



Gelman Sciences, Inc. d/b/a
Pall Life Sciences
642 South Wagner Road
Ann Arbor, MI 48103
734.436.4025 phone
734.436.4040 fax

July 12, 2018

Daniel Hamel
Michigan Department of Environmental Quality
Environmental Response Division
Jackson District Office Building
301 E. Louis Glick Highway
Jackson, Michigan 49210

Re: **Quarterly Progress Report**
2nd Quarter, 2018
April 1, 2018 to June 30, 2018

Dear Mr. Hamel:

Please find enclosed the Quarterly Progress Report for the period of April 1, 2018 to June 30, 2018.

Should you have any questions regarding this document, please contact me at 386-562-0176.

Sincerely,

A handwritten signature in black ink, appearing to read "L. Gelb", with a long horizontal stroke extending to the right.

Lawrence J. Gelb
Sr. Director Global EHS



2nd Quarter, 2018

(April, May, June)

Table of Contents

Summary of activity during this quarter

Submittals/Responses

Anticipated activities for the next quarter

Quarterly Performance Analysis

Mass Reduction

Summary of Activity

CEB = Central Environmental Building
C3 = C3 aquifer
D2 = D2 aquifer
E = E aquifer
SW = Southwest Property Area
Maple = Maple Road

Treatment Activities

04/03/18-04/04/18 - TW-19 & TW-23 (E) were shut down for maintenance.

04/10/18 - LB-4 (D2), TW-19 & TW-23 (E) were shut down briefly due to a DTE Energy power loss in the area.

04/17/18-04/18/18 - Extraction and treatment were shut down for several hours to install new chemical tanks.

04/24/18 - LB-4 (D2) was shut down briefly for maintenance.

04/24/18 – LB-4 (D2), TW-19 & TW-23 (E) were shut down briefly for maintenance to communication.

05/05/18 – System 2A was shut down briefly for maintenance.

05/05/18-05/06/18 - TW-21 (D2) was shut down to adjust the Pond level.

05/05/18-05/07/18 - Dolph and TW-20 (C3) and TW-18 (E) were shut down to adjust the Pond level while System 1A was shut down for maintenance.

05/06/18 - Flow was low on SW extraction due to a power interruption.

05/24/18 - TW-19 and TW-23 (E) were shut down briefly for maintenance.

05/28/18 - Treatment was shut down briefly for maintenance.

06/02/18 - 06/14/18 - Dolph (C3) was down intermittently due to flow fluctuation.

06/04/18 - System 1A was shut down briefly for maintenance.

06/11/18 - TW-21 (D2) TW-20 (C3), PW-1 (Marshy), SW, TW-18, TW-19, and TW-23 (E), and treatment were shut down briefly for plumbing upgrades in the Red Pumphouse.

Field Activities

New chemical tanks were placed in service

Plumbing upgrades were made in the Red Pumphouse

Submittals/Responses

04/05/18 PLS submitted Discharge Monitoring Report (DMR) to DEQ
PLS submitted Monthly Monitoring Report (NPDES) to DEQ

04/17/18 PLS submitted 1st Quarter 2018 Report to DEQ

05/11/18 PLS submitted Discharge Monitoring Report (DMR) to DEQ;
PLS submitted Monthly Monitoring Report (NPDES) to DEQ

06/12/18 PLS submitted Monthly Monitoring Report (NPDES) to DEQ
PLS submitted Discharge Monitoring Report (DMR) to DEQ;

Anticipated Major Activities for the Next Quarter

- Modification and replacement of the Porter pumphouse (pending Scio Township approval).
- Continue to work with MDEQ regarding process for establishing groundwater sampling frequencies. Update/revise groundwater monitoring plan accordingly.
- Continue with court-ordered confidential negotiations to modify the current Consent Judgment.

Quarterly Performance Analysis

For the months of April, May, June 2018, over 213 pounds of 1,4-dioxane were removed and 63,014,134 gallons of water were extracted from the contaminated aquifers, treated and discharged. The total mass of 1,4-dioxane removed since May 1997 is over 94,196 pounds and the total volume of water discharged since May 1997 is over 8.2 billion gallons.

