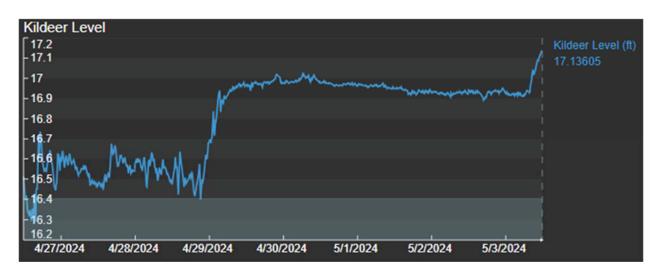
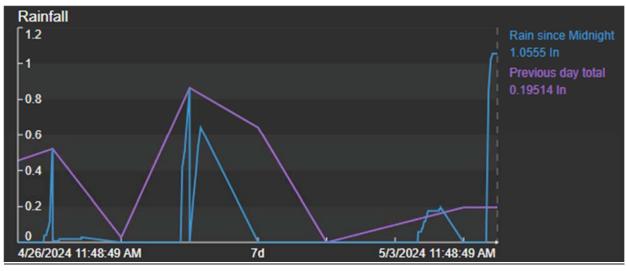
Weekly Report Required by Interim Measures Letter dated 8/4/2023

LSB Chemical Company, NPDES Permit Number: AR0000752, AFIN: 70-00040 Weekly Report Date: 3 May 2023, Updated portions are underlined.

Discharges and Implementation of Emergency Action Plan

Over the last week, the facility received 3.3 inches of rain. Lake Kildeer is currently at 17.14 feet and rising. We have been discharging up to 2.0 MGD through Outfall 010 in anticipation of incoming rainfall and to maintain levels in Lake Kildeer. Current weather forecast indicates 1.59 inches of rain over the next 10 days. LSB may have to open Outfall 001. LSB is attempting to keep the levels of Kildeer below 17.00 feet. In the event of additional rain, LSB will manage the discharge from Kildeer as necessary to ensure water does not overtop the emergency spillway in accordance with the August 4, 2023 Interim Measures letter.





Conduct Daily Sampling of Lake Lee, Lake Killdeer, and Pond 004

LSB commenced this required sampling on August 5, 2023.

Provide Copies of Sampling of Lake Lee, Lake Killdeer, and Pond 004 Since January 1, 2023

Please see the LSB Interim Measures response dated August 9, 2023.

Corrective Action Plan Activities [updates from the previous week are underlined]

During our August 17th conference call we discussed that these proposed activities may trigger a communication to the ADEQ and possible permit changes. We will continue to communicate plans and improvements to obtain ADEQ's guidance on proper permitting.

Minimize Wastewater Contaminant Loading

Water Reuse:

LSB has evaluated its processes to assess locations where water can be reutilized in processes. Currently we are reusing as much wastewater as possible, that would otherwise flow into Pond 004, and are reusing some water from Pond 004 when the opportunity arises.

Minimize Wastewater Inflow

The stormwater diversion project has been completed. LSB met with ADEQ on the 19th to discuss permit applicability. Based on the discussions this action will not require a construction permit. Physical work on the project has been completed and we can now divert a total of 30% of the stormwater flow from 004. This is currently a manual process, to automate additional work will be required. Additionally, we have started an engineering study to divert additional water away from the Ammonia Nitrate facility. This project will focus on paving in and around the Ammonia Nitrate area and is upstream of any waste/process water connections and will not require a construction permit. LSB has utilized seven frac tanks to increase the storage capacity of Ammonia Nitrate water to reduce the overflow into Pond 004 from rain events.

Maximize Treatment Efficiency and Capacity Lake Lee Ammonia Stripper

LSB continues to operate the ammonia stripper with an approximate 20% efficiency.

Treatment of Pond 004

LSB met with Black & Veatch, a wastewater consulting firm, to determine the best treatment possibilities for Pond 004. Based on these initial conversations a biological system seems to be the best path forward. The B&V report was attached in the 13 Oct 2023 report.

