



January 9, 2024

Patrick Lennberg  
Division of Reclamation, Mining and Safety  
Environmental Protection Specialist  
1313 Sherman Street, Room 215  
Denver, Colorado 80203

Via Email

Re: CEMEX Lyons Mine Permit M-1977-208  
Technical Revision No. 12, Revised Groundwater Monitoring Plan  
Fourth Quarter 2023 Monitoring Data

Dear Patrick Lennberg:

This letter transmits the surface water and groundwater data associated with the sampling of the cement kiln dust disposal area (C-Pit). This report includes data from the C-Pit ponded water and related groundwater monitoring for the fourth quarter of 2023, covering the reporting period from October 1, 2023, to December 31, 2023. Table 1 presents data for the last four quarters.

Groundwater samples were collected on November 2, 2023, from the CEM-001 and CEM-004 groundwater monitoring wells and from the C-Pit ponded water. The inspection of groundwater monitoring well CEM-005 on November 2, 2023, indicated that there was not enough water volume to collect a representative sample.

The samples collected from C-Pit ponded water and the groundwater monitoring wells were analyzed for pH, chloride, sulfate, total dissolved solids, selenium, and thallium. The reported pH data are based on the pH analyses performed at the time of sample collection in the field (Table 1). The measured pH at groundwater monitoring well CEM-004 and analytical results for chloride, sulfate, total dissolved solids (TDS), selenium and thallium from the November 2, 2023, groundwater sample were within the target levels prescribed by TR-12, as shown in Table 1.

In addition, a Stiff Diagram of the groundwater cation/anion data from CEM-004 compared to the average and 90<sup>th</sup> percentile of the cation/anion concentrations from the last four quarterly samples of C-Pit data in Figure 1 below for reference. As shown in Figure 1 and consistent with past reports, the signature for CEM-004 continues to be significantly different from that of C-Pit.

