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October 18, 2013

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**
3rd Quarter, 2013
July 1, 2013 to September 30, 2013

Dear Ms. Kolon:

Please find enclosed the Quarterly Progress Report for the period of July 1, 2013 to September 30, 2013.

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

Sincerely,

Farsad Fotouhi
Vice President
Corporate Environmental Engineering

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

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DEQ • RD
JACKSON DISTRICT OFFICE



3rd Quarter, 2013

(July, August, September)

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Isoconcentration Map – C₃, D₀, D₂ & Southwest – Apr - Sept 2013

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Isoconcentration Map – Unit E – Apr – Sept 2013

Potentiometric Surface Map – Unit E – Sept 18, 2013

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

07/22/13 - Treatment was shut down briefly for maintenance.
08/08/13 - TW-19 (E) was shut down briefly for maintenance.
09/15/13 - 9/16/13 - TW-21 (D2) , TW-18 (E) and System 1A were shut down for maintenance.
09/15/13 - 09/18/13 - TW-19 (E) was shut down for maintenance.

Field Activities

Drillers evaluated LB-4 for repair.

Submittals/Responses

07/12/13 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
07/15/13 PLS submitted Monthly Monitoring Report (NPDES) to DEQ
 PLS submitted 2nd Quarter 2013 Report to DEQ
08/15/13 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
 PLS submitted Monthly Monitoring Report (NPDES) to DEQ
09/16/13 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
 PLS submitted Monthly Monitoring Report (NPDES) to DEQ

Anticipated Major Activities for the Next Quarter

- Installation of LB-4
- Evaluate the possibility of activating TW-15
- Work to maintain access to existing monitoring wells on Smith property

Quarterly Performance Analysis

For the months of July, August, September 2013, over 361 pounds of 1,4-dioxane were removed and 80,942,190 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 89,516 pounds and the total volume of water discharged since May 1997 is over 6.9 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 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

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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

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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

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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
Total to date	6316	1093	521	59127	0.176	67058

MASS REDUCTION DETAIL BY AQUIFIER

July 1 - July 31, 2013

	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	-	0	0.0	0.0	120
	TW-2 (Dolph)	538,330	12	0.0	0.4	85
	TW-3	-	0	0.0	0.0	8
	TW-6	-	0	0.0	0.0	58
	TW-10	-	0	0.0	0.0	320
	TW-14	-	0	0.0	0.0	24
	TW-20	1,931,045	43	0.4	13.5	840
	MW-22	-	0.0	0.0	0.0	1090
	<u>Sub-Totals</u>	<u>2,469,375</u>	<u>55</u>	<u>0</u>	<u>14</u>	
Marshy						
	PW-1	102,212	2	0.0	0.9	1000
	<u>Sub-Totals</u>	<u>102,212</u>	<u>2</u>	<u>0</u>	<u>1</u>	
E						
	TW-11	1,062,057	24	0.1	2.0	230
	TW-12	-	0	0.0	0.0	33
	TW-17	-	0	0.0	0.0	560
	TW-18	6,967,788	156	0.8	23.8	410
	TW-19	4,535,181	102	1.0	31.0	820
	MW-64	-	0	0.0	0.0	49
	<u>Sub-Totals</u>	<u>12,565,026</u>	<u>281</u>	<u>2</u>	<u>57</u>	
Southwest						
	Active Wells	1,534,356	34	0.3	8.9	696
	MW-10d	-	0.0	0.0	0.0	1330
	MW-75	-	0	0.0	0.0	1440
	MW-45d	-	0.0	0.0	0.0	630
	<u>Sub-Totals</u>	<u>1,534,356</u>	<u>34</u>	<u>0</u>	<u>9</u>	
D0						
	Ann Arbor Cleaning	-	-	-	0.000	81
	<u>Sub-Totals</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>0.000</u>	
D2						
	LB-1	4,446,428	100	0.6	18.9	510
	LB-3	-	0	0.0	0.0	407
	HW-S	-	0	0.0	0.0	630
	TW-5	2,153,216	48	0.6	18.0	1000
	TW-9	1,109,362	25	0.2	7.4	800
	TW-21	2,460,445	55	0.1	3.2	160
	MW-11D	-	0	0.0	0.0	160
	<u>Sub-Totals</u>	<u>10,169,451</u>	<u>228</u>	<u>2</u>	<u>47</u>	
Overall Totals		26,840,420	601	4.1	128.1	

