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July 18, 2017

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

**RECEIVED**  
JUL 21 2017  
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JACKSON DISTRICT OFFICE

Re: **Quarterly Progress Report**  
**2nd Quarter, 2017**  
April 1, 2017 to June 30, 2017

Dear Mr. Hamel:

Please find enclosed the Quarterly Progress Report for the period of April 1, 2017 to June 30, 2017.

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

Sincerely,

A handwritten signature in cursive script that reads "Lawrence J. Gelb".

Lawrence J. Gelb  
Sr. Director Global EHS



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JUL 21 2017  
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JACKSON DISTRICT OFFICE

**2nd Quarter, 2017**

**(April, May, June)**

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## 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***

04/01/17 - 04/06/17 - Dolph (C3) was shut down for repairs.

04/07/17 - 04/10/17 - TW-18 & TW-19 (E) were shut down due to a DTE Energy power outage in the area.

04/08/17-04/09/17 - System 2A was shut down for maintenance.

04/08/17-04/10/17 - TW-21 (D2) was shut down due to radio frequency traffic.

04/09/17, 04/10/17, 04/20/17, 04/25/17 - TW-9 (D2) was running to maintain the Pond level.

04/09/17 – 04/26/17 - TW10 & TW-14 (C3) were turned on periodically to maintain the Pond level.

04/10/17 – 04/26/17 – TW-17 (E) was turned on periodically to maintain the Pond level.

04/17/17 - TW-1 (C3) was turned on for sampling.

04/18/17 - 04/30/17 - PW-1 (Marshy) was shut down due to low flow.

04/18/17 - TW-18 (E) was shut down briefly for maintenance.

04/18/17 - TW-21 (D2) was shut down due to an emergency DTE Energy shutdown of power in the area.

04/25-27/17 - TW-19 (E) was shut down for system upgrades at Evergreen Pump House.

04/20/17 - TW-21 & LB-4 (D2) and TW-18 & TW-19 (E) were shut down for communications upgrades.

04/26/17 - LB-4 (D2) was shut down for upgrade of the communication system.

04/26/17 - TW-23 (E) was turned on, replacing TW-16, as requested by the property owner.

05/01/17 - PW-1 (Marshy) was shut down due to low flow.

05/01/17-05/02/17 - TW-21 (D2) and (TW-18) were shut down briefly to adjust the Pond level during maintenance on System 2A.

05/08/17-05/09/17 - TW-14 (C3) was turned on and TW-20 (C3) was shut down for the rehabilitation of TW-20.

05/08/17-05/09/17 and 05/11/17-05/19/17 - TW-17 (E) was turned on during the rehabilitation of LB-4 (D2) and TW-19 & TW-23 (E) were shut down for pit box maintenance.

05/11/17-05/19/17 - LB-4 (D2) was shut down for rehabilitation.

05/20/17 - TW-20 (C3) was shut down briefly to adjust the Pond level during maintenance on System 2A.

05/23/17 - System 2A was shut down briefly for maintenance.

05/26/17-05/31/17 - PW-1 (Marshy) was shut down for maintenance.

06/01/17 - 06/09/17, 06/12/17 and 06/17/17 - PW-1 (Marshy) was shut down intermittently for low flow.

06/06/17 - TW-10 (C3) was turned on briefly to maintain the Pond level.

06/06/17 - 06/07/17, 06/20/17-06/21/17, and 06/28/17 - 06/29/17 - TW-17 (E) was turned on to maintain the Pond level.

06/12/17 - System 2A was shut down for maintenance.

06/15/18 - 06/16/17 - Treatment was shut down briefly for cleaning pipelines.

06/16/17 - Southwest extraction and TW-18 (E) were shut down for maintenance in preparation for the Pond cleaning.

06/16/17 - TW-21 (D2) and discharge were shut down for maintenance.

06/19/17 - 06/21/17 - Dolph & TW-20 (C3), Southwest, and PW-1 (Marshy) were shut down for the Pond cleaning.