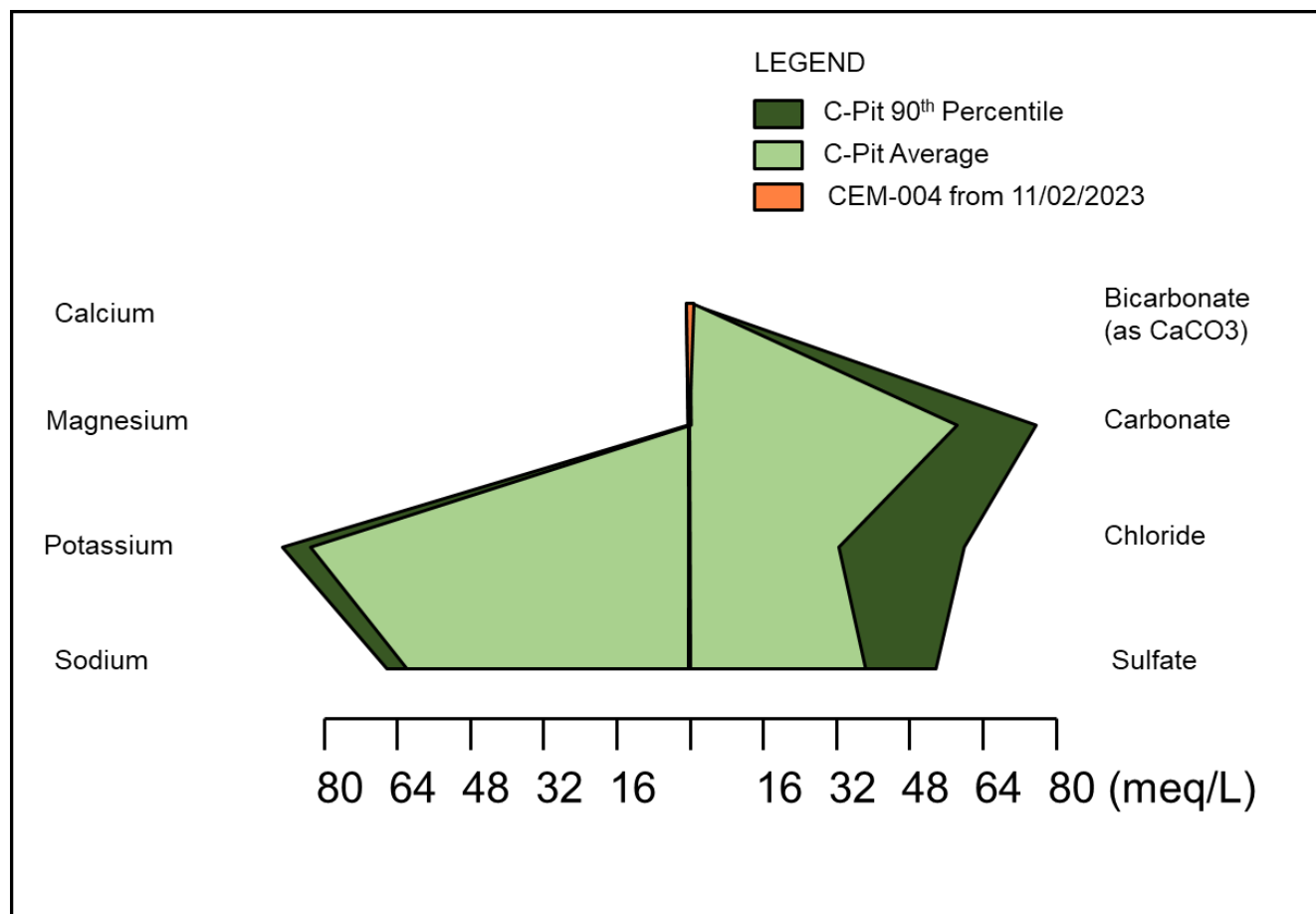


Figure 1: Fourth quarter 2023 cation/anion data for CEM-004 compared to C-Pit

Please contact me at 352-442-5375 or by email at [gregm.bridge@cemex.com](mailto:gregm.bridge@cemex.com) for any questions or concerns regarding this submittal.

Sincerely,

Greg M. Bridge  
Environmental Manager

Encs. Y23Q4C-Pit Monitoring Report and associated Stiff Plot (Fig.1), and Summary of Analytical Results (Table 1), Field Notes, and Time Trend Plots (Figs. A, B, C)

Parameter	Units	C-Pit				CEM-001				CEM-004				CEM-005				CEM-004, CEM-005 Triggers (TR-12)
		2023 Q1	2023 Q2	2023 Q3	2023 Q4	2023 Q1	2023 Q2	2023 Q3	2023 Q4	2023 Q1	2023 Q2	2023 Q3	2024 Q3	2023 Q1	2023 Q2	2023 Q3	2023 Q4	
		2/21/2023	5/2/2023	8/29/2023	11/2/2023	2/21/2023	5/2/2023	8/29/2023	11/2/2023	2/21/2023	5/2/2023	8/29/2023	11/2/2023	a See dates below	a See dates below	a See dates below	a See dates below	
		value	value	value	value	value	value	value	value	value	value	value	value	value	value	value	value	
pH (On-site)	su	12.31	10.47	10.65	10.89	8.01	7.46	7.96	7.88	7.26	7.45	7.77	7.19	insufficient water to sample	insufficient water to sample	insufficient water to sample	insufficient water to sample	6.5-8.5
Chloride	mg/L	1820	2270	214	244	1640	1650	1510	1530	257	79.9	2.9	3.2					1,053
Sulfate	mg/L	1930	2460	241	2650	<13	19.9	38.3	41.9	715	268	7.4	9.8					2,641
Total Dissolved Solids	mg/L	9290	10900	8850	11200	4330	4890	3360	4760	1580	662	96	95					501-10,000 or 1.25 times background
Dissolved Selenium	mg/L	0.454	0.518	0.530	0.513	<0.0008	<0.0008	<0.0004	<0.0004	0.0023	0.0012	<0.0004	0.00044					0.05
Dissolved Thallium	mg/L	0.0015	0.0014	<0.0025	0.0022	<0.0004	<0.0004	<0.0002	<0.0002	<0.001	<0.0004	<0.0002	<0.0002					0.002

Notes and Qualifiers:

H

U

UJ

X

NA

value

Sample analyzed beyond recommended hold time

Detection limit is estimated

Estimated low

Data may not be representative due to nonstandard field sampling protocol

Not analyzed.