Based on review of the Black and Veatch data, LSB is proceeding with biological treatment of 004, but we are still assessing how to address treatment barriers such as predilution, carbon addition, and sludge generation. The design basis is complete. The Plot plan, design basis, P&IDs and Moving Bed Biofilm reactor specifications have been completed. HGA has been selected to oversee the construction and civil engineering for the facility. Hydro-excavation to locate utilities and tie in points is scheduled for next week.

Black and Veatch is developing the processes to operate the plants and develop a written plan to use these package plants in the setup they are proposing. Once the plans are developed, we can propose

permit modification to facilitate this. We are currently developing a list of longer lead time items (i.e. Transformers) to try to find alternative sources of procurement to prevent unforeseen delays. It was expected the transformer would be a potential long lead time element, with the design bases completed. The transformer has been purchased and is being stored offsite until needed. Ancillary equipment for these units is undergoing inspection and repair as needed.

Additionally, we are evaluating possibilities of reuse of the process wastewater as an input into a product.

Increased Efficiency in Lake Killdeer Biological Activity

Based upon discussion with supplier of nitrification/denitrification bacteria, LSB will begin dosing Lake Killdeer with calcium carbonate or magnesium carbonate to increase the available of carbon and alkalinity in Lake Killdeer. Increasing available carbon should promote additional biological activity to reduce the amount of ammonia in Lake Killdeer and the effluent discharge. LSB has also ordered one ton of lime and will begin dosing Lake Lee with the lime in efforts to increase alkalinity in Lake Lee which flows into Lake Kildeer. Before any dosing begins a construction permit will be submitted.

Baffles in Lake Killdeer

LSB selected a vendor to install baffles in Lake Killdeer. As discussed in our August 17th conference call, this should promote longer residence time and further increase biological activity to reduce the amount of ammonia in Lake Killdeer and the effluent discharge. Baffles have arrived onsite. Construction drawings and design basis have been submitted to apply for the construction permit. The permit application was submitted on the 24th of January. The installation is expected to be completed in the first quarter of 2024 or as soon as approval is received from the ADEQ. ADEQ submitted the public notice on the 28th of February. The 10 day comment period is closed and LSB has submitted proof of publication and payment.

Water Quality Sampling Results

Water quality sampling required by the Interim Measures letter is included in the attached 2023 spreadsheet.

Water Column Profile Measurements

LSB has contracted with Alliance Technology Group (formerly GBMc) to complete the profile and sampling of Pond 004, Lake Lee, and Lake Killdeer. The field work was completed on September 28th.

KT French Drain

KT French Drain is located southwest of the KT plant on the west edge of the facility. Water is collected in a wet well then pumped back into the facility, much like a municipality utilized lift stations. During the previous inspection the pump was not operating and the wet well was overflowing. LSB has implemented daily inspections to ensure that the pump remains operational.

As requested, LSB collected samples from KT Wier. Samples collected on December 8th were collected based on the December 7, 2023 conversation with ADEQ and before we received the official request thus all requested in-situ parameters were not collected. Data is presented below:

Date	Temp	рН	D.O.	Cond.	Ammonia	Nitrate	Nitrite	Total – N	Nitrate +
					mg/l	mg/l	mg/l	mg/l	Nitrite
12-8-2023	NA	4.35	NA	79,150	6,600	10,351	0.43	16,951.4	10,351.4
12-12-	16	4.40	5.63	79,250	6,500	10,633	0.41	16,833.4	10,633.4
2023									
12-14-	18	4.37	5.16	77,440	6,350	10,669	0.46	17,019.46	10,669.46
2023									
12-19-	16	4.35	6.16	78630	12080	11,477	ND	23,557	11,477
2023									
12-21-	18	4.35	5.43	77,750	9200	11,108	ND	20,308	11,108
2023									

Other Actions

In this call LSB was informed we need to obtain a wastewater operator's license as quickly as possible. Charles McDowell passed the advanced industrial wastewater certification on March 26th thru the 28th. LSB currently has three certified operators. Second, ADEQ advised that LSB should coordinate with other Joint Pipeline members regarding discharges and volumes. We have initiated this communication.

LSB has contracted Alliance Technology to conduct a bathometric survey of 004. The results of the study indicate that Pond 004 contains approximately 1.5 Million Gallons of water.