06/19/17 - 06/22/17 - TW-21 (D2) was shut down for the Pond cleaning.

06/19/17 - 06/23/17 - TW-18, TW-19 (E), TW-20 (C3), treatment, and discharge were shut down for the Pond cleaning.

06/19/17 - 06/24/17 - LB-4 (D2) was shut down for the Pond cleaning and programming upgrades.

06/20/17 - 06/21/17 - TW-14 (C3) was turned on briefly for power washing the Pond liner.

06/23/17 - LB-1 (D2) was turned on briefly to test programming upgrades and TW-21 (D2) was shut down to adjust the Pond level.

06/23/17 - 06/24/17 - TW-10 & TW-14 (C3) were turned on briefly to maintain the Pond level and TW-17 (E) was turned on briefly for power washing the Pond liner.

06/26/17 - TW-19 & TW-23(E) were shut down for maintenance.

06/27/17 - 06/29/17 - LB-4 (D2) was shut down intermittently for programming upgrades.

06/28/17 - TW-18, TW-19 & TW-23 (E) were shut down due to a DTE power outage in the area.

06/28/17 - 06/29/17 - TW-10 & TW-14 (C3), were turned on briefly to maintain the Pond level and treatment and discharge were shut down briefly due to a DTE Energy power outage in the area.

06/29/17 - TW-21 (D2) was shut down due to a DTE Energy power outage in the area.

### ***Field Activities***

TW-23 (E) was installed to replace TW-16 (E) and began operation on 4/26/17.

Communication upgrades began in April and continued through June.

LB-4 (D2) and TW-20 (C3) were rehabilitated.

Repairs were made to Dolph (C3).

The Pond was cleaned.

### **Submittals/Responses**

04/11/17 PLS submitted Discharge Monitoring Report (DMR) to DEQ;  
PLS submitted Monthly Monitoring Report (NPDES) to DEQ

04/17/17 PLS submitted 1st Quarter 2017 Report to DEQ

05/12/17 PLS submitted Discharge Monitoring Report (DMR) to DEQ;  
PLS submitted Monthly Monitoring Report (NPDES) to DEQ

06/08/17 PLS submitted Monthly Monitoring Report (NPDES) to DEQ

06/09/17 PLS submitted Discharge Monitoring Report (DMR) to DEQ;

### *Anticipated Major Activities for the Next Quarter*

- Finalize the modification of the Consent Judgment
- Modify/raise the shed on the Porter Lot to prevent water damage and for safety reasons
- Modify the processor at the Evergreen Pump House
- Improve the communications system between the Evergreen Pump House, Porter lot and the main treatment building

### *Quarterly Performance Analysis*

For the months of April, May, June 2017, over 195 pounds of 1,4-dioxane were removed and 61,881,415 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 93,300 pounds and the total volume of water discharged since May 1997 is over 7.9 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 DETAIL BY AQUIFER**

April 1 - April 30, 2017

	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
<b>C3</b>						
	TW-1	360	0	0.00	0.00	75
	TW-2 (Dolph)	542,592	13	0.01	0.41	90
	TW-10	169,838	4	0.01	0.45	308
	TW-14	166,023	4	0.00	0.06	36
	TW-20	1,291,269	30	0.30	8.9	829
	<b>Sub-Totals</b>	<b>2,170,082</b>	<b>50</b>	<b>0.3</b>	<b>10</b>	
<b>Marshy</b>						
	PW-1	35,871	1	0.009	0.3	893
	<b>Sub-Totals</b>	<b>35,871</b>	<b>1</b>	<b>0.01</b>	<b>0.3</b>	
<b>E</b>						
	TW-17	203,838	5	0.01	0.3	319
	TW-18	6,925,057	160	0.54	16.1	278
	TW-19	3,511,740	81	0.6	17.9	610
	TW-23	394,376	9	0.1	2.4	720
	<b>Sub-Totals</b>	<b>11,035,011</b>	<b>255</b>	<b>1</b>	<b>34</b>	
<b>Southwest</b>						
	Active Wells	853,857	20	0.2	4.8	678
	<b>Sub-Totals</b>	<b>853,857</b>	<b>20</b>	<b>0.2</b>	<b>5</b>	
<b>D2</b>						
	LB-4	4,283,021	99	0.6	16.9	474
	TW-9	73,228	2	0.0	0.4	602
	TW-21	2,849,724	66	0.1	3.8	167
	<b>Sub-Totals</b>	<b>7,205,973</b>	<b>167</b>	<b>0.7</b>	<b>21</b>	
<b>Overall Totals</b>		<b>21,300,794</b>	<b>493</b>	<b>2.4</b>	<b>70.4</b>	