Exceeds trigger

a CEM 005 Y23 Q1 Well Sounding: 2/21/2023
a CEM 005 Y23 Q2 Well Sounding: 5/2/2023
a CEM 005 Y23 Q3 Well Sounding: 8/29/2023
a CEM 005 Y23 Q3 Well Sounding: 11/2/2023

## CEMEX Lyons Quarterly Groundwater Monitoring

## Field Data Sheet

Date:


11/1/23

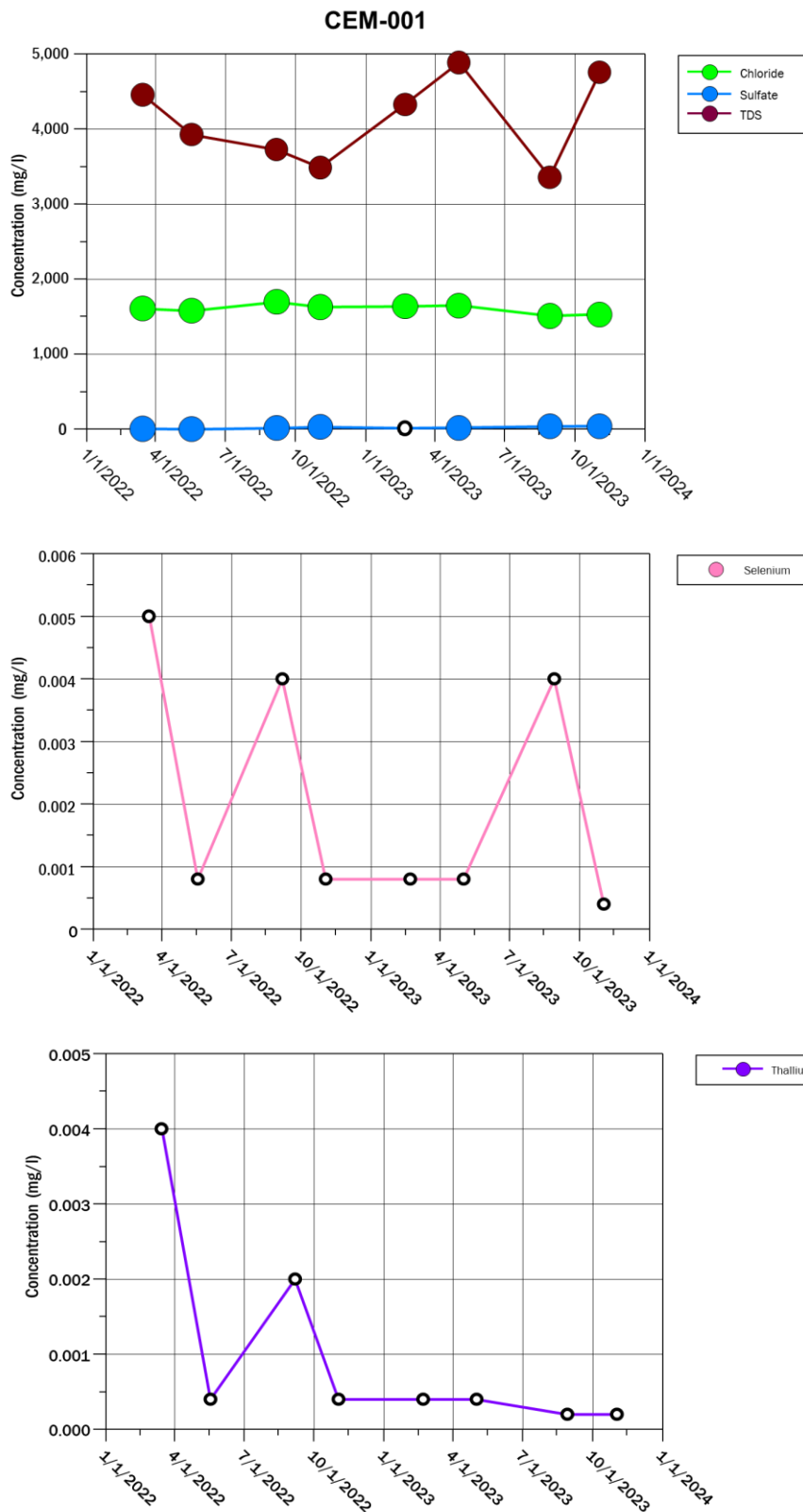
Project Number:

159440

Personnel:

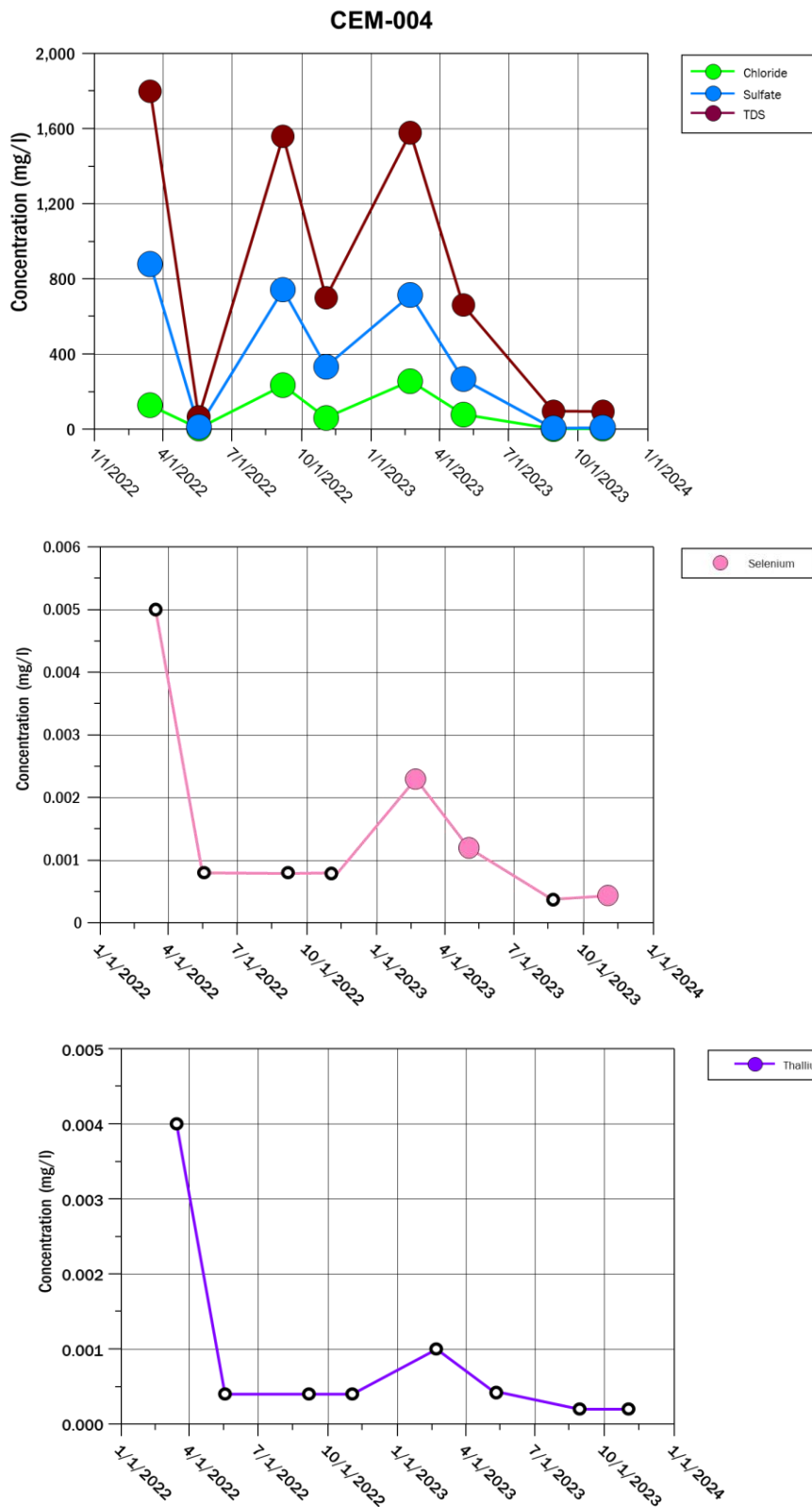
Steffan Becher &amp; Devon Gibson

Location	Date	Time	pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	Total Depth (fbtoc)	Depth to Water (ft)	Notes
CEM-001	11/02/23	10:50	7.82	12.7	6450	1.64	143 (3.5' from top of casing to ground)		~30 min recovery time
	11/2/23	11:18	7.88	14.0	6686	1.36			
CEM-004	11/2/23	12:03					23.5	7.5	WL battery died mid purge, only rec. static
	11/2/23	12:18	7.72	13.8	314.1	4.01		—	
	11/2/23	12:22	7.19	13.9	137.5	2.87			
CEM-005	11/1/23	10:37					400 (2.62' from top of casing to ground)	396.88	399.5' - 2.62'
	11/1/23	10:53	7.28	16.9	11001	1.51		397.17	399.79' - 2.62'
	11/1/23	11:27	7.32	16.9	10963	0.93		397.74	400.36' - 2.62'
	11/2/23	9:42						397.64	0.55 gal purged dry 400.26 not enough to purge
A - Pit	11/2/23	10:10	8.15	11.4	1762	6.26	N/A	—	
C - Pit	11/2/23	10:55	<del>10.89</del> 10.89	<del>10.89</del> 7.3	16610	7.67	N/A	—	