	004 Grab	SO ₄ ppm						13																<u>^</u>																56									П
-	004 Grab	N0 _{3N} ,ppm						4741																6041																7275									
	004 Grab	NH _{3-N} , ppm						4720																6440																11000									T
1004	004 Grab	Conductivity						34410																47270																54800									T
Ponc	004 Grab	표						7.64																8.05																8.22									#
+	004 Grab	DO, ppm																																															$\downarrow \downarrow$
-		ME Temp																						3																3									+
	004 Grab	DATE/ TIME						1/10/23																02/08/2																03/09/2									
	Composite EDCC LAB	SC	216	105	121	8 8	8 22	110	9 9	72	109	107	106	122	117	8 8	127	85	2 2	55	8 8	72	103	130	194	101	109	8 3	112	101	93 81	125	121	112	145	125	127	103	100	101	131	98	1001	111	129	113	104	207	155 174 173
	Lee Composite EDCC LAB	Phosphorous, ppm	0.36				0.76				2.31				5.17				2.93			007	1.80				2.08				1.47			130	2			3.04				0.14				0.21			1.64
	Composite EDCC LAB	-	301	289	197	150	28 69	103	88 88	88	2 29 22	22 23	173	197	152	158	143	134	167	158	158	179	121	120	134	211	158	161	222	97	122	98	126	153	135	107	111	156	151	107	148	144	212	160	137	154	106	72	161 146
			341	265	195	128	65	96	8 88	83	3 88 2	104	125 225	232	320	252	225	142	158	149	167	154	129	152	150	192	198	255	213	152	128	105	131	122	105	88 88	105	186	173	139	136	118	238	144	132	123	102	99	155
Lake Lee	Crab Sample El	DO, ppm N																																															
	Lee Composite EDCC LAB	Hd	3.82	3.11	7.60	7.66	7.70	7.34	7.85	8.04	8.41	8.36	7.94	8.95	8.87	8.67	8.10	7.78	7.18	7.30	7.38	7.67	7.50	7.52	7.67	7.72	7.80	7.60	7.99	8.53	7.96	7.36	7.23	7.16	6.95	7.17	6.67	6.55	7.24	7.06	7.08	6.92	7.35	7.62	6.96	7.17	7.30	7.17	7.14
-	LEE Grab Sample	Temp °C																																															
	LEE Grab Sample	Time of Grab																																															
		SO ₄ ppm	107	103	409	3	100	102	100		26	86	26		35	82	80		81	76	76	ŝ	۶	75	76		78	82	82		98	82	82	83	3	88	81	88	5 1	75	78	76	92	2	£.	80	80	82	88
	Composite EDCC LAB	P, ppm	0.10				0.65				0.04				2.28				2.59				0.04				0.02				0.03			000	70:0			1.67				1.79				3.07			1.25
	Composite EDCC LAB	M0₃ N.ppm	0.2	7.1	34	0,1	92	81	84		88	06	88		06	06	87		26	26	100	67.7	717	100	66		102	106	107		119	115	116	110		116	94	131		146	137	125	133	3	135	136	136	134	133
1 1		\vdash	35	62	60	8	84	71	02		09	70	81		88	82	88		77	75	66		/9	86	26		100	110	106		117	135	118	193	2	130	101	131		152	124	130	197		168	135	131	129	129
ike Killdeer (KD)	Composite EDCC LAB	Conductivity	1073	1095	7 7 7	*	1127	1154	1162		1185	1183	1202		1245	1248	1250		1286	1280	1308	0777	1416	1294	1315		1311	1340	1342		1446	1438	1440	1464		1460	1463	1846		1874	1672	1534	1595	0 0	1599	1608	1598	1595	1593
	KD Grab Sam	DO, ppn																																															
	NU Composite EDCC LAB	Hd	69:9	7.10	7 25	17:1	7.10	7.11	7.18		7.25	7.15	7.27		7.49	7.81	7.83		7.78	7.60	7.52	20 11	7.35	7.43	7.46		7.30	7.26	7.39		7.50	7.48	7.47	7 33	200	7.35	7.26	7.33		8.23	7.21	7.36	95 2	9 60	7.38	7.56	7.24	7.22	7.06
	ple	Temp °C																																															
	KD Grab Sample	Time of Grab																																															
		Date	1/1/2023	1/3/2023	1/5/2023	1/7/2023	1/9/2023	1/10/2023	1/12/2023	1/14/2023	1/16/2023	1/18/2023	1/19/2023	1/21/2023	1/23/2023	1/25/2023	1/27/2023	1/29/2023	1/30/2023	2/1/2023	2/3/2023	2/5/2023	2/7/2023	2/8/2023	2/10/2023	2/11/2023	2/13/2023	2/15/2023	2/16/2023	2/18/2023	2/20/2023	2/22/2023	2/24/2023	2/26/2023	2/28/2023	3/1/2023	3/3/2023	3/5/2023	3/7/2023	3/8/2023	3/10/2023	3/12/2023	3/14/2023	3/16/2023	3/17/2023	3/19/2023	3/22/2023	3/23/2023	3/25/2023 3/26/2023 3/27/2023