\*SW Active = TW-8, TW-22

**MASS REDUCTION DETAIL BY AQUIFER**

May 1 - May 31, 2017

	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
<b>C3</b>						
	TW-2 (Dolph)	735,673	16	0.0	0.6	96
	TW-14	70,200	2	0.0	0.0	44
	TW-20	1,441,292	32	0.3	10.0	834
	<i>Sub-Totals</i>	2,247,165	50	0	11	
<b>Marshy</b>						
	PW-1	83,523	2	0.0	0.5	680
	<i>Sub-Totals</i>	83,523	2	0	0	
<b>E</b>						
	TW-17	1,155,777	26	0.1	1.8	190
	TW-18	7,044,441	158	0.5	15.9	270
	TW-19	1,319,317	30	0.2	6.7	610
	TW-23	3,195,512	72	0.2	7.2	270
	<i>Sub-Totals</i>	12,715,047	285	1	24	
<b>Southwest</b>						
	Active Wells	865,079	19	0.2	5.0	690
	<i>Sub-Totals</i>	865,079	19	0	5	
<b>D2</b>						
	LB-4	3,102,193	69	0.4	12.2	470
	TW-21	2,831,704	63	0.1	4.1	180
	<i>Sub-Totals</i>	5,933,897	133	1	16	
<b>Overall Totals</b>		21,844,711	489	2.1	56.8	

\*SW Active = TW-8, TW-22

**MASS REDUCTION DETAIL BY AQUIFER**

June 1 - June 30, 2017

	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
<b>C3</b>						
	TW-2 (Dolph)	694,967	16	0.0	0.6	100
	TW-10	117,559	3	0.0	0.3	320
	TW-14	149,830	3	0.0	0.1	44
	TW-20	1,264,429	29	0.3	9.4	893
	<i>Sub-Totals</i>	2,226,785	52	0	10	
<b>Marshy</b>						
	PW-1	54,508	1	0.0	0.3	689
	<i>Sub-Totals</i>	54,508	1	0	0	
<b>E</b>						
	TW-17	159,134	4	0.0	0.3	190
	TW-18	5,907,992	137	0.4	13.3	270
	TW-19	1,159,378	27	0.2	6.3	853
	TW-23	3,130,692	72	0.4	11.0	426
	<i>Sub-Totals</i>	10,357,196	240	1	31	
<b>Southwest</b>						
	Active Wells	731,949	17	0.1	4.0	647
	<i>Sub-Totals</i>	731,949	17	0	4	
<b>D0</b>						
	Ann Arbor Cleaning	28,000			0.0178	76
	<i>Sub-Totals</i>	28,000			0.0178	
<b>D2</b>						
	LB-1	2,133	0.0	0.0	0.0	550
	LB-4	3,024,880	70	0.4	11.9	470
	TW-21	2,224,349	51	0.1	3.4	189
	<i>Sub-Totals</i>	5,251,362	122	1	15	
<b>Overall Totals</b>						
		18,621,800	431	2.0	60.8	

\*SW Active = TW-8, TW-22

**MASS REDUCTION SUMMARY**  
**Mass Removed Per Month (lb)**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
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)

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
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)**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
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)**

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
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
<b>Total to date</b>	<b>8237</b>	<b>1325</b>	<b>544</b>	<b>60801</b>	<b>0</b>	<b>70908</b>