



Life Sciences 600 South Wagner Road Ann Arbor, MI 48103-9019 USA

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DEQ • RD JACKSON DISTRICT OFFICE

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July 17, 2012

Ms. Sybil Kolon
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, 2012

April 1, 2012 to June 30, 2012

Dear Ms. Kolon:

Please find enclosed the Quarterly Progress Report for the period of April 1, 2012 to June 30, 2012.

Should you have any questions regarding this document, please contact me at 734-913-6130.

Sincerely,

Farsad Fotouhi

Vice President

Corporate Environmental Engineering

Stars al Fotonhi

cc: Ms. Celeste R. Gill, MDAG Michael Caldwell, Esq.

Filtration, Separation, Solution, su



GRV(70)PV

2nd Quarter, 2012

(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

- 04/02/12 Treatment was shut down briefly for maintenance and TW-10 (C3) and TW-18 (E) were shut down to adjust the Pond level.
- 04/15/12 Treatment was shut down briefly for maintenance.
- 04/20/12 TW-2 (C3) was shut down briefly for maintenance.
- 04/02/12 -04/04/12 TW-9 (D2) was shut down to adjust the Pond level.
- 04/29/12 Evergreen extraction (D2) was shut down briefly due to a DTE power failure in the area.
- 04/29/12 05/01/12 TW-19 (E) was shut down for maintenance.
- 05/03/12-05/04/12 TW-5, TW-9, W-21 (D2), SW extraction, and System 2-A were shut down due to DTE power failure caused by storms in the area.
- 05/04/12 TW10 & TW-20 (C3), TW-11 & TW-18 (E) were shut down due to DTE power failure caused by storms in the area.
- 05/06/12 TW-9 (D2), TW10 & TW-20 (C3) were shut down to adjust the Pond level and System-1A was shut down for maintenance.
- 05/11/12 System-1A was shut down for maintenance.
- 05/15/12 Evergreen extraction (D2) and TW-19 (E) were shut down briefly due to a DTE power failure in the area.
- 05/31/12 06/01/12 Evergreen extraction (D2) and TW-19 (E) were shut down briefly for maintenance.
- 06/05/12-06/06/12 Evergreen extraction (D2) and TW-19 (E) were shut down for maintenance.
- 06/07/12-06/31/12 PW-1 was shut down periodically due to low water levels in the Marshy area.
- 06/15/12 HW-S (D2), TW-1, TW-3, TW-14 (C3) and TW-17 (E) were turned on briefly for sampling.

Field Activities

Additional wells were plugged in the Expanded PZ (639 Barber, 465 Evergreen).

Submittals/Responses

04/17/12	PLS submitted 1st Quarter 2012 Report to DEQ
05/14/12	PLS submitted Monthly Monitoring Report (NPDES) to DEQ
05/15/12	PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
06/12/12	PLS submitted Monthly Monitoring Report (NPDES) to DEQ PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ

Anticipated Major Activities for the Next Quarter

- Reduce the total purge rates to approximately 500 gpm
- Install a monitoring well in the City Right-of-Way on Saunders Crescent
- Evaluate the frequency of purging from the Little Lake Area
- Relocate the mobile treatment unit from Dexter Road to the main Pall facility

Quarterly Performance Analysis

For the months of April, May, June 2012, over 461 pounds of 1,4-dioxane were removed and 99,086,815 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 87,800 pounds and the total volume of water discharged since May 1997 is over 6.6 billion gallons.