	004 Grab	SO ₄ ppm					28						20				16															56																	42									
	004 Grab	N0₃ N.ppm					9206						5032				3691															4463																	10832									
	004 Grab	NH _{3-N} , ppm					10060						4400				8240															2080																	10600									
1d 004	004 Grab	Conductivity					70340						39320				57620															34840																	79560									
Por	b 004 Grab	Æ					8.33						8.61				7.68															8.71																	7.42									
	O04 Grab Grab	Temp DO, ppm																																																				H				
	004 Grab Gi	DATE/ TIME Te					04/23						.2/23				18/23															10/23																	17/23									
							04/0						04/1				04/1															05/1																	0/90									
	C Composite EDCC LAB	om SO ₄ ppm	178	123	107	127	115	66	76	112	S 66	154	138	231	182	205	272	198	178	187	179	219	184	174	176	246	191	209	210	122	75	1382	06	171	192	171	175	170	171	221	206	672	511	332	283	275	199	205	192	259	146	190	140	148	157	130	188	197
897	Composite EDCC LAB	Phosphorous, ppm					1.01				0.24					1.28					2.70				200	2.02				1.50	00:1				2.96				0.40	21.7				1.12				0.65				000	0.22				2.65	
	site AB		143	141	103	70	134	148	294	343	190	141	122	81	28	85	98	21	20	199	212	117	95	180	204	150	108	21	68	801.	157	33.1	243	235	156	105	36	65 73	133	158	103	65	49	223	20.25	5 5	. 6	10	0 0	18	15 23	92	42	120	175	121	205	191
Lee	Composite EDCC LAB	NH _{3-N} , ppm	132	136	87	53	141	139	272	330	175	136	78	63	47	72	25 ×	19	18	181	210	109	93	142	169	133	96	6 44	73	8 8	163	332	208	213	138	103	81	25 48	111	142	75	63	99 48	88	14 10	11	4 0	7	2 8	9	3 2	12	27	103	155	115	195	182
Lake Lee	LEE Grab Sample	DO, ppm																																																								
 	CO	핊	7.13	7.16	7.01	7.92	7.10	7.54	6.78	6.94	7.36	7.02	6.58	5.86	6.24	5.56	7.03	6.89	6.37	5.42	6.26	6.95	6.65	7.63	6.82	7.18	7.03	4.68	6.94	8.19	7.58	7.55	7.02	7.19	7.71	7.36	7.35	6.68	6.27	6.78	6.72	3.80	3.32	3.14	4.88	6.67	7.25	7.38	7.25	7.49	7.60	6.35	6.53	6.38	7.52	7.59	7.00	7.18
	Crab Sample	J.																																																								
	LEE Grab Sample	Time of Grab																																																								