In general, the performance of the operation was as expected, purging and treating contaminated groundwater to the existing allowable capacities.

Mass Reduction

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

A	B	C	D	E	F	G
Month	Mass Removed from Unit E Only	Mass Removed from Southwest Only	Mass Removed from Marshy Only	Mass Removed from Units C3 and D2 Only	Mass Removed from Unit D0	Total Mass Removed from Units E, D2, C3, D0, Southwest and Marshy
Aug-00	0	0	8	366		374
Sep-00	0	0	9	332		341
Oct-00	0	5	9	583		597
Nov-00	0	3	12	1160		1175
Dec-00	0	0	10	1040		1050
Jan-01	0	0	7	816		823
Feb-01	0	0	7	1056		1063
Mar-01	0	0	11	1379		1390
Apr-01	0	0	9	1140		1149
May-01	0	1	8	990		999
Jun-01	0	2	8	933		943
Jul-01	0	2	10	1121		1133
Aug-01	0	2	13	1018		1033
Sep-01	0	1	9	909		919
Oct-01	0	5	8	896		909
Nov-01	0	4	5	827		836
Dec-01	0	6	4	768		778
Jan-02	0	6	5	753		764
Feb-02	0	4	6	691		701
Mar-02	0	7	7	663		677
Apr-02	0	6	7	682		695
May-02	100	9	7	898		1014
Jun-02	94	9	6	889		998
Jul-02	56	10	7	640		713
Aug-02	53	8	6	745		812
Sep-02	51	8	6	860		925
Oct-02	33	6	4	603		646
Nov-02	57	8	5	880		950
Dec-02	48	9	5	842		904
Jan-03	45	8	6	839		898
Feb-03	37	6	6	767		816
Mar-03	44	8	7	763		822
Apr-03	39	8	3	716		766
May-03	36	13	5	725		779
Jun-03	34	15	5	683		737
Jul-03	29	15	5	678		727
Aug-03	31	15	6	676		728
Sep-03	27	16	5	644		692
Oct-03	34	17	5	701		757
Nov-03	26	12	5	663		706
Dec-03	29	14	6	635		684
Jan-04	28	15	6	667		716
Feb-04	8	11	5	485		509
Mar-04	23	14	7	573		617
Apr-04	27	15	6	537		585
May-04	16	10	5	439		470
Jun-04	21	11	5	499		536
Jul-04	36	12	5	506		559

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

A	B	C	D	E	F	G
Month	Mass Removed from Unit E Only	Mass Removed from Southwest Only	Mass Removed from Marshy Only	Mass Removed from Units C3 and D2 Only	Mass Removed from Unit D0	Total Mass Removed from Units E, D2, C3, D0, Southwest and Marshy
Aug-04	54	12	5	480		551
Sep-04	34	9	5	382		430
Oct-04	30	10	5	358		403
Nov-04	30	9	5	395		439
Dec-04	33	11	5	442		491
Jan-05	29	11	4	404		448
Feb-05	26	9	4	390		429
Mar-05	27	9	4	409		450
Apr-05	33	4	3	396		436
May-05	27	8	2	364		401
Jun-05	31	9	3	361		404
Jul-05	31	8	1	279		319
Aug-05	12	6	2	275		295
Sep-05	13	8	2	327		350
Oct-05	16	6	3	297		322
Nov-05	13	7	4	291		315
Dec-05	12	8	4	325		349
Jan-06	115	7	3	308		433
Feb-06	144	7	3	290		444
Mar-06	148	8	3	331		490
Apr-06	125	7	3	291		426
May-06	137	9	3	402		551
Jun-06	119	5	2	329		456
Jul-06	107	8	3	310		427
Aug-06	104	8	2	307		421
Sep-06	97	9	3	300		409
Oct-06	93	9	3	327		432
Nov-06	80	7	2	268		357
Dec-06	68	6	2	238		314
Jan-07	91	8	2	305		406
Feb-07	84	8	2	284		378
Mar-07	91	8	3	306		408
Apr-07	84	8	2	280		374
May-07	82	8	2	288		380
Jun-07	81	8	2	279		370
Jul-07	66	8	2	256		332
Aug-07	73	8	2	270		353
Sep-07	77	8	2	247		334
Oct-07	73	8	2	244		327
Nov-07	68	8	2	263		341
Dec-07	69	8	2	260		339
Jan-08	65	7	2	237		311
Feb-08	53	6	2	203		264
Mar-08	56	7	2	220		285
Apr-08	54	7	2	200		263
May-08	55	7	2	206		270
Jun-08	52	6	2	195		256
Jul-08	39	1	2	139		181

