010B ICP-AES	07/28/2022 09:35	07/28/2022 15:21	2
Q2221595006	CBL - 341I	AQ	E300.0, Anions	07/28/2022 12:33	07/28/2022 15:21	3
Q2221595006	CBL - 341I	AQ	Field pH SM4500H+B TCEQ VOL 1	07/28/2022 12:33	07/28/2022 15:21	1
Q2221595006	CBL - 341I	AQ	SM2540C, TDS	07/28/2022 12:33	07/28/2022 15:21	1
Q2221595006	CBL - 341I	AQ	SW6010B ICP-AES	07/28/2022 12:33	07/28/2022 15:21	2
Q2221595007	CBL - 640I	AQ	E300.0, Anions	07/28/2022 09:35	07/28/2022 15:21	3
Q2221595007	CBL - 640I	AQ	Field pH SM4500H+B TCEQ VOL 1	07/28/2022 09:35	07/28/2022 15:21	1
Q2221595007	CBL - 640I	AQ	SM2540C, TDS	07/28/2022 09:35	07/28/2022 15:21	1
Q2221595007	CBL - 640I	AQ	SW6010B ICP-AES	07/28/2022 09:35	07/28/2022 15:21	2
Q2221595008	EQB	AQ	E300.0, Anions	07/28/2022 11:30	07/28/2022 15:21	3
Q2221595008	EQB	AQ	SM2540C, TDS	07/28/2022 11:30	07/28/2022 15:21	1

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Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported
Q2221595008	EQB	AQ	SW6010B ICP-AES	07/28/2022 11:30	07/28/2022 15:21	2
Q2221595009	FB	AQ	E300.0, Anions	07/28/2022 11:30	07/28/2022 15:21	3
Q2221595009	FB	AQ	SM2540C, TDS	07/28/2022 11:30	07/28/2022 15:21	1
Q2221595009	FB	AQ	SW6010B ICP-AES	07/28/2022 11:30	07/28/2022 15:21	2

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
(S) - Surrogate Spike
MDL - Method Detection Limit
RPD - Relative Percent Difference

Qualifier Definitions

J - Analyte detected below quantitation limit
R - RPD outside duplicate precision limit
S - Spike recovery outside limit
B- Analyte detected in method blank
N - Not Accredited
M - Analyte Detected Above Maximum Contaminant Level
SL - Spike Recovery Low
SH - Spike Recovery High
H - Analyzed Past Hold Time
CR - Confirmed Result
CH - Result confirmed by historical data

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Workorder Summary

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Analytical Results

Client ID:	LCRA	**Date Collected:**	07/27/2022 12:42	**Matrix:**	Aqueous
Lab ID:	Q2221595001	**Date Received:**	07/28/2022 15:21	**Sample Type:**	SAMPLE
Sample ID:	CBL - 301I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.08	pH				1	07/27/2022 12:42	CCP	07/27/2022 12:42	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	1840	mg/L	50.0	20.0		50	07/29/2022 16:16	BC	07/29/2022 16:16	BC	
Sulfate	285	mg/L	50.0	20.0		50	07/29/2022 16:16	BC	07/29/2022 16:16	BC	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Fluoride	0.156	mg/L	0.100	0.0400		10	08/01/2022 23:06	BC	08/01/2022 23:06	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	1010	mg/L	1.00	0.350		5	08/04/2022 15:39	FM	08/17/2022 14:37	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.0850	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 19:50	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	4590	mg/L	250	250		100	08/02/2022 09:49	ML	08/02/2022 09:49	ML	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	07/28/2022 11:26	**Matrix:**	Aqueous
Lab ID:	Q2221595002	**Date Received:**	07/28/2022 15:21	**Sample Type:**	SAMPLE
Sample ID:	CBL - 302I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.21	pH				1	07/28/2022 11:26	CCP	07/28/2022 11:26	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	1300	mg/L	50.0	20.0		50	07/29/2022 16:37	BC	07/29/2022 16:37	BC	
Sulfate	1300	mg/L	50.0	20.0		50	07/29/2022 16:37	BC	07/29/2022 16:37	BC	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Fluoride	0.165	mg/L	0.0100	0.00400		1	08/01/2022 23:28	BC	08/01/2022 23:28	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	750	mg/L	1.00	0.350		5	08/04/2022 15:39	FM	08/17/2022 14:42	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 19:55	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	5120	mg/L	250	250		100	08/02/2022 09:49	ML	08/02/2022 09:49	ML	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	07/28/2022 09:57	**Matrix:**	Aqueous
Lab ID:	Q2221595003	**Date Received:**	07/28/2022 15:21	**Sample Type:**	SAMPLE
Sample ID:	CBL - 306I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.70	pH				1	07/28/2022 09:57	CCP	07/28/2022 09:57	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	261	mg/L	25.0	10.0		25	07/29/2022 16:58	BC	07/29/2022 16:58	BC	
Fluoride	2.26	mg/L	0.250	0.100		25	07/29/2022 16:58	BC	07/29/2022 16:58	BC	
Sulfate	348	mg/L	25.0	10.0		25	07/29/2022 16:58	BC	07/29/2022 16:58	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.110	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 20:00	FM	
Calcium Total	182	mg/L	0.200	0.0700		1	08/04/2022 15:39	FM	08/08/2022 20:00	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	1540	mg/L	125	125		50	08/02/2022 09:49	ML	08/02/2022 09:49	ML	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	07/27/2022 11:37	**Matrix:**	Aqueous
Lab ID:	Q2221595004	**Date Received:**	07/28/2022 15:21	**Sample Type:**	SAMPLE
Sample ID:	CBL - 308I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.23	pH				1	07/27/2022 11:37	CCP	07/27/2022 11:37	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	2470	mg/L	50.0	20.0		50	07/29/2022 17:19	BC	07/29/2022 17:19	BC	
Fluoride	1.43	mg/L	0.500	0.200		50	07/29/2022 17:19	BC	07/29/2022 17:19	BC	
Sulfate	1190	mg/L	50.0	20.0		50	07/29/2022 17:19	BC	07/29/2022 17:19	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.0790	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 20:05	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	736	mg/L	1.00	0.350		5	08/04/2022 15:39	FM	08/17/2022 14:47	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	6840	mg/L	500	500		200	08/02/2022 09:49	ML	08/02/2022 09:49	ML	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	07/28/2022 09:35	**Matrix:**	Aqueous
Lab ID:	Q2221595005	**Date Received:**	07/28/2022 15:21	**Sample Type:**	SAMPLE
Sample ID:	CBL - 340I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.35	pH				1	07/28/2022 09:35	CCP	07/28/2022 09:35	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	2160	mg/L	50.0	20.0		50	07/29/2022 17:39	BC	07/29/2022 17:39	BC	
Fluoride	0.865	mg/L	0.500	0.200		50	07/29/2022 17:39	BC	07/29/2022 17:39	BC	
Sulfate	614	mg/L	50.0	20.0		50	07/29/2022 17:39	BC	07/29/2022 17:39	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	538	mg/L	0.400	0.140		2	08/04/2022 15:39	FM	08/17/2022 14:51	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.285	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 20:09	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	5490	mg/L	250	250		100	08/02/2022 09:49	ML	08/02/2022 09:49	ML	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	07/28/2022 12:33	**Matrix:**	Aqueous
Lab ID:	Q2221595006	**Date Received:**	07/28/2022 15:21	**Sample Type:**	SAMPLE
Sample ID:	CBL - 341I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.16	pH				1	07/28/2022 12:33	CCP	07/28/2022 12:33	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Fluoride	0.141	mg/L	0.100	0.0400		10	08/01/2022 23:51	BC	08/01/2022 23:51	BC	

