

File



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

734.665.0651 phone

April 13, 2010

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**
1st Quarter, 2010
January 1, 2010 to March 31, 2010

Dear Ms. Kolon:

Please find enclosed the Quarterly Progress Report for the period of January 1, 2010 to March 31, 2010.

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

Sincerely,

Farsad Fotouhi

Farsad Fotouhi
Vice President
Corporate Environmental Engineering

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

RECEIVED

APR 14 2010

MDEQ - RRD
JACKSON DISTRICT OFFICE



1st Quarter, 2010

(January, February, March)

RECEIVED

APR 14 2010

WJBD - MKD

JACKSON DISTRICT OFFICE

Table of Contents

Summary of activity during this quarter

Submittals/Responses

Anticipated activities for the next quarter

Quarterly Performance Analysis

Mass Reduction

Maps

Units D₀ & C₃ Potentiometric Surface Contour Map – March 9, 2010

D₂ & Portions of Unit E Potentiometric Surface Contour Map – March 9, 2010

Potentiometric Surface Map (Peat) – March 9, 2010

Potentiometric Surface Map (Sand & Gravel) – March 9, 2010

Southwest Property 1,4-Dioxane Isoconcentration Contour Map – October 2009-March 2010

Southwest Property Potentiometric Surface Map – March 9, 2010

Units C₃, D₂, D₀ and Southwest Property 1,4-Dioxane Isoconcentration Contour Map – October 2009-March 2010

Unit E 1,4-Dioxane Isoconcentration Map – October 2009-March 2010

Unit E Potentiometric Surface Contour Map – March 9, 2010

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

01/15/10 - LB-1 & LB-3 (D2) were shut down briefly due to a DTE power failure.

01/20/10-01/25/10 - PW-1 (Marshy) was shut down briefly due to flow fluctuation and maintenance.

01/22/10-01/23/10 - Maple treatment was shut down for several hours for maintenance.

02/01/10 - 02/08/10 – Maple Treatment was shut down during well rehabilitation.

02/09/10-02/28/10 - PW-1 (Marshy) was shut down intermittently due to low water levels.

02/12/10 - Maple Treatment was briefly shut down for maintenance.

02/19/10 - System 1B was shut down briefly for maintenance.

03/01/10-03/24/10 - PW-1 (Marshy) was shut down intermittently due to low water levels.

03/03/10 - 03/04/10 - TW-11 (E) was shut down for maintenance.

03/24/10 – PW-1 (Marshy) pump was replaced.

03/28/10 – TW-14 (C3), TW-9 & HW-S (D2), and TW-11 & TW-17 (E) were shut down due to a DTE power failure.

03/29/10 – TW-1 & TW-14 (C3), TW-5, TW-9, & HW-S (D2), TW-11 & TW-17 (E) were shut down due to a DTE power failure.

03/30/10 - 03/31/10 - TW-5, HW-S (D2) and TW-11 (E) were shut down due to a DTE power failure.

Field Activities

01/06/10 Installation of TW-21 was completed.

Submittals/Responses

- 01/15/09 PLS submitted Maple Interim Response Operation Report to MDEQ
PLS submitted Monthly Monitoring Report (NPDES) to MDEQ
PLS submitted Discharge Monitoring Report (DMR) electronically to MDEQ
PLS submitted 4th Quarter 2009 Report to MDEQ
- 02/16/09 PLS submitted Maple Interim Response Operation Report to MDEQ
PLS submitted Monthly Monitoring Report (NPDES) to MDEQ
PLS submitted Discharge Monitoring Report (DMR) electronically to MDEQ
- 03/16/09 PLS submitted Maple Interim Response Operation Report to MDEQ
PLS submitted Monthly Monitoring Report (NPDES) to MDEQ
PLS submitted Discharge Monitoring Report (DMR) electronically to MDEQ

Anticipated Major Activities for the Next Quarter

- Install pipeline extension from Maple Road to Allison
- Install pipeline to TW-21
- Install a set of new monitoring wells for the East and West plumes
- Finalize the Global Remediation Package

Quarterly Performance Analysis

For the months of January, February, and March 2010, over 630 pounds of 1,4-dioxane were removed and 148,110,907 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 82,380 pounds and the total volume of water discharged since May 1997 is over 5.5 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

January 1 - January 31, 2010

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	1,656,133	37	0.1	1.8	132
TW-2 (Dolph)	2,471,575	55	0.1	1.7	81
TW-3	-	0	0.0	0.0	59
TW-6	-	0	0.0	0.0	97
TW-10	3,602,515	81	0.7	21.6	720
TW-14	3,350,564	75	0.1	2.9	105
TW-20	3,352,305	75	1.5	47.1	1683
MW-22	-	0.0	0.0	0.0	2620
<i>Sub-Totals</i>	14,433,092	323	2	75	
Marshy					
PW-1	169,663	4	0.0	1.1	801
<i>Sub-Totals</i>	169,663	4	0	1	
E					
TW-11	1,487,688	33	0.1	3.3	269
TW-12	-	0	0.0	0.0	18
TW-17	3,341,971	75	0.1	2.7	98
TW-18	10,423,919	234	0.9	28.3	325
MW-64	-	0	0.0	0.0	71
<i>Sub-Totals</i>	15,253,578	342	1	34	
Southwest					
Active Wells*	1,763,741	40	0.2	7.7	523
MW-10d	-	0.0	0.0	0.0	1083
MW-75	-	0	0.0	0.0	257
MW-45d	-	0.0	0.0	0.0	335
<i>Sub-Totals</i>	1,763,741	40	0	8	
D2					
LB-1	4,236,373	95	0.6	17.8	504
LB-3	3,568,837	80	0.5	14.8	497
AE-3	668,557	15	0.0	0.6	110
HW-S	1,072,415	24	0.2	6.7	751
TW-5	5,033,250	113	1.1	33.5	797
TW-9	3,573,572	80	0.9	26.8	900
MW-11d	-	0	0.0	0.0	290
<i>Sub-Totals</i>	18,153,004	407	3	100	
Overall Totals	49,773,078	1,115	7.0	218.5	