KD	site AB	SO ₄ ppm		88	92		83	83	72		72		14	75		81	83	3	25		98	88	8	80	60	70	83	8		35	8	35	88		88	88		8	8	8	87	111		114	121	128		135	139		141	9	74.	145	139		139	
KD	00	P, ppm					90:0				0.00					1.42					1.41				1 46	000				1.24	1.00.1				1.61				92,9	6/-				0.32				1.64				20	101				1.37	
KD KD	Composite Co EDCC LAB	M0₃ v.ppm		\$	136		8	167	166		188		162	146		140	141		137		133	137	135	3	130	60	140	138		139	0	132	161		156	158	007	201	4 5 5	8	153	149		146	146	147		137	135		132	8	071	125	139		132	
QX	_		₩	130	119		122	164	159		169		140	132		131	131	2	124		130	121	440	7	410	71	122	120		123		120	138		142	138		143	440	2	117	135		122	119	120		122	116		114	940	0	111	123		119	
11 -	site			1620	1622		1588	1867	1806		2042		1814	1675		1598	1615		1580		1565	1582	1570	0.00	1811	2	1633	1628		1613	2	1588	1841		1805	1812	2007	6781	7100	00/1	1758	1760		1740	1734	1721		1680	1674		1655	4004	+20	1590	1695		1685	
9	KD Grab Sample	DO, ppm																																																								
	Composite EDCC LAB	చ		7.12	96.98		7.16	7.04	6.87		7.04		7.00	06.90		7.18	8 75		6.82		7.03	7.02	8 03	0.00	6 87	0.0	6.82	6.85		6.88	2000	6.65	6.81		6.80	98.99		7.03	200	0.97	7.10	6.73		6.18	6:28	6.73		99.9	90.9	000	6.22		#	6.55	6.65		6.52	_
	e e	Temp °C							+				-		+				\parallel		\parallel		1				\parallel							+				+								+			1					\dagger			H	
																																																						\parallel				
	KD Grab Sample	Time of Grab		m								3		3					3		3															,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	3	7 -	-						2									8		m ~		3
		Date	3/28/2023	3/30/2023	3/31/2023	4/2/2023	4/3/2023	4/5/2023	4/7/2023	4/8/2023	4/40/2023	4/11/2023	4/12/2023	4/14/2023	4/15/2023	4/17/2023	4/18/2023	4/20/2023	4/21/2023	4/23/2023	4/24/2023	4/26/2023	4/27/2023	4/29/2023	4/30/2020	5/2/2023	5/3/2023	5/5/2023	5/6/2023	5/8/2023	5/9/2023	5/10/2023	5/12/2023	5/13/2023	5/15/2023	5/16/202.	5/18/2023	5/20/2023	5/21/2023	5/23/2023	5/24/2023	5/26/2023	5/27/2023	5/29/2023	5/31/2023	6/1/2023	6/3/2023	6/5/2023	6/6/2023	6/8/2023	6/9/2023	6/11/2023	6/13/2023	6/14/2023	6/16/2023	6/17/202:	6/19/2023	6/20/2023