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	1690	mg/L	50.0	20.0		50	07/29/2022 18:00	BC	07/29/2022 18:00	BC	
Sulfate	296	mg/L	50.0	20.0		50	07/29/2022 18:00	BC	07/29/2022 18:00	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	704	mg/L	1.00	0.350		5	08/04/2022 15:39	FM	08/17/2022 14:56	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.115	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 20:14	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	4910	mg/L	250	250		100	08/02/2022 09:49	ML	08/02/2022 09:49	ML	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	07/28/2022 09:35	**Matrix:**	Aqueous
Lab ID:	Q2221595007	**Date Received:**	07/28/2022 15:21	**Sample Type:**	SAMPLE
Sample ID:	CBL - 640I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (Field pH SM4500H+B TCEQ VOL 1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.35	pH				1	07/28/2022 09:35	CCP	07/28/2022 09:35	CCP	N

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	2160	mg/L	50.0	20.0		50	07/29/2022 18:21	BC	07/29/2022 18:21	BC	
Fluoride	0.775	mg/L	0.500	0.200		50	07/29/2022 18:21	BC	07/29/2022 18:21	BC	
Sulfate	614	mg/L	50.0	20.0		50	07/29/2022 18:21	BC	07/29/2022 18:21	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.270	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 20:18	FM	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Calcium Total	495	mg/L	0.400	0.140		2	08/04/2022 15:39	FM	08/17/2022 15:01	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	5300	mg/L	250	250		100	08/02/2022 09:49	ML	08/02/2022 09:49	ML	

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Analytical Results

Client ID: LCRA
Lab ID: Q2221595008
Sample ID: EQB
Project ID: FPP GWMP CCR

Date Collected: 07/28/2022 11:30
Date Received: 07/28/2022 15:21
Location:
Facility:
Sample Point:

Matrix: Aqueous
Sample Type: SAMPLE

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	<1.00	mg/L	1.00	0.400		1	07/29/2022 15:55	BC	07/29/2022 15:55	BC	
Fluoride	<0.0100	mg/L	0.0100	0.00400		1	07/29/2022 15:55	BC	07/29/2022 15:55	BC	
Sulfate	<1.00	mg/L	1.00	0.400		1	07/29/2022 15:55	BC	07/29/2022 15:55	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 20:23	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	08/04/2022 15:39	FM	08/08/2022 20:23	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		10	08/03/2022 08:08	ML	08/03/2022 08:08	ML	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	07/28/2022 11:30	**Matrix:**	Aqueous
Lab ID:	Q2221595009	**Date Received:**	07/28/2022 15:21	**Sample Type:**	SAMPLE
Sample ID:	FB	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

INORGANICS (E300.0, Anions)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Chloride	<1.00	mg/L	1.00	0.400		1	07/29/2022 21:09	BC	07/29/2022 21:09	BC	
Fluoride	<0.0100	mg/L	0.0100	0.00400		1	07/29/2022 21:09	BC	07/29/2022 21:09	BC	
Sulfate	<1.00	mg/L	1.00	0.400		1	07/29/2022 21:09	BC	07/29/2022 21:09	BC	

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	08/04/2022 15:39	FM	08/08/2022 20:27	FM	
Calcium Total	<0.200	mg/L	0.200	0.0700		1	08/04/2022 15:39	FM	08/08/2022 20:27	FM	

TOTAL DISSOLVED SOLIDS (SM2540C, TDS)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Total Dissolved Solids(TDS)	<25.0	mg/L	25.0	25.0		10	08/03/2022 08:08	ML	08/03/2022 08:08	ML	

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Quality Control Results

QC Batch: MET/9335 **Analysis Method:** SW6010B ICP-AES
Preparation Method: SW3010A, Metals Prep
Associated Lab IDs: Q2221595001, Q2221595002, Q2221595003, Q2221595004, Q2221595005, Q2221595006, Q2221595007, Q2221595008, Q2221595009

Matrix Spike (1782140); Matrix Spike Duplicate (1782141); Original: Q2221595004

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Boron Total	mg/L	1.0	1.08	99.8	75 - 125	1.07	99.3	0.93	20	
Calcium Total	mg/L	10.0	762.0	257.0	75 - 125	759.0	231.0	0.394	20	SH

Lab Control Sample (1782137); Lab Control Sample Duplicate (1782138)

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Boron Total	mg/L	1.0	1.01	101.0	80 - 120	0.987	98.7	2.3	20	
Calcium Total	mg/L	10.0	9.25	92.5	80 - 120	9.23	92.3	0.216	20	

Method Blank(1782136)

Parameter	Units	Results	MRL	LOD	Qualifier
Boron Total	mg/L	<0.0500	0.05	0.02	
Calcium Total	mg/L	<0.200	0.2	0.07	

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Quality Control Results

QC Batch: WET/26859 **Analysis Method:** E300.0, Anions
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2221595001, Q2221595002, Q2221595003, Q2221595004, Q2221595005, Q2221595006, Q2221595007, Q2221595008

Laboratory Fortified Matrix (1779902); Lab Fortified Matrix Duplicate (1779903); Original: Q2221595008

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Chloride	mg/L	20.0	18.9	94.7	80 - 120	18.9	94.6	0.0	20	
Fluoride	mg/L	1.0	0.98	98.0	80 - 120	0.965	96.5	1.54	20	
Sulfate	mg/L	20.0	19.0	94.8	80 - 120	19.0	94.8	0.0	20	

Laboratory Fortified Blank (1779900)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	30.0	29.1	96.9	90 - 110	
Fluoride	mg/L	1.0	0.966	96.6	90 - 110	
Sulfate	mg/L	30.0	29.6	98.8	90 - 110	

Laboratory Reagent Blank(1779897)

Parameter	Units	Results	MRL	LOD	Qualifier
Chloride	mg/L	<1.00	1.0	0.4	
Fluoride	mg/L	<0.0100	0.01	0.004	
Sulfate	mg/L	<1.00	1.0	0.4	

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Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Quality Control Results

QC Batch: WET/26859 **Analysis Method:** E300.0, Anions
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2221595001, Q2221595002, Q2221595003, Q2221595004, Q2221595005, Q2221595006, Q2221595007, Q2221595008, Q2221595009

Limit of Quantitation Check (1779901)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	5.0	3.91	78.3	70 - 130	
Fluoride	mg/L	0.02	0.0206	103.0	70 - 130	
Sulfate	mg/L	5.0	4.1	82.0	70 - 130	

Method Reporting Limit Check (1779899)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	1.0	0.697	69.7	50 - 150	
Fluoride	mg/L	0.01	0.011	110.0	50 - 150	
Sulfate	mg/L	1.0	0.774	77.4	50 - 150	