*SW Active = TW-8, TW-13

MASS REDUCTION DETAIL BY AQUIFER

February 1 - February 28, 2010

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	1,493,994	37	0.1	1.7	133
TW-2 (Dolph)	2,226,741	55	0.1	1.6	84
TW-3	-	0	0.0	0.0	59
TW-6	-	0	0.0	0.0	97
TW-10	3,310,658	82	0.7	19.3	700
TW-14	2,968,814	74	0.1	2.6	105
TW-20	3,027,831	75	1.5	41.7	1650
MW-22	-	0.0	0.0	0.0	2620
<i>Sub-Totals</i>	<i>13,028,038</i>	<i>323</i>	<i>2</i>	<i>67</i>	
Marshy					
PW-1	91,117	2	0.0	0.6	819
<i>Sub-Totals</i>	<i>91,117</i>	<i>2</i>	<i>0</i>	<i>1</i>	
E					
TW-11	1,347,044	33	0.1	3.0	263
TW-12	-	0	0.0	0.0	18
TW-17	3,018,549	75	0.1	2.4	95
TW-18	9,420,053	234	0.9	24.9	317
MW-64	-	0	0.0	0.0	71
<i>Sub-Totals</i>	<i>13,785,646</i>	<i>342</i>	<i>1</i>	<i>30</i>	
Southwest					
Active Wells	1,541,174	38	0.2	6.7	523
MW-10d	-	0.0	0.0	0.0	1083
MW-75	-	0	0.0	0.0	257
MW-45d	-	0.0	0.0	0.0	335
<i>Sub-Totals</i>	<i>1,541,174</i>	<i>38</i>	<i>0</i>	<i>7</i>	
D2					
LB-1	3,834,208	95	0.6	16.1	503
LB-3	3,229,035	80	0.4	12.1	450
AE-3	601,734	15	0.0	0.6	113
HW-S	967,957	24	0.2	6.9	853
TW-5	4,538,414	113	1.2	33.2	876
TW-9	3,229,552	80	0.9	25.0	929
MW-11d	-	0	0.0	0.0	290
<i>Sub-Totals</i>	<i>16,400,900</i>	<i>407</i>	<i>3</i>	<i>94</i>	
Overall Totals	44,846,875	1,112	7.1	198.4	

*SW Active = TW-8, TW-13

MASS REDUCTION DETAIL BY AQUIFER

March 1 - March 31, 2010

	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	1,646,961	37	0.0	1.4	100
	TW-2 (Dolph)	2,455,251	55	0.1	1.7	81
	TW-3	-	0	0.0	0.0	59
	TW-6	-	0	0.0	0.0	97
	TW-10	3,613,927	81	0.7	21.2	703
	TW-14	3,421,598	77	0.1	2.9	101
	TW-20	3,352,137	75	1.4	44.1	1576
	MW-22	-	0.0	0.0	0.0	2620
	<i>Sub-Totals</i>	14,489,874	325	2	71	
Marshy						
	PW-1	128,188	3	0.0	0.9	866
	<i>Sub-Totals</i>	128,188	3	0	1	
E						
	TW-11	1,392,505	31	0.1	2.9	247
	TW-12	-	0	0.0	0.0	18
	TW-17	3,415,345	77	0.1	2.8	98
	TW-18	10,433,642	234	0.9	27.1	311
	MW-64	-	0	0.0	0.0	71
	<i>Sub-Totals</i>	15,241,492	341	1	33	
Southwest						
	Active Wells	1,678,120	38	0.2	7.1	508
	MW-10d	-	0.0	0.0	0.0	1083
	MW-75	-	0	0.0	0.0	257
	MW-45d	-	0.0	0.0	0.0	335
	<i>Sub-Totals</i>	1,678,120	38	0	7	
D2						
	LB-1	4,244,596	95	0.6	17.1	484
	LB-3	3,575,950	80	0.4	13.9	465
	AE-3	672,040	15	0.0	0.6	113
	HW-S	1,001,604	22	0.2	7.6	906
	TW-5	4,729,535	106	1.1	34.4	871
	TW-9	3,558,396	80	0.9	28.2	951
	MW-11d	-	0	0.0	0.0	290
	<i>Sub-Totals</i>	17,782,121	398	3	102	
Overall Totals		49,319,795	1,105	6.9	213.8	

*SW Active = TW-8, TW-13

MASS REDUCTION SUMMARY
Mass Removed Per Month (lb)

A	B	C	D	E	F
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	Total Mass Removed from Units E, D2, C3, 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
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	Total Mass Removed from Units E, D2, C3, 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
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	Total Mass Removed from Units E, D2, C3, 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
Total to date	4926	858	484	54655	60922