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

A	B	C	D	E	F	G
Month	Mass Removed from Unit E Only	Mass Removed from Southwest Only	Mass Removed from Marshy Only	Mass Removed from Units C3 and D2 Only	Mass Removed from Unit D0	Total Mass Removed from Units E, D2, C3, D0, Southwest and Marshy
Aug-08	50	7	2	198		256
Sep-08	43	5	2	177		227
Oct-08	45	5	2	187		239
Nov-08	45	7	2	197		251
Dec-08	45	5	2	187		239
Jan-09	39	8	2	124		173
Feb-09	34	8	2	122		164
Mar-09	35	8	2	122		166
Apr-09	32	6	1	119		158
May-09	45	7	2	201		254
Jun-09	39	5	1	157		202
Jul-09	38	5	1	152		196
Aug-09	39	7	2	202		250
Sep-09	36	6	2	223		267
Oct-09	36	8	2	206		251
Nov-09	32	7	1	167		208
Dec-09	32	8	1	171		212
Jan-10	34	8	1	175		219
Feb-10	30	7	1	161		198
Mar-10	33	7	1	173		214
Apr-10	33	7	1	175		216
May-10	33	7	1	176		217
Jun-10	29	6	1	130		165
Jul-10	20	7	1	171		200
Aug-10	23	7	1	188		220
Sep-10	21	6	1	148		177
Oct-10	24	7	2	185		218
Nov-10	18	6	2	151		176
Dec-10	26	6	2	164		198
Jan-11	25	6	2	163		195
Feb-11	25	7	2	165		198
Mar-11	27	8	2	174		209
Apr-11	22	6	1	143		171
May-11	20	5	1	138		164
Jun-11	17	5	1	104		127
Jul-11	15	4	1	92		112
Aug-11	14	2	1	80		97
Sep-11	16	6	1	98		121
Oct-11	17	6	1	113		137
Nov-11	33	6	1	105		145
Dec-11	45	6	1	98		150
Jan-12	46	6	1	103		156
Feb-12	40	5	1	89		135
Mar-12	43	5	1	94	0.017	142
Apr-12	47	6	1	105	0.000	159
May-12	47	6	1	100	0.000	154
Jun-12	42	6	0.3	99	0.029	148
Jul-12	30	6	0.1	102	0.000	138