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Quality Control Results

QC Batch: WET/26859
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2221595009
Analysis Method: E300.0, Anions

Laboratory Fortified Blank (1779906)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Chloride	mg/L	30.0	29.0	96.8	90 - 110	
Fluoride	mg/L	1.0	0.983	98.3	90 - 110	
Sulfate	mg/L	30.0	29.5	98.2	90 - 110	

Laboratory Reagent Blank(1779905)

Parameter	Units	Results	MRL	LOD	Qualifier
Chloride	mg/L	<1.00	1.0	0.4	
Fluoride	mg/L	<0.0100	0.01	0.004	
Sulfate	mg/L	<1.00	1.0	0.4	

Laboratory Fortified Matrix (1779907); Lab Fortified Matrix Duplicate (1779908); Original: Q2221595009

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Chloride	mg/L	20.0	18.6	93.0	80 - 120	18.5	92.5	0.539	20	
Fluoride	mg/L	1.0	0.953	95.3	80 - 120	0.956	95.6	0.314	20	
Sulfate	mg/L	20.0	18.7	93.5	80 - 120	18.7	93.4	0.0	20	

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Quality Control Results

QC Batch: WET/26866
Preparation Method: E300.0, Anions
Associated Lab IDs: Q2221595001, Q2221595002, Q2221595006
Analysis Method: E300.0, Anions

Method Reporting Limit Check (1780142)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Fluoride	mg/L	0.01	0.011	110.0	50 - 150	

Limit of Quantitation Check (1780144)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Fluoride	mg/L	0.02	0.0195	97.5	70 - 130	

Duplicate (1780158); Original Q2221678005

Parameter	Units	Original	Duplicate	RPD	RPD Limit	Qualifier
Fluoride	mg/L	2.44	2.26	7.66		

Laboratory Fortified Blank (1780149)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Fluoride	mg/L	1.0	1.02	102.0	90 - 110	

Laboratory Reagent Blank(1780148)

Parameter	Units	Results	MRL	LOD	Qualifier
Fluoride	mg/L	<0.0100	0.01	0.004	

Laboratory Fortified Matrix (1780150); Lab Fortified Matrix Duplicate (1780151); Original: Q2221715002

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Fluoride	mg/L	10.0	11.1	92.7	80 - 120	11.8	100.0	6.11	20	

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Quality Control Results

QC Batch: WET/26873 **Analysis Method:** SM2540C, TDS
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2221595001, Q2221595002, Q2221595003, Q2221595004, Q2221595005, Q2221595006, Q2221595007

Duplicate (1780722); Original Q2221505004

Parameter	Units	Original	Duplicate	RPD	RPD Limit	Qualifier
Total Dissolved Solids(TDS)	mg/L	1210.0	1220.0	0.823	20	

Matrix Spike (1780723); Original: Q2221505004

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	1580.0	92.5	70 - 130	

Method Blank(1780720)

Parameter	Units	Results	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	mg/L	<25.0	25.0	25.0	

Lab Control Sample (1780721)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	355.0	88.8	80 - 120	

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Quality Control Results

QC Batch: WET/26883
Preparation Method: SM2540C, TDS
Associated Lab IDs: Q2221595008, Q2221595009
Analysis Method: SM2540C, TDS

Duplicate (1781343); Original Q2221595008

Parameter	Units	Original	Duplicate	RPD	RPD Limit	Qualifier
Total Dissolved Solids(TDS)	mg/L	-3.0	-13.0	-125.0	20	

Lab Control Sample (1781342)

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	381.0	95.2	80 - 120	

Matrix Spike (1781344); Original: Q2221595008

Parameter	Units	Spiked Amount	Spike Result	Spike Recovery%	Control Limits %	Qualifier
Total Dissolved Solids(TDS)	mg/L	400.0	350.0	87.5	70 - 130	

Method Blank(1781341)

Parameter	Units	Results	MRL	LOD	Qualifier
Total Dissolved Solids(TDS)	mg/L	<25.0	25.0	25.0	

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Fax (512)730-6021

QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
MET/9335 - SW6010B ICP-AES			
Q2221595001	CBL - 301I	MEP/12162	SW3010A, Metals Prep
Q2221595002	CBL - 302I	MEP/12162	SW3010A, Metals Prep
Q2221595003	CBL - 306I	MEP/12162	SW3010A, Metals Prep
Q2221595004	CBL - 308I	MEP/12162	SW3010A, Metals Prep
Q2221595005	CBL - 340I	MEP/12162	SW3010A, Metals Prep
Q2221595006	CBL - 341I	MEP/12162	SW3010A, Metals Prep
Q2221595007	CBL - 640I	MEP/12162	SW3010A, Metals Prep
Q2221595008	EQB	MEP/12162	SW3010A, Metals Prep
Q2221595009	FB	MEP/12162	SW3010A, Metals Prep
MET/9350 - SW6010B ICP-AES			
Q2221595001	CBL - 301I	MEP/12162	SW3010A, Metals Prep
Q2221595002	CBL - 302I	MEP/12162	SW3010A, Metals Prep
Q2221595004	CBL - 308I	MEP/12162	SW3010A, Metals Prep
Q2221595005	CBL - 340I	MEP/12162	SW3010A, Metals Prep
Q2221595006	CBL - 341I	MEP/12162	SW3010A, Metals Prep
Q2221595007	CBL - 640I	MEP/12162	SW3010A, Metals Prep
WET/26859 - E300.0, Anions			
Q2221595001	CBL - 301I		
Q2221595002	CBL - 302I		
Q2221595003	CBL - 306I		
Q2221595004	CBL - 308I		
Q2221595005	CBL - 340I		
Q2221595006	CBL - 341I		
Q2221595007	CBL - 640I		
Q2221595008	EQB		
Q2221595009	FB		
WET/26866 - E300.0, Anions			
Q2221595001	CBL - 301I		
Q2221595002	CBL - 302I		
Q2221595006	CBL - 341I		

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QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
WET/26873 - SM2540C, TDS			
Q2221595001	CBL - 301I		
Q2221595002	CBL - 302I		
Q2221595003	CBL - 306I		
Q2221595004	CBL - 308I		
Q2221595005	CBL - 340I		
Q2221595006	CBL - 341I		
Q2221595007	CBL - 640I		
WET/26883 - SM2540C, TDS			
Q2221595008	EQB		
Q2221595009	FB		

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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) 730-6021
https://els.lcra.org

Q7221595

Lab ID#:
Client PO:

Project:	FPP - CCR - Groundwater	Client:	LCRA
Collector:	Elle Terrell Colt Petri	Contact:	
Event#:		Phone:	

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

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

		Sample ID *	Collected Date*	Collected Time HH:MM*	Matrix* (AQ = Aqueous, DW = Drinking Water, S = Solid, T = Tissue)	COMPOSITE Y/N	FILTERED Y/N	Containers 250PHNO3	Containers 500PU	Requested Analysis * 2540-AMTDS	300.0AM-28	6010-AM	F-pH
001	1	CBL - 301I	7/27/22	1242	AQ	Y	N	1	1	X	X	X	X
002	2	CBL - 302I	7/28/22	1126	AQ			1	1	X	X	X	X
003	3	CBL - 306I	7/28/22	957	AQ			1	1	X	X	X	X
004	4	CBL - 308I	7/27/22	1137	AQ			1	1	X	X	X	X
005	5	CBL - 340I	7/28/22	935	AQ			1	1	X	X	X	X
006	6	CBL - 341I	7/28/22	1233	AQ			1	1	X	X	X	X
007	7	CBL - 640I	7/28/22	935	AQ			1	1	X	X	X	X
008	9	EQB	7/28/22	1130	AQ			1	1	X	X	X	
009	10	FB	7/28/22	1130	AQ	—	—	1	1	X	X	X	

Transfers	Relinquished By	Date/Time	Received By	Date/Time	Cooler Temp: T#	Obs	CF	Corr
1	Colt Petri	7/28/22 1521		7/28/22 1521	IR9	1.3	0.0	1.3
2								
3								

Client Special Instructions:

Lab Use Only:

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.