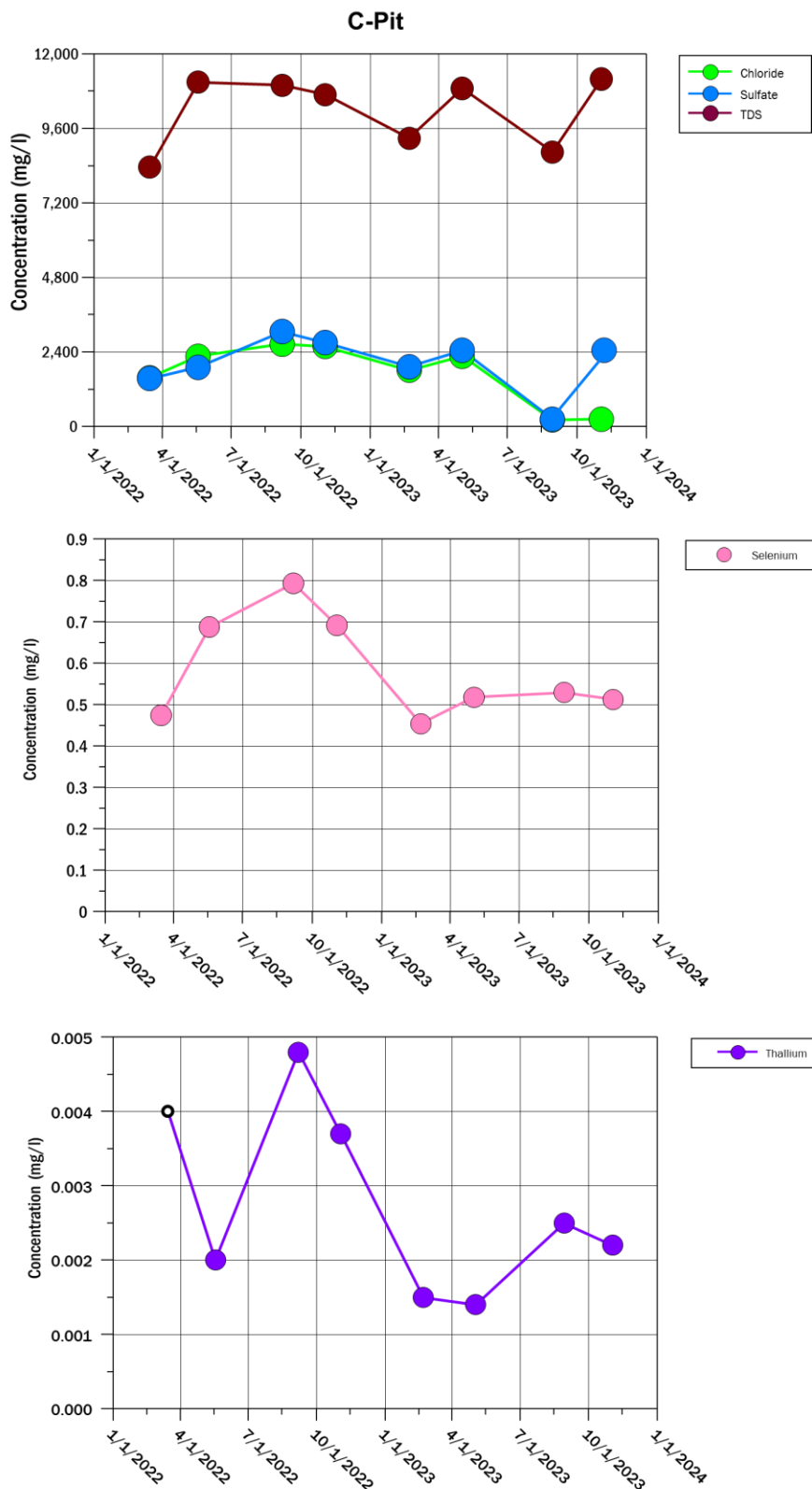
Note: Concentrations reported below the detection limit are plotted as open symbols

**Figure A** Time trend plots for CEM-001



Note: Concentrations reported below the detection limit are plotted as open symbols

**Figure B** Time trend plots for CEM-004



Note: Concentrations reported below the detection limit are plotted as open symbols

**Figure C** Time trend plots for C-Pit