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

A	B	C	D	E	F	G
Month	Mass Removed from Unit E Only	Mass Removed from Southwest Only	Mass Removed from Marshy Only	Mass Removed from Units C3 and D2 Only	Mass Removed from Unit D0	Total Mass Removed from Units E, D2, C3, D0, Southwest and Marshy
Aug-12	29	6	0.0	75	0.000	109
Sep-12	32	5	0.1	62	0.029	100
Oct-12	27	5	0.0	57	0.000	88
Nov-12	33	4	0.0	62	0.000	99
Dec-12	31	3	0.0	52	0.020	86
Jan-13	46	3	0.0	54	0.000	103
Feb-13	46	3	0.0	47	0.000	95
Mar-13	53	3	0.0	53	0.029	109
Apr-13	46	5	0.1	61	0.000	113
May-13	57	8	1.0	60	0.000	126
Jun-13	43	7	0.7	52	0.029	102
Jul-13	57	9	0.9	61	0.000	128
Aug-13	48	7	0.8	63	0.000	120
Sep-13	46	7	0.6	60	0.023	113
Oct-13	46	7	0.8	61	0.000	115
Nov-13	52	7	0.7	57	0.000	117
Dec-13	57	8	1.0	72	0.026	138
Jan-14	47	8	0.7	66	0.000	122
Feb-14	37	7	0.4	48	0.000	92
Mar-14	42	6	0.5	58	0.025	107
Apr-14	44	6	0.4	58	0.000	108
May-14	46	6	0.4	61	0.000	113
Jun-14	38	5	0.3	34	0.019	77
Jul-14	41	4	0.3	32	0.000	78
Aug-14	42	4	0.4	33	0.000	79
Sep-14	39	3	0.3	33	0.020	76
Oct-14	42	3	0.3	33	0.000	79
Nov-14	46	3	0.3	33	0.000	82
Dec-14	50	3	0.3	37	0.000	90
Jan-15	45	2	0.3	32	0.016	80
Feb-15	41	2	0.3	28	0.000	72
Mar-15	46	2	0.5	29	0.027	77
Apr-15	49	2	0.4	29	0.000	80
May-15	47	3	0.3	29	0.000	79
Jun-15	42	5	0.3	33	0.019	81
Jul-15	38	6	0.4	30	0.000	74
Aug-15	44	7	0.7	34	0.000	86
Sep-15	42	7	1.2	33	0.013	82
Oct-15	46	6	1.0	34	0.000	88
Nov-15	46	6	1.3	35	0.000	88
Dec-15	44	5	1.1	35	0.018	85
Jan-16	46	4	1.1	33	0.000	84
Feb-16	43	4	0.8	27	0.000	74
Mar-16	41	6	0.6	33	0.016	80
Apr-16	41	7	0.1	33	0.000	82
May-16	45	7	0.0	36	0.000	87
Jun-16	44	7	0.1	34	0.018	85
Jul-16	44	7	0.4	36	0.000	88

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

A	B	C	D	E	F	G
Month	Mass Removed from Unit E Only	Mass Removed from Southwest Only	Mass Removed from Marshy Only	Mass Removed from Units C3 and D2 Only	Mass Removed from Unit D0	Total Mass Removed from Units E, D2, C3, D0, Southwest and Marshy
Aug-16	42	7	0.1	34	0.000	83
Sep-16	38	5	0.9	32	0.021	77
Oct-16	40	5	0.9	31	0.000	77
Nov-16	41	6	0.1	33	0.000	79
Dec-16	43	6	0.2	33	0.017	82
Jan-17	44	6	0.8	36	0.000	87
Feb-17	36	5	0.6	29	0.000	71
Mar-17	39	5	0.6	33	0.017	78
Apr-17	34	5	0.3	31	0.000	70
May-17	32	5	0.5	27	0.000	64
Jun-17	31	4	0.3	26	0.018	61
Jul-17	32	5	0.1	36	0.000	73
Aug-17	29	6	0.0	37	0.000	71
Sep-17	31	5	0.0	27	0.033	63
Oct-17	36	4	0.2	28	0.000	67
Nov-17	34	5	0.7	28	0.000	68
Dec-17	32	5	0.8	28	0.020	65
Jan-18	36	6	0.9	32	0.000	75
Feb-18	28	4	0.5	26	0.000	59
Mar-18	37	4	0.6	34	0.019	75
Apr-18	33	4	0.7	31	0.000	68
May-18	36	4	0.5	35	0.000	75
Jun-18	33	4	0.4	32	0.016	70
Total to date	8633	1378	549	61175	0.554	71736