02221595
551820

End of Report

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LCRA ENERGY • WATER • COMMUNITY SERVICES

Field Information Form

Sample Date: 7/27/22

Sample Time: 1242

Sample ID: CBL301I

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220727	1209	V= 13.1	39.3	110

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated I Y I (N)

Sampling Equipment ..... Dedicated I Y I (N)

Purging Device	A	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	A	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	E	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	E	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	E	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specfy)
Tubing-Sampling	E	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	35.08 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	54.10 (ft)	Pump Placement	51 (ft)

6.08 (STD) PH

7644 uS/cm Specific Conductivity

Sample Temp. 27.23 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	250mL	ICE	Anion	N
P	250mL	HNO_3	Field Blank #3	N

Sample Appearance: Clear Odor: None Color: Clear Turbidity: 22.9

Weather Conditions: Partly Cloudy South wind 5mph 100°

Other: Purge water is milkly yellow becoming clear after 2 gallons

WELL VOLUME CALCULATION

$V=(D-D_w)$ (A) (7.48 $galtft^3$) where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes Y No _____

If No, Explain _____

Procedure: ELS Ground Water SOP 5-7D

Date: 7/27/22

Sampler: ET/CP

Employer: LCRA

LCRA
ENERGY • WATER • COMMUNITY SERVICES

Field Information Form

Sample Date: 7/28/22 (3)

Sample Time: 1126

Sample ID: CBL3021T

PURGING INFORMATION

220728	1041	V= 12.4	10.2	8
PURGE 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 AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specfy)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	1234 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	27.11 (ft)	Pump Placement	25 (ft)

6.21 (STD) PH 5983 uS/cm Specific Conductivity Sample Temp. 22.87 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250mL	HNO_3	Metals	N
P	500mL	ICE	Anions	N
P	250mL	HNO_3	FB Metals	N
P	250mL	HNO_3	metal EQ Blank	
P	500mL	ICE	EQ Blank Anions	

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 1.06

Weather Conditions: Partly Cloudy South wind 5mph 95°

Other: Purge water is Clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)$ (A) (7.48 $galt/ft^3$) where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross-sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Groundwater SOP 5.70

Date: 7/28/22

Sampler: ET/CP

Employer: LCRA

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Field Information Form

Sample Date: 7/28/22

Sample Time: 953

Sample ID: CBL306I

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220727	1050	0.4	1.3	1

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	G	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	G	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	E	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	G	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	E	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specfy)
Tubing-Sampling	E	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	12.20 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	14.80 (ft)	Pump Placement	(ft)

6.70 (STD) PH 2202 uS/cm Specific Conductivity Sample Temp. 25.35 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250ml	HNO	Metals	
P	250m	ICE	Anions	

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 11.6

Weather Conditions: Partly Cloudy South wind 5mph 98°

Other: Purge water was to low for pump. used Bailer to ~~just~~ remove water, in well will sample well with Bailer the next day

WELL VOLUME CALCULATION

$V=(D-D_w)$ (A) (7.48 galft^3) where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: EAS Groundwater SOP 5-7P

Date: 7/27/22

Sampler: ET/CP

Employer: LCRA

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Field Information Form

Sample Date: 7/27/22

Sample Time: 1137

Sample ID: CB4308I

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220727	1057	1.7	5.1	5

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) N

Sampling Equipment ..... Dedicated (Y) N

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	X- Sampling Other (Specify)
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specfy)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	24.82 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	35.25 (ft)	Pump Placement	33 (ft)

6.23 (STD) PH

8733 uS/cm Specific Conductivity

Sample Temp. 24.00 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250ml	HNO3	Metals	N
P	250ml	ICE	Anions	N
P	250ml	HNO3	~~EB#3~~ Metals Dup	N
P	250m	ICE	Anions Dup	

Sample Appearance: Clear Odor: None Color: Clear Turbidity: 3.28

Weather Conditions: Partly Cloudy South wind 5mph 98°

Other: Purge Water is Clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)$ (A) (7.48 galft^3) where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Ground Water SOP 5-70

Date: 7/27/22

Sampler: ET/CP

Employer: LCRA

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Field Information Form

Sample Date: 7/28/22

Sample Time: 935

Sample ID: CBL3410T

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220728	0833	V= 12.5	37.4	7

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) I N I Sampling Equipment ..... Dedicated (Y) I N I

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Spectfy)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	24.95 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	40.14 (ft)	Pump Placement	37 (ft)

6.35 (STD) PH 7584 uS/cm Specific Conductivity Sample Temp. 24.20 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250ml	HNO3	Metals	N
P	500ml	ICE	Anions	N

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 1.69

Weather Conditions: Partly Cloudy South wind 5mph 85°

Other: Purge water is clear with no odor

WELL VOLUME CALCULATION

$V=(D-D_w)$ (A) (7.48 galft^3) where

V= volume of standing water in well

D= depth to bottom of well below measuring point

D_w=depth to water below measuring point

A= cross sectional area

2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes X No _____

If No, Explain _____

Procedure: ELS Ground water SOP 5-7D

Date: 7/28/22

Sampler: ET/CP

Employer: LCRA

(3)

LCRA ENERGY • WATER • COMMUNITY SERVICES

Field Information Form

Sample Date: 7/28/22
Sample Time: 1233
Sample ID: CBL3911C

PURGING INFORMATION

PURGE DATE (YY MM DD)	START PURGE (2400 Hr. Clock)	V= WATER VOL IN CASING (Gallons)	3 X WELL VOL. IN (Gallons)	ACTUAL VOLUME PURGED (Gallons)
220725	1143	4.9	14.6	10

PURGING AND SAMPLING EQUIPMENT

Purging Equipment ..... Dedicated (Y) N
Sampling Equipment ..... Dedicated (Y) N

Purging Device	B	A-Submersible Pump	D-Gas Litf Pump	G-Bailer	X- Purging Other (Specify)
Sampling Device	B	B-Perisataltic Pump	E-Venturi Pump	H-Scoop/Shovel	X- Sampling Other (Specify)
		C-Bladder Pump	F-Dipper/Bottle	I-Piston Pump	
Purging Material	F	A-Teflon	C-Polypropylene	E-Polyethylene	X- Purging Other (Specify)
Sampling Material	F	B-Stainless Steel	D-PVC		X- Sampling Other (Specify)
Tubing-Purging	F	A-Teflon	D-Polypropylene	F-Silicon	X- Purging Other (Specify)
Tubing-Sampling	F	B-Tygon	E-Polyethylene	G-Combination teflon/Polypropylene	X- Sampling Other (Specify)