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

Mass Reduction

			SS REDUCTION SU			And the Annual A
Α	В	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 DO	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 7	889 640		998 713
Jul-02	56	10 8	6	745		812
Aug-02	53 51	8	6	860		925
Sep-02	33	6	4	603		646
Oct-02 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	6 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

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			SS REDUCTION SU			
A	В	C	D	r.	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 DO	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
Jun-05 Jul-05	31	8	1	279		319
				275		295
Aug-05	12	6	2			
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 2	305		406
Feb-07	84	8	2	284		378
Mar-07	91	8	3	306		408
Apr-07	84	8	3 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
	69	8	2	260		339
Dec-07	65	7	2	237		311
Jan-08						
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

			SS REDUCTION SU IS Removed Per Mo			
Α	В	C	D	E	F	G
	Mass Removed from Unit E	Mass Removed from Southwest	Mass Removed from	Mass Removed from Units C3	Mass Removed	Total Mass Removed from Units E, D2, C3, D0, Southwest and
Month	Only	Only	Marshy Only	and D2 Only	from Unit DO	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		254 202
Jun-09	39	5	1	157 152		196
Jul-09	38	5 7		202		250
Aug-09	39 36	6	2	202 -		267
Sep-09	36	8	2	206		251
Oct-09 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
Total to date	5694	1014	516	58206	0	65430

MASS REDUCTION DETAIL BY AQUIFIER

April 1 - April 30, 2012

		Extraction Well	Month To Date Gallons Extracled	Month To Date Average Dally Flow Rate GPM	Month To Date Average Daily Pounds Removed	Month To Date Pounds Removed	Mon To D Avera Concent ppl
<u>C3</u>							
		TW-1	-	0	0.0	0.0	112
		TW-2 (Dolph)	1,104,414	26	0.0	0.6	66
1		TW-3	-	0	0.0	0.0	0
l		TW-6	0.000.404	0 66	0.0 0.5	0.0 15.4	46 647
1		TW-10 TW-14	2,862,194	0	0.0	0.0	23
		TW-20	2,122,797	49	0.6	18.0	1019
		MW-22	2,122,131	0.0	0.0	0.0	175
ļ	Sub-Totals	WITT-ZZ	6,089,405	141	1	34	1,0
		***************************************	-,,		<u> </u>		
Marshy	<u>.</u>	DIAL 4	000.000		0.0	4.4	046
	Sub-Totals	PW-1	208,286 208,286	<u>5</u>	0.0	1.4 1	816
	5110-10tais		200,200	3	<u> </u>	<u> </u>	
Ē	1			***			
		TW-11	1,493,924	35	0.1	2.5	200
		TW-12	-	0	0.0	0.0	26
		TW-17	4 000 404	0	0.0	0.0	222
		TW-18 TW-19	4,338,104 4,126,091	100 96	0.5 1.0	13.9 30.2	383 876
<		MW-64	4,120,091	0	0.0	0.0	54
		MIVV-04	9,958,119	231	2	47	04
0.41			* .				
Southw	<u>es i</u>	Active Wells	1,444,351	33	0.2	6.0	501
		MW-10d	-	0.0	0.0	0.0	586
		MW-75	-	0	0.0	0.0	25
		MW-45d	-	0.0	0.0	0.0	249
	Sub-Totals	/////////////////////////////////////	1,444,351	33	0	6	*******
<u>D0</u>							
_		Ann Arbor				0.000	70
	Sub-Totals	Cleaning	-			0.000	76
					· · ·		
<u>D2</u>		LB-1	2,581,373	60	0.5	13.7	634
		LB-3	1,727,899	40	0.3	7.8	542
		HW-S	-	0	0.0	0.0	508
		TW-5	3,700,678	86	0.9	27.5	890
		TW-9	2,347,972	54	0.5	16.5	842
		TW-21	4,423,466	102	0.2	5.5	154
		MW-11D	-	0	0.0	0.0	102
	Sub-Totals		14,781,388	342	2	71	