MASS REDUCTION DETAIL BY AQUIFER

April 1 - April 30, 2018

	Extraction Well	Month To Date Gallons Extracted	Month To Date Average Daily Flow Rate GPM	Month To Date Average Daily Pounds Removed	Month To Date Pounds Removed	Month To Date Average Concentration ppb
C3	TW-1	501	0	0.0	0.0	76
	TW-2 (Dolph)	930,491	22	0.0	0.8	100
	TW-10	102	0	0.0	0.0	340
	TW-14	1,625	0	0.0	0.0	44
	TW-20	1,240,891	29	0.3	9.3	899
	Sub-Totals	2,173,610	50	0	10	
Marshy	PW-1	100,088	2	0.022	0.7	782
	Sub-Totals	100,088	2	0.02	0.7	
E	TW-17	75,639	2	0.0	0.1	310
	TW-18	6,599,126	153	0.5	14.7	266
	TW-19	1,240,664	29	0.3	7.6	733
	TW-23	2,768,068	64	0.4	10.6	458
	Sub-Totals	10,683,497	247	1	33	
Southwest	Active Wells	573,220	13	0.1	3.5	722
	Sub-Totals	573,220	13	0	3	
D2	LB-4	4,117,590	95	0.5	16.1	466
	TW-9	48,082	1	0.0	0.3	710
	TW-21	2,467,976	57	0.1	4.3	216
	Sub-Totals	6,633,648	154	1	21	
Overall Totals		20,164,063	467	2.3	67.9	

*SW Active = TW-8, TW-22

MASS REDUCTION DETAIL BY AQUIFER

May 1 - May 31, 2018

	Extraction Well	Month To Date Gallons Extracted	Month To Date Average Daily Flow Rate GPM	Month To Date Average Daily Pounds Removed	Month To Date Pounds Removed	Month To Date Average Concentration ppb
C3	TW-2 (Dolph)	869,644	19	0.0	0.9	124
	TW-10	485	0	0.0	0.0	297
	TW-20	1,277,903	29	0.3	10.5	981
	Sub-Totals	2,148,032	48	0	11	
Marshy	PW-1	107,795	2	0.0	0.5	586
	Sub-Totals	107,795	2	0	1	
E	TW-18	6,905,456	155	0.5	16.7	290
	TW-19	1,368,378	31	0.2	6.4	583
	TW-23	3,067,899	69	0.4	12.6	490
	Sub-Totals	11,341,733	254	1	36	
Southwest	Active Wells	611,633	14	0.1	3.8	748
	Sub-Totals	611,633	14	0	4	
D2	LB-4	4,460,795	100	0.6	18.5	496
	TW-21	2,582,077	58	0.1	4.6	218
	Sub-Totals	7,042,872	158	1	23	
Overall Totals		21,252,065	476	2.4	74.5	

*SW Active = TW-8, TW-22

MASS REDUCTION DETAIL BY AQUIFIER

June 1 - June 30, 2018

	Extraction Well	Month To Date Gallons Extracted	Month To Date Average Daily Flow Rate GPM	Month To Date Average Daily Pounds Removed	Month To Date Pounds Removed	Month To Date Average Concentration ppb
C3						
	TW-2 (Dolph)	814,239	19	0.0	0.8	121
	TW-20	1,278,844	30	0.3	9.7	913
	<i>Sub-Totals</i>	2,093,083	48	0	11	
Marshy						
	PW-1	103,484	2	0.0	0.4	497
	<i>Sub-Totals</i>	103,484	2	0	0	
E						
	TW-18	6,767,961	157	0.5	14.9	264
	TW-19	1,351,209	31	0.2	5.4	477
	TW-23	2,971,977	69	0.4	13.0	526
	<i>Sub-Totals</i>	11,091,147	257	1	33	
Southwest						
	Active Wells	611,280	14	0.1	3.6	699
	<i>Sub-Totals</i>	611,280	14	0	4	
D0						
	A2 Cleaning Supply	24,000			0.0162	81
	<i>Sub-Totals</i>	24,000			0.0162	
D2						
	LB-4	4,324,966	100	0.6	17.4	481
	TW-21	2,498,617	58	0.1	4.3	211
	<i>Sub-Totals</i>	6,823,583	158	1	22	
Overall Totals		20,722,577	480	2.3	69.6	

*SW Active = TW-8, TW-22