C-Rope X- _____ (Specify)

FIELD MEASUREMENTS

Well Elevation	(ft/msl)	Land Surface Elevation	(ft/msl)
Depth to water From top of well casing =D_w	16.58 (ft)	Depth to water From land surface	(ft)
Groundwater Elevation		Groundwater Elevation	(ft/msl)
Well Depth = D	46.43 (ft)	Pump Placement	43 (ft)

6.16 (STD) PH

5762 uS/cm Specific Conductivity

Sample Temp. 29.6 (°C)

Bottle			Analysis	Field Filt.Y/N
Type	Size	Preservative		
P	250ml	HNO_3	Metals	
P	500ml	ICE	Anions	

Sample Appearance: Clear Odor: none Color: Clear Turbidity: 2.06
Weather Conditions: Partly Cloudy South wind 5mph 98°
Other: Purge water is clear with no oder

WELL VOLUME CALCULATION

$V=(D-D_w)$ (A) (7.48 $galt/ft^3$) where
V= volume of standing water in well
D= depth to bottom of well below measuring point
D_w=depth to water below measuring point
A= cross-sectional area
2" dia. A= 0.0218 4" dia. A = 0.0872

Well Appearance Normal: Yes Y No _____
If No, Explain _____

Procedure: ELS Ground water SOP 5.7.1
Date: 7/28/22
Sampler: ET/CP
Employer: LCRA

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

October 11, 2022

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

RE: Final Analytical Report Q2225751

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 or environmental.lab@lcra.org. We look forward to assisting you again.

Authorized for release by:

Jason Woods
Account Manager
jason.woods@lcra.org

Enclosures:

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

Workorder: Q2225751
Workorder Description: FPP_CL301I_08302022
Client: LCRA
Profile: FPP GWMP CCR
Sampled By: COLT PETRI/ELLE TERRELL

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

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported
Q2225751001	CBL-301I	AQ	SW6010B ICP-AES	08/30/2022 12:10	08/30/2022 14:20	1
Q2225751001	CBL-301I	AQ	TCEQ SOP V1	08/30/2022 12:10	08/30/2022 14:20	3
Q2225751002	Field Blank	AQ	SW6010B ICP-AES	08/30/2022 12:00	08/30/2022 14:20	1
Q2225751003	EQ Blank	AQ	SW6010B ICP-AES	08/30/2022 12:15	08/30/2022 14:20	1

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
(S) - Surrogate Spike
MDL - Method Detection Limit
RPD - Relative Percent Difference

Qualifier Definitions

J - Analyte detected below quantitation limit
R - RPD outside duplicate precision limit
S - Spike recovery outside limit
B- Analyte detected in method blank
N - Not Accredited
M - Analyte Detected Above Maximum Contaminant Level
SL - Spike Recovery Low
SH - Spike Recovery High
H - Analyzed Past Hold Time
CR - Confirmed Result
CH - Result confirmed by historical data

LCRA Environmental Laboratory Services
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Fax (512)730-6021

Workorder Summary

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

Analytical Results

Client ID:	LCRA	**Date Collected:**	08/30/2022 12:10	**Matrix:**	Aqueous
Lab ID:	Q2225751001	**Date Received:**	08/30/2022 14:20	**Sample Type:**	SAMPLE
Sample ID:	CBL-301I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (TCEQ SOP V1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Temperature	27.03	C				1	08/30/2022 12:10	CCP	08/30/2022 12:10	CCP	N
pH	6.14	pH				1	08/30/2022 12:10	CCP	08/30/2022 12:10	CCP	N
Specific Conductance	7666	us/cm				1	08/30/2022 12:10	CCP	08/30/2022 12:10	CCP	N

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.107	mg/L	0.0500	0.0200		1	09/08/2022 16:29	FM	10/06/2022 19:46	FM	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	08/30/2022 12:00	**Matrix:**	Aqueous
Lab ID:	Q2225751002	**Date Received:**	08/30/2022 14:20	**Sample Type:**	SAMPLE
Sample ID:	Field Blank	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	09/08/2022 16:29	FM	10/06/2022 19:58	FM	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	08/30/2022 12:15	**Matrix:**	Aqueous
Lab ID:	Q2225751003	**Date Received:**	08/30/2022 14:20	**Sample Type:**	SAMPLE
Sample ID:	EQ Blank	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	09/08/2022 16:29	FM	10/06/2022 20:02	FM	

Environmental Laboratory Services
The Solution Lab

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Austin, TX 78744
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Quality Control Results

QC Batch: MET/9429
Preparation Method: SW3010A, Metals Prep
Associated Lab IDs: Q2225751001, Q2225751002, Q2225751003
Analysis Method: SW6010B ICP-AES

Method Blank(1799301)

Parameter	Units	Results	MRL	LOD	Qualifier
Boron Total	mg/L	<0.0500	0.05	0.02	

Matrix Spike (1799304); Matrix Spike Duplicate (1799305); Original: Q2225751001

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Boron Total	mg/L	1.0	1.16	105.0	75 - 125	1.17	106.0	0.858	20	

Lab Control Sample (1799302); Lab Control Sample Duplicate (1799303)

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Boron Total	mg/L	1.0	1.06	106.0	80 - 120	1.05	105.0	0.948	20	

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QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
MET/9429 - SW6010B ICP-AES			
Q2225751001	CBL-301I	MEP/12261	SW3010A, Metals Prep
Q2225751002	Field Blank	MEP/12261	SW3010A, Metals Prep
Q2225751003	EQ Blank	MEP/12261	SW3010A, Metals Prep

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LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

Q2225751

LCRA - Environmental Lab
3505 Montopolis Dr
Austin, TX 78744

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

Project:	FPP - CBL 301I	**Client:**	LCRA
Collector:	Elle Tessell/Colt Petri	**Contact:**	Elle Terrell Colt Petri
Event#:	1621295	**Phone:**	

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

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

Lab ID#:

Client PO:

	Sample ID *	Collected: Date*	Collected: Time HH:MM*	Matrix* (AQ = Aqueous, DW = Drinking Water, S = Solid, T = Tissue)	COMPOSITE Y/N	FILTERED Y/N	Containers: 250PHNO3	Requested Analysis *: 6010-AM	Requested Analysis *: Fld_FP
1	CBL-301I	8/30/22	1210	AQ	N	N	1	X	X
2	Field Blank	"	1200	AQ	"	"	1	X	
3	EQ Blank	"	1215	AQ	"	"	1	X	

Transfers	Relinquished By	Date/Time	Received By	Date/Time	Cooler Temp: T#	Obs	CF	Corr
1	Colt Petri	8/30/22 1420	[illegible]	8/30/22 1420	58	5.1	0.0	5.1
2								
3								

Client Special Instructions:

Lab Use Only:

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.