^{*}SW Active = TW-8, TW-22

MASS REDUCTION DETAIL BY AQUIFIER

May 1 - May 31, 2012

		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	Mor To E Aver Concen
<u>C3</u>							
l		TW-1	•	0	0.0	0.0	11
		TW-2 (Dolph)	1,136,743	25	0.0	0.6	68
		TW-3	-	0	0.0	0.0	0
		TW-6	-	0	0.0	0.0	46
1		TW-10	3,100,019	69	0.5	16.4	63
İ		TW-14	-	0	0.0	0.0	23
i		TW-20	1,683,949	38	0.5	14.1	100
	Sub-Totals	MW-22	5,920,711	0.0 133	0.0	0.0 31	177
	2110-1011113		0,920,711	155	I	31	
Marshy				•		*****	
•		PW-1	194,844	4	0.0	1.2	707
	Sub-Totals		194,844	4	0	1	
Ē					***************************************		
		TW-11	1,455,180	33	0.1	2.5	202
		TW-12	•	0	0.0	0.0	26
		TW-17	-	0	0.0	0.0	222
		TW-18	4,410,895	99	0.4	13.0	352
		TW-19	4,364,171	98	1.0	31.5	865
		MW-64	-	0	0.0	0.0	52
		 	10,230,246	229	2	47	
Southwe	<u>st</u>				-		
		Active Wells	1,425,043	32	0.2	5.9	499
		MW-10d	-	0.0	0.0	0.0	524
		MW-75	-	0	0.0	0.0	25
		MW-45d	40=040	0.0	0.0	0.0	74
	Sub-Totals		1,425,043	32	0	6	
<u>D0</u>							
		Ann Arbor Cleaning				0.000	00
	Sub-Totals	Cleaning	-			0.000	82
D2		LB-1	2,662,431	60	0.4	13.2	592
		LB-3	1,779,985	40	0.4	7.6	514
		HW-S	-	ő	0.0	0.0	508
		TW-5	3,712,512	83	0.8	25.1	812
		TW-9	2,501,632	56	0.6	17.4	832
		TW-21	4,491,106	101	0.2	5.9	161
		MW-11D	-	0	0.0	0.0	109
	Sub-Totals		15,147,666	339	2	69	
		· : .			w.		
Overail'	Fatala	-	32,918,510	737	5.0	1540	

^{*}SW Active = TW-8, TW-22

MASS REDUCTION DETAIL BY AQUIFIER

June 1 - June 30, 2012

		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	Mor To D Aver Concen pp
<u>C3</u>							
		TW-1	16	0	0.0	0.0	11
1		TW-2 (Dolph)	1,090,639	25	0.0	0.6	63
		TW-3	-	0	0.0	0.0	34
ĺ		TW-6		0	0.0	0.0	45
		TW-10	3,249,873	75	0.6	18.3	67
		TW-14	2,585	0	0.0	0.0	28
1		TW-20	1,862,327	43	0.4	12.7	82
		MW-22	-	0.0	0.0	0.0	181
	Sub-Totals		6,205,440	144	1	32	/2017/1011/1
Marsi	ı <u>y</u>						
		PW-1	40,131	1	0.0	0.3	867
	Sub-Totals		40,131	1	0	0	
<u>E</u>							
		TW-11	1,425,235	33	0.1	2.4	204
		TW-12	•	0	0.0	0.0	25
		TW-17	1,989	0	0.0	0.0	312
		TW-18	4,441,950	103	0.4	12.7	34
		TW-19	4,216,494	98	0.9	27.1	770
		MW-64	=	0	0.0	0.0	51
			10,085,668	233	1	42	
Southy	vest						
	_	Active Wells	1,391,456	32	0.2	5.8	498
		MW-10d	-	0.0	0.0	0.0	498
		MW-75	-	0	0.0	0.0	25
		MW-45d	-	0.0	0.0	0.0	2
	Sub-Totals		1,391,456	32	0	6	
<u>D0</u>							<u> </u>
	Sub-Totals	A2 Cleaning	42,000 42,000			0.029 0.029	82
	5110-101013		42,000			0.028	
<u>D2</u>		104	0 500 400	EG	0.3	40.4	001
		LB-1	2,522,493	58	0.4	13.1	621
		LB-3	1,687,691	39	0.2	7.1	506
		HW-S	1,908	0	0.0	0.0	508
		TW-5	3,620,514	84	0.8	24.0	794
		TW-9	2,615,982	61	0.6	18.0	823
		TW-21	4,532,223	105	0.2	5.5	151
	Sub-Totals	MW-11D	14,980,811	0 347	2	0.0 68	112

^{*}SW Active = TW-8, TW-22