*SW Active = TW-8, TW-22

MASS REDUCTION DETAIL BY AQUIFER

August 1 - August 31, 2013

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	-	0	0.0	0.0	120
TW-2 (Dolph)	477,843	11	0.0	0.3	83
TW-3	-	0	0.0	0.0	8
TW-6	-	0	0.0	0.0	58
TW-10	-	0	0.0	0.0	320
TW-14	-	0	0.0	0.0	24
TW-20	2,161,842	48	0.5	15.5	857
MW-22	-	0.0	0.0	0.0	1090
Sub-Totals	2,639,685	59	1	16	
Marshy					
PW-1	105,133	2	0.0	0.8	895
Sub-Totals	105,133	2	0	1	
E					
TW-11	1,086,644	24	0.1	2.0	221
TW-12	-	0	0.0	0.0	33
TW-17	-	0	0.0	0.0	560
TW-18	6,934,624	155	0.6	18.7	323
TW-19	4,523,383	101	0.9	27.7	733
MW-64	-	0	0.0	0.0	50
	12,544,651	281	2	48	
Southwest					
Active Wells	1,451,687	33	0.2	7.2	594
MW-10d	-	0.0	0.0	0.0	1330
MW-75	-	0	0.0	0.0	1440
MW-45d	-	0.0	0.0	0.0	630
Sub-Totals	1,451,687	33	0	7	
D0					
Ann Arbor Cleaning	-			0.000	81
Sub-Totals	-			0.000	
D2					
LB-1	4,465,947	100	0.7	22.6	606
LB-3	-	0	0.0	0.0	140
HW-S	-	0	0.0	0.0	630
TW-5	2,222,884	50	0.5	14.8	800
TW-9	1,117,015	25	0.2	7.4	791
TW-21	2,399,406	54	0.1	2.6	134
MW-11D	-	0	0.0	0.0	156
Sub-Totals	10,205,252	229	2	47	
Overall Totals	26,946,408	604	3.9	119.5	

*SW Active = TW-8, TW-22

MASS REDUCTION DETAIL BY AQUIFER

September 1 - September 30, 2013

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	-	0	0.0	0.0	120
TW-2 (Dolph)	418,718	10	0.0	0.3	78
TW-3	-	0	0.0	0.0	8
TW-6	-	0	0.0	0.0	58
TW-10	-	0	0.0	0.0	320
TW-14	-	0	0.0	0.0	24
TW-20	2,160,124	50	0.5	15.0	832
MW-22	-	0.0	0.0	0.0	1090
Sub-Totals	2,578,842	60	1	15	
Marshy					
PW-1	99,977	2	0.0	0.6	768
Sub-Totals	99,977	2	0	1	
E					
TW-11	1,155,744	27	0.1	2.1	220
TW-12	-	0	0.0	0.0	33
TW-17	-	0	0.0	0.0	560
TW-18	6,521,482	151	0.7	19.9	366
TW-19	4,135,411	96	0.8	24.2	701
MW-64	-	0	0.0	0.0	57
	11,812,637	273	2	46	
Southwest					
Active Wells	1,348,068	31	0.2	6.5	573
MW-10d	-	0.0	0.0	0.0	1330
MW-75	-	0	0.0	0.0	1440
MW-45d	-	0.0	0.0	0.0	630
Sub-Totals	1,348,068	31	0	6	
D0					
Ann Arbor Cleaning	42,000			0.023	65
Sub-Totals	42,000			0.023	
D2					
LB-1		4316259	99.9	0.6	18
LB-3		0	0.0	0.0	0
HW-S		0	0.0	0.0	0
TW-5		2134141	49.4	0.6	17
TW-9		1243326	28.8	0.2	7
TW-21		2289620	53.0	0.1	2
MW-11D		0	0.0	0.0	0
Sub-Totals	Sub-Totals	9983346	231	1	44
Overall Totals					
	25,822,870	598	3.8	112.9	

*SW Active = TW-8, TW-22