02225751
555976

End of Report

LCRA Environmental Laboratory Services
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October 27, 2022

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

RE: Final Analytical Report Q2232067

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.

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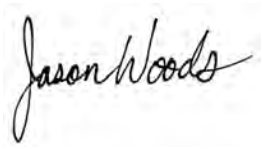
Authorized for release by:



Jason Woods
Account Manager
jason.woods@lcra.org

Enclosures:

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

Workorder: Q2232067
Workorder Description: FPP_CCR
Client: LCRA
Profile: FPP GWMP CCR
Sampled By: ELLE TERRELL

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

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported
Q2232067001	CBL-301I	AQ	SW6010B ICP-AES	10/25/2022 11:06	10/25/2022 13:02	1
Q2232067001	CBL-301I	AQ	TCEQ SOP V1	10/25/2022 11:06	10/25/2022 13:02	1
Q2232067002	Field Blank	AQ	SW6010B ICP-AES	10/20/2022 11:06	10/25/2022 13:02	1
Q2232067003	Equipment Blank	AQ	SW6010B ICP-AES	10/20/2022 11:06	10/25/2022 13:02	1

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
(S) - Surrogate Spike
MDL - Method Detection Limit
RPD - Relative Percent Difference

Qualifier Definitions

J - Analyte detected below quantitation limit
R - RPD outside duplicate precision limit
S - Spike recovery outside limit
B- Analyte detected in method blank
N - Not Accredited
M - Analyte Detected Above Maximum Contaminant Level
SL - Spike Recovery Low
SH - Spike Recovery High
H - Analyzed Past Hold Time
CR - Confirmed Result
CH - Result confirmed by historical data

LCRA Environmental Laboratory Services
3505 Montopolis Drive
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Workorder Summary

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

Analytical Results

Client ID:	LCRA	**Date Collected:**	10/25/2022 11:06	**Matrix:**	Aqueous
Lab ID:	Q2232067001	**Date Received:**	10/25/2022 13:02	**Sample Type:**	SAMPLE
Sample ID:	CBL-301I	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

Field Parameters (TCEQ SOP V1)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
pH	6.21	pH				1	10/25/2022 11:10	ENT	10/25/2022 11:10	ENT	N

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.0645	mg/L	0.0500	0.0200		1	10/26/2022 10:03	FM	10/27/2022 10:40	FM	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	10/20/2022 11:06	**Matrix:**	Aqueous
Lab ID:	Q2232067002	**Date Received:**	10/25/2022 13:02	**Sample Type:**	SAMPLE
Sample ID:	Field Blank	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	10/26/2022 10:03	FM	10/27/2022 10:44	FM	

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Analytical Results

Client ID:	LCRA	**Date Collected:**	10/20/2022 11:06	**Matrix:**	Aqueous
Lab ID:	Q2232067003	**Date Received:**	10/25/2022 13:02	**Sample Type:**	SAMPLE
Sample ID:	Equipment Blank	**Location:**			
Project ID:	FPP GWMP CCR	**Facility:**			
		Sample Point:			

INORGANICS (SW3010A, Metals Prep/SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	<0.0500	mg/L	0.0500	0.0200		1	10/26/2022 10:03	FM	10/27/2022 10:48	FM	

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Quality Control Results

QC Batch: MET/9474
Preparation Method: SW3010A, Metals Prep
Associated Lab IDs: Q2232067001, Q2232067002, Q2232067003
Analysis Method: SW6010B ICP-AES

Lab Control Sample (1821313); Lab Control Sample Duplicate (1821314)

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Boron Total	mg/L	1.0	0.923	92.3	80 - 120	0.982	98.2	6.19	20	

Matrix Spike (1821315); Matrix Spike Duplicate (1821316); Original: Q2232067001

Parameter	Units	Spiked Amount	Spike Result	%Spike Recovery	Control Limits %	Duplicate Result	%Duplicate Recovery	RPD	RPD Limit	Qualifier
Boron Total	mg/L	1.0	0.984	91.9	75 - 125	1.01	94.9	2.61	20	

Method Blank(1821312)

Parameter	Units	Results	MRL	LOD	Qualifier
Boron Total	mg/L	<0.0500	0.05	0.02	

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QC Cross Reference

Lab ID	Sample ID	Prep Batch	Prep Method
MET/9474 - SW6010B ICP-AES			
Q2232067001	CBL-301I	MEP/12367	SW3010A, Metals Prep
Q2232067002	Field Blank	MEP/12367	SW3010A, Metals Prep
Q2232067003	Equipment Blank	MEP/12367	SW3010A, Metals Prep

Environmental Laboratory Services
The Solution Lab

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LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

02232067

LCRA - Environmental Lab
3505 Montopolis Dr
Austin, TX 78744

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

Project:	FPP CCR Groundwater	**Client:**	LCRA
Collector:	Elle Terrell	**Contact:**	Elle Terrell Colt Petri
Event#:	1629843	**Phone:**	

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

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

Lab ID#:

Client PO:

		Sample ID *	Collected: Date*	Collected: Time HH:MM*	Matrix* (AQ = Aqueous, DW = Drinking Water, S = Solid, T = Tissue)	COMPOSITE Y/N	FILTERED Y/N	Containers: 250PHNO3	Requested Analysis *: 6010-AM	Requested Analysis *: Fld_FP
001	1	CBL-301I	102522	1104	AQ	N	N	1	X	X
002	2	Field Blank	"	"	AQ	"	"	1	X	
003	3	Equipment Blank	"	"	AQ	"	"	1	X	

Transfers	Relinquished By	Date/Time	Received By	Date/Time	Cooler Temp: T#	Obs	CF	Corr
1	Elle Terrell	102522 1302		10/25/22 1302	#56	1.4	0.01	1.41
2								
3								

Client Special Instructions:

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.

02232067
562292

End of Report

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

October 31, 2022

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

RE: Final Analytical Report Q2232068

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 or environmental.lab@lcra.org. We look forward to assisting you again.

Authorized for release by:

Jason Woods
Account Manager
jason.woods@lcra.org

Enclosures:

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

Workorder: Q2232068
Workorder Description: FPP_SUB_10252022
Client: LCRA
Profile: FPP FGD Sample
Sampled By: ELLE TERRELL

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

Sample Summary

Lab ID	Sample ID	Matrix	Method	Date Collected	Date Received	Analytes Reported
Q2232068001	CBL-301I	AQ	SW6010B ICP-AES	10/25/2022 11:06	10/25/2022 13:02	1

Report Definitions

MRL - Minimum Reporting Limit
LOD - Limit of Detection
ML - Maximum Limit - Client Specified
MCL - Maximum Contaminant Level
LOQ - Limit of Quantitation - Client Specified
DF - Dilution Factor
(S) - Surrogate Spike
MDL - Method Detection Limit
RPD - Relative Percent Difference

Qualifier Definitions

J - Analyte detected below quantitation limit
R - RPD outside duplicate precision limit
S - Spike recovery outside limit
B- Analyte detected in method blank
N - Not Accredited
M - Analyte Detected Above Maximum Contaminant Level
SL - Spike Recovery Low
SH - Spike Recovery High
H - Analyzed Past Hold Time
CR - Confirmed Result
CH - Result confirmed by historical data