Г	ap	ε	1	П	7	1	7	1	1	1	1	T	T	Τ	Τ			7		П	1	T	T	T	T	T	T	T	T	T	Т	Τ	Π	П	T	T	T	Τ	Τ	Π	П	П	7	Т	1	Т	T	Т
	004 Grab	n SO ₄ ppm																						•	2																		24	52	ষ্	8 8	3 8	2 85
	004 Grab	N0 _{3N} ,ppm																						9000	2989																	L	6016	6293	6191	6216	4281	3553
	004 Grab	NH _{3-N} , ppm																						0007	4320																		5840	5280	6200	6200	4260	3660
Pond 004	004 Grab	Conductivity																						0.00	24910																		46930	48920	49230	49870	34560	29930
Pon	004 Grab	H																						00 0	9.02																	H	7.26	7.14	7.07	6.95	9.00	899
	004 Grab	DO, ppm																																								-			4	6.02	+	9.05
	004 Grab	Temp																																	1											27		T
	004 Grab	DATE/ TIME																						and a stand	07/14/23																			11:20am	9:50AM	10:09AM	8-534M	8:39AM
	Lee Composite EDCC LAB		201	322	287	200	199	184	180	143	146	10/	167	149	158	152	172	161	186	195	155	125	/3	75	96	109	OLL.	124	777	110	123	113	121	133	146	125	101	107	121	119	126	122	113	143	147	125	111	: 08
	Lee Composite EDCC LAB	Phosphorous, ppm						1.27						221							3.83							4.11						2.89						1.34					1.22			
	Lee Composite EDCC LAB	Mdq. _{N-6} 0N	153	130	116	26	69	54	136	LR.	194	104	126	8 8	29	116	209	223	130	126	231	196	8	215	118	323	270	229	189	143	129	93	82	06	62 24	7 [97	30.42	24	20	75	51	32	22	17	15	± 6	102
	Lee Composite EDCC LAB	NH _{3-N} , ppm	141	123	101	78	22	49	125	GS.	192	132	901	22	51	102	188	186	134	132	209	157	70	136	281	278	231	222	107	133	120	98	98	98	72	8 8	20 20	9	10	13	64	38	16	6	9	9	, 01	102
Lake Lee	LEE Grab Sample	DO, ppm																																											6.03	6.12	8.08	7.86
	Lee Composite EDCC LAB	표	7.31	98'9	7.17	6.84	7.14	6.72	7.02	1.67	7.82	7.87	7.59	7.09	90'2	6.82	6.96	7.62	7.66	8.21	8.16	7.88	5.74	8.49	8.22	8.29	8.50	8.35	8.03	1.92	8.05	7.49	98'9	7.69	7.38	7.12	1.43	8.27	6.99	7.19	6.92	7.09	8.10	7.44	09.9	6.45	6.81	7.26
	LEE Grab Sample	Temp °C																																											26	25	28	24
	LEE Grab Sample	Time of Grab																																											6:00AM	6:00AM 7:00AM	7:00AM	7:00AM
	KD Composite EDCC LAB	SO ₄ ppm	138		141			143	4.40	142	4.44	141		144		142		140			140	907	- RS		Š		07.7	112	404	\$	108			110	949	OL L	110	2		110		111		111		113	2	128
	KD Composite EDCC LAB	P, ppm						1.32						1.38							5.24						00.0	6.08						2.03						1.96						1.75	2.2	
	KD Composite EDCC LAB	M0 _{3 N} .ppm	131		133			130	403	127	400	133		137		133		132			136		113	00	69		00.7	153	440	143	141			136	101	\$	130	20		129		128		126	125	123	124	120
	KD Composite EDCC LAB		115		115			119	400	777	949	61.1		120		125		116			130	007	70.	927	1/9		,	151	440	14.3	140			125	400	971	450	021		128		114		119	114	105	114	114
Lake Killdeer (KD)	KD Composite EDCC LAB		1688		1705			1690	02.07	7/91	4700	1/20		1730		1724		1720			1780	0027	7871	0000	.7240		0007	1890	0000	1820	1804			1763	7207	1/04	1753	3		1745		1726		1710	1703	1676	1678	1584
Lake h	KD Grab Sample	DO, ppm				1							l																	l							l						1		7.65	8.27	6.13	7.34
	KD Composite EDCC LAB	된	6.60		99.9			69.9	31. 0	6.75	100	60:04	l	6.69		6.77		6.74			6.75		0.04	04.6	7.50		00.0	6.98	30.0	0.80	6.91			06.9	30 0	0.83	8 94	50:0		6.83		6.77		6.79	6.79	6.77	6.84	7.11
	KD Cc Grab Sample	J.																																											28	% 53	82 86	27
	KD Grab Sample G	Time of Grab																											1																8:53AM	9:57AM 8:25AM	8:45AM	8:13AM
			6/21/2023	6/22/2023	6/23/2023	6/24/2023	6/25/2023	6/26/2023	6/27/2023	6/28/2023	6/29/2023	6/30/2023	7/2/2023	7/3/2023	7/4/2023	7/5/2023	7/6/2023	7/7/2023	7/8/2023	7/9/2023	7/10/2023	7/11/2023	1712/2023	7/13/2023	771472023	7/15/2023	7/16/2023	7/17/2023	7/40/2023	7/30/3023	7/21/2023	7/22/2023	7/23/2023	7/24/2023	7/25/2023	1/20/2023	7/20/2023	7/20/2023	7/30/2023	7/31/2023	8/1/2023	8/2/2023	8/3/2023	8/4/2023	8/5/2023	8/6/2023	8/8/2023	8/9/2023