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Austin, TX 78744
Phone (512)730-6022
Fax (512)730-6021

Workorder Summary

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

Analytical Results

Client ID:	LCRA	**Date Collected:**	10/25/2022 11:06	**Matrix:**	Aqueous
Lab ID:	Q2232068001	**Date Received:**	10/25/2022 13:02	**Sample Type:**	SAMPLE
Sample ID:	CBL-301I	**Location:**			
Project ID:	FPP FGD Sample	**Facility:**			
		Sample Point:			

INORGANICS (SW6010B ICP-AES)

Parameter	Results	Units	MRL	LOD	ML	DF	Prepared	By	Analyzed	By	Qualifier
Boron Total	0.0769	mg/L	0.0300	0.0100		1	10/27/2022 11:13	SUB	10/27/2022 11:13	SUB	

Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
3505 Montopolis Drive
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DHL ANALYTICAL

October 27, 2022

Ariana Dean
LCRA Env. Services Lab
3505 Montopolis EL101
Austin, Texas 78744
TEL: (512) 730-5694
FAX

Order No.: 2210221

RE: Q2232068

Dear Ariana Dean:

DHL Analytical, Inc. received 1 sample(s) on 10/26/2022 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont
General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-22-28

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

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Environmental Laboratory Services
The Solution Lab

LCRA Environmental Laboratory Services
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LCRA Chain of Custody 2210221

Document: 45444352

Results Requested By:

Report To	Subcontract To
LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744 Phone (512)730-6022 Fax (512)730-6021 Email environmental.lab@lcra.org	John Dupont DHL Analytical 2300 Double Creek Drive Round Rock, TX 78664 Phone (512)388-8222 Fax (512)388-8229

Item	Lab ID	Collect Date/Time		Matrix	Preserved Containers: N	SW3010A. Metals Prep	SW6010B ICP-AES	[redacted]	LAB USE ONLY
1	Q2232068001	10/25/2022 11:06		Aqueous	1	X	X		01

Report	Electronic Data Deliverables	Comments
☐ Standard (Results Only) ☐ Standard with Batch QC ☐ CLP ☐ Other _____	☐ Stage 2A ☐ Stage 2B ☐ Stage 3 ☐ Other _____	THE SUBCONTRACTOR NOTED ON THIS COC IS THE ONLY LAB AUTHORIZED TO ANALYZE THE SUBMITTED SAMPLES. ANY DEVIATION FROM THIS PROTOCOL REQUIRES WRITTEN AUTHORIZATION FROM ELS MANAGEMENT. 17.5°C thermo #78 custody seal not present

Preservative
N = None

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	10/25/22	LSO	10/25/22
2				
3	LSO	10/26/22 0925	[signature]	10/26/22 0925
4				
5				

* RUSH - ASAP - Boron Only

Tuesday, October 25, 2022 3:15:17 PM
Page 1 of 2

Prepared by HORIZON

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LCRA Chain of Custody

Document: 45444352

Chain of Custody - Required Limits

Document: 45444352

	Method	Analyte	LOD	RL	MCL	LOQ Check Standard Required?
	SW6010B ICP-AES	Boron Total	.02 mg/L	.05 mg/L		No

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Fax (512)730-6021

LSO

LSO
1-800-800-8984
www.lso.com

Airbill No. Z100A6U4

SHIP TO:
JOHN DUPONT
DHL ANALYTICAL
2300 DOUBLE CREEK DR.
ROUND ROCK, TX
78664
5123888222

From:
ELS SAMPLE RECEIVING
ENVIRONMENTAL LAB SERVICES
3505 MONTOPOLIS, EL-101
AUSTIN, TX 78744
5123566022

B AUS **LSO PRIORITY NEXT DAY**
10:30 IN MOST CITIES
LATER IN REMOTE CITIES

PRINT DATE: 10/25/2022 REF 3:
QUICKCODE: WEIGHT: 1.0000LBS
REF 1: SUB REF 2:

old on above line and place shipping label in pouch on package. Please be sure the barcodes and addresses can be read and scanned.

hipping Instructions

1. Fold this page along the horizontal line above.
2. Place this Airbill in the shipping label pouch on the package you are shipping. Please be sure the barcodes and addresses can be read and scanned.
3. To locate a drop box near you, click on **Find Drop Box** from the home page main menu.
4. To schedule a pickup, click on **Request Pickup**

VARNING: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your Lone tar Overnight account number.

IMIT OF LIABILITY: We are not responsible for claims in excess of $100 for any reason unless you: 1) declare a greater value (not to exceed $25,000); 2) pay an additional fee; 3) and document your actual loss n a timely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional limitations of liability are contained in our current Service Guide. If ou ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO DELIVERY SIGNATURE WILL BE OBTAINED FOR 8:30 AM DELIVERIES OR RESIDENTIAL DELIVERIES.

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Phone (512)730-6022
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DHL Analytical, Inc.

Sample Receipt Checklist

Client Name **LCRA Env. Services Lab** Date Received: **10/26/2022**

Work Order Number **2210221** Received by: **KAO**

Checklist completed by: _____ 10/26/2022 Reviewed by (DL) 10/26/2022
Signature | Date | Initials | Date

Carrier name: LoneStar

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

Cooler # 1
Temp °C 17.5
Seal Intact NP

Any No response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____

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Environmental Laboratory Services
The Solution Lab

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

DHL Analytical, Inc. **Date:** *27-Oct-22*

CLIENT: LCRA Env. Services Lab
Project: Q2232068
Lab Order: 2210221

CASE NARRATIVE

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

Method SW6020B - Metals Analysis

LOG IN

The sample was received and log-in performed on 10/26/22. A total of 1 sample was received. The sample arrived in good condition and was properly packaged. All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

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DHL Analytical, Inc.

Date: *27-Oct-22*

CLIENT: LCRA Env. Services Lab
Project: Q2232068
Lab Order: 2210221

Work Order Sample Summary

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
2210221-01	Q2232068001		10/25/22 11:06 AM	10/26/2022

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DHL Analytical, Inc.

27-Oct-22

Lab Order: 2210221
Client: LCRA Env. Services Lab
Project: Q2232068

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2210221-01A	Q2232068001	10/25/22 11:06 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	10/26/22 07:21 AM	107520

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DHL Analytical, Inc.

27-Oct-22

Lab Order: 2210221
Client: LCRA Env. Services Lab
Project: Q2232068

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2210221-01A	Q2232068001	Aqueous	SW6020B	Trace Metals: ICP-MS - Water	107520	1	10/27/22 11:13 AM	ICP-MS5_221027A

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Environmental Laboratory Services
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DHL Analytical, Inc. **Date:** *27-Oct-22*

CLIENT:	LCRA Env. Services Lab	**Client Sample ID:**	Q2232068001
Project:	Q2232068	**Lab ID:**	2210221-01
Project No:		**Collection Date:**	10/25/22 11:06 AM
Lab Order:	2210221	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TRACE METALS: ICP-MS - WATER		**SW6020B**					Analyst: **SP**
Boron	0.0769	0.0100	0.0300		mg/L	1	10/27/22 11:13 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	C	Sample Result or QC discussed in the Case Narrative
	DF	Dilution Factor	E	TPH pattern not Gas or Diesel Range Pattern
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	RL	Reporting Limit
	S	Spike Recovery outside control limits	N	Parameter not NELAP certified

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DHL Analytical, Inc. **Date:** *27-Oct-22*

CLIENT: LCRA Env. Services Lab
Work Order: 2210221
Project: Q2232068

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_221027A

The QC data in batch 107520 applies to the following samples: 2210221-01A

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sample ID: MB-107520 Batch ID: 107520 TestNo: SW6020B Units: µg/L SampType: MBLK Run ID: ICP-MS5_221027A Analysis Date: 10/27/2022 10:54:00 A Prep Date: 10/26/2022										
Boron	<10.0	30.0								
Sample ID: LCS-107520 Batch ID: 107520 TestNo: SW6020B Units: µg/L SampType: LCS Run ID: ICP-MS5_221027A Analysis Date: 10/27/2022 10:58:00 A Prep Date: 10/26/2022										
Boron	191	30.0	200.0	0	95.5	80	120			
Sample ID: LCSD-107520 Batch ID: 107520 TestNo: SW6020B Units: µg/L SampType: LCSD Run ID: ICP-MS5_221027A Analysis Date: 10/27/2022 11:00:00 A Prep Date: 10/26/2022										
Boron	195	30.0	200.0	0	97.5	80	120	2.04	15	
Sample ID: 2210189-01A SD Batch ID: 107520 TestNo: SW6020B Units: µg/L SampType: SD Run ID: ICP-MS5_221027A Analysis Date: 10/27/2022 11:08:00 A Prep Date: 10/26/2022										
Boron	183	150	0	156.6				15.7	20	
Sample ID: 2210189-01A PDS Batch ID: 107520 TestNo: SW6020B Units: µg/L SampType: PDS Run ID: ICP-MS5_221027A Analysis Date: 10/27/2022 11:33:00 A Prep Date: 10/26/2022										
Boron	355	30.0	200.0	156.6	99.2	75	125			
Sample ID: 2210189-01A MS Batch ID: 107520 TestNo: SW6020B Units: µg/L SampType: MS Run ID: ICP-MS5_221027A Analysis Date: 10/27/2022 11:36:00 A Prep Date: 10/26/2022										
Boron	364	30.0	200.0	156.6	104	75	125			
Sample ID: 2210189-01A MSD Batch ID: 107520 TestNo: SW6020B Units: µg/L SampType: MSD Run ID: ICP-MS5_221027A Analysis Date: 10/27/2022 11:38:00 A Prep Date: 10/26/2022										
Boron	368	30.0	200.0	156.6	106	75	125	0.927	15	

Qualifiers:

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

Page 1 of 2

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3505 Montopolis Drive
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Phone (512)730-6022
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CLIENT: LCRA Env. Services Lab
Work Order: 2210221
Project: Q2232068

ANALYTICAL QC SUMMARY REPORT

RunID: ICP-MS5_221027A

Sample ID: ICV-221027	Batch ID: R123684	TestNo: SW6020B	Units: µg/L
SampType: ICV	Run ID: ICP-MS5_221027A	Analysis Date: 10/27/2022 10:36:00 A	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	100	30.0	100.0	0	100	90	110			

Sample ID: LCVL-221027	Batch ID: R123684	TestNo: SW6020B	Units: µg/L
SampType: LCVL	Run ID: ICP-MS5_221027A	Analysis Date: 10/27/2022 10:47:00 A	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	21.1	30.0	20.00	0	106	80	120			

Sample ID: CCV1-221027	Batch ID: R123684	TestNo: SW6020B	Units: µg/L
SampType: CCV	Run ID: ICP-MS5_221027A	Analysis Date: 10/27/2022 11:45:00 A	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Boron	204	30.0	200.0	0	102	90	110			

Qualifiers:

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

Page 2 of 2

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Environmental Laboratory Services
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LCRA Environmental Laboratory Services
3505 Montopolis Drive
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LCRA Environmental Laboratory Services

Request for Analysis Chain-of-Custody Record

Q2232068

LCRA - Environmental Lab
3505 Montopolis Dr
Austin, TX 78744

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

Project:	FPP - Metals SUB	Client:	LCRA
Collector:	Elle Terrell	Contact:	
Event#:		Phone:	

Report to: LCRA - FAYETTE POWER PLANT, 6549 POWER PLANT RD, MAIL STOP FPP, La Grange, TX 78945

Invoice to: LCRA - FAYETTE POWER PLANT, 6549 POWER PLANT RD, MAIL STOP FPP, La Grange, TX 78945

Lab ID#:

Client PO:

		Collected		Matrix* AQ = Aqueous DW = Drinking Water S = Solid T = Tissue	COMPOSITE Y/N	FILTERED Y/N	Containers	Requested Analysis *
	Sample ID *	Date*	Time HH:MM*				250PHNO3	6010-AM
001 1	CBL-3011	102522	1104	AQ	N	N	1	X

Sub

Transfers	Relinquished By	Date/Time	Received By	Date/Time	Cooler Temp: T#	Obs	CF	Corr
1	Elle Terrell	102522 1302		10/25/22 1302	1258	1.4	0.01	1.41
2								
3								

Client Special Instructions:

Lab Use Only:

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.

02232068
562293

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LCRA Chain of Custody

Document: 45444352

Results Requested By:

Report To	Subcontract To
LCRA Environmental Laboratory Services 3505 Montopolis Drive Austin, TX 78744 Phone (512)730-6022 Fax (512)730-6021 Email: environmental.lab@lcra.org	John Dupont DHL Analytical 2300 Double Creek Drive Round Rock, TX 78664 Phone (512)388-8222 Fax (512)388-8229

Item	Lab ID	Collect Date/Time		Matrix	Preserved Containers: Z	Requested Analysis: SW3010A Metals Prep	Requested Analysis: SW6010B ICP-AES	Requested Analysis: [redacted]	LAB USE ONLY
1	Q2232068001	10/25/2022 11:06		Aqueous	1	X	X		

Report	Electronic Data Deliverables	Comments
☐ Standard (Results Only) ☐ Standard with Batch QC ☐ CLP ☐ Other _____	☐ Stage 2A ☐ Stage 2B ☐ Stage 3 ☐ Other _____	THE SUBCONTRACTOR NOTED ON THIS COC IS THE ONLY LAB AUTHORIZED TO ANALYZE THE SUBMITTED SAMPLES. ANY DEVIATION FROM THIS PROTOCOL REQUIRES WRITTEN AUTHORIZATION FROM ELS MANAGEMENT

Preservative

N = None

Transfers	Released By	Date/Time	Received By	Date/Time
1		10/25/22		
2				
3				
4				
5				

* RUSH - ASAP - Boron Only

HORIZON

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Fax (512)730-6021

LCRA Chain of Custody

Document: 45444352

Chain of Custody - Required Limits

Document: 45444352

	Method	Analyte	LOD	RL	MCL	LOQ Check Standard Required?
	SW6010B ICP-AES	Boron Total	.02 mg/L	.05 mg/L		No

HORIZON

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End of Report