

DRH



RECEIVED

APR 16 2015

DEQ • RD
JACKSON DISTRICT OFFICE

1st Quarter, 2015

(January, February, March)

Table of Contents

Summary of activity during this quarter

Submittals/Responses

Anticipated activities for the next quarter

Quarterly Performance Analysis

Mass Reduction

Maps

Potentiometric Surface Map – Marshy Area – Peat – March 30, 2015

Potentiometric Surface Map – Southwest Property - March 30, 2015

Potentiometric Surface Map – Units D₂ & E – March 30, 2015

Potentiometric Surface Map – Unit E – March 30, 2015

Potentiometric Surface Map – Units SW, D₀, C₃ – March 30, 2015

Isoconcentration Map – Southwest Property – Oct 2014 – April 2015

Isoconcentration Map – Units C₃, D₀, D₂ & SW – Oct 2014-April 2015

Isoconcentration Map – Unit E – Oct 2014-April 2015

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

01/01/15 - 01/30/15 - TW-16 (E) was shut down for rehabilitation.

02/10-15 - 02/17/15 - TW-16 (E) was shut down for maintenance.

02/20/15 - Systems 1A and 2A were shut down briefly for maintenance.

03/30/15 - TW-21 & LB-4 (D2), TW-16 & TW-19 (E), and Treatment were shut down briefly to upgrade pipeline to Pond.

03/31/15 - PW-1 (Marshy) was shut down for maintenance.

Field Activities

Jan/Feb 2015 – Rehabilitation of TW-16 and IW-5

03/30/15 – Increased pipe size for TW-21 and Evergreen Transmission Line at the Red Pond
(approximately 50' pipe was replaced)

Submittals/Responses

- 01/13/15 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
 PLS submitted Monthly Monitoring Report (NPDES) to DEQ
- 01/13/15 PLS submitted 4th Quarter 2015 Report to DEQ
- 01/21/15 PLS submitted Pall Proposed Monitoring Plan Revisions to DEQ
- 02/06/15 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
 PLS submitted Monthly Monitoring Report (NPDES) to DEQ
- 02/24/15 PLS submitted Pall Proposed Monitoring Plan Revisions with Explanation Codes
 to DEQ
- 03/06/15 PLS submitted Hydrogeological Investigation of the Little Lake Area System and
 Portions of the Honey Creek Corridor to DEQ

03/09/15 PLS submitted Discharge Monitoring Report (DMR) electronically to DEQ
PLS submitted Monthly Monitoring Report (NPDES) to DEQ

Anticipated Major Activities for the Next Quarter

- Modify the Porter Lot pump station to receive the iron removal launchers
- Modify the monitoring plan as proposed
- Revisions to the O&M Plan
- Well rehabilitation, as needed

Quarterly Performance Analysis

For the months of January, February, March 2015, over 229 pounds of 1,4-dioxane were removed and 64,940,203 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 91,200 pounds and the total volume of water discharged since May 1997 is over 7.4 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
Total to date	7117	1180	529	59933	0.309	68758

MASS REDUCTION DETAIL BY AQUIFER

January 1 - January 31, 2015

	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)	514,275	12	0.0	0.3	81
	TW-20	1,348,584	30	0.3	9.7	861
	Sub-Totals	1,862,839	42	0	10	
Marshy						
	PW-1	73,990	2	0.009	0.3	472
	Sub-Totals	73,990	2	0	0	
E						
	TW-16	591,772	13	0.2	4.8	969
	TW-18	7,474,956	167	0.6	17.5	281
	TW-19	3,963,950	89	0.7	22.2	672
	Sub-Totals	12,030,678	270	1	45	
Southwest						
	Active Wells	424,824	10	0.1	2.4	671
	Sub-Totals	424,824	10	0	2	
D0						
	Ann Arbor Cleaning	42,000			0.0	47
	Sub-Totals	42,000			0	
D2						
	LB-4	4,466,406	100	0.6	19.9	533
	TW-21	3,018,798	68	0.1	2.5	101
	Sub-Totals	7,485,204	168	1	22	
Overall Totals		21,877,535	490	2.6	79.6	

*SW Active = TW-8, TW-22

February 1 - February 28, 2015

	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)	460,903	11	0.0	0.3	84
	TW-20	1,104,567	27	0.3	9.0	976
	Sub-Totals	1,565,470	39	0	9	
Marshy						
	PW-1	65,949	2	0.0	0.3	613
	Sub-Totals	65,949	2	0	0	
E						
	TW-16	973,283	24	0.3	7.6	934
	TW-18	6,842,162	170	0.6	16.0	280
	TW-19	3,142,921	78	0.6	17.8	679
	Sub-Totals	10,958,366	272	1	41	
Southwest						
	Active Wells	342,921	9	0.1	1.9	665
	Sub-Totals	342,921	9	0	2	
D2						
	LB-4	4,035,097	100	0.6	16.5	490
	TW-21	2,772,314	69	0.1	2.6	118
	Sub-Totals	6,807,411	169	1	19	
Overall Totals		19,740,117	490	2.6	72.1	

*SW Active = TW-8, TW-22

MASS REDUCTION DETAIL BY AQUIFER

March 1 - March 31, 2015

	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)	522,913	12	0.0	0.4	86
	TW-20	1,147,570	26	0.3	8.2	855
	<i>Sub-Totals</i>	1,670,483	37	0	9	
Marshy						
	PW-1	69,687	2	0.0	0.5	824
	<i>Sub-Totals</i>	69,687	2	0	0	
E						
	TW-16	1,453,175	33	0.4	11.0	911
	TW-18	7,639,448	171	0.6	17.9	280
	TW-19	3,096,504	69	0.5	16.8	651
	<i>Sub-Totals</i>	12,189,127	273	1	46	
Southwest						
	Active Wells	341,513	8	0.1	1.8	619
	<i>Sub-Totals</i>	341,513	8	0	2	
D0						
	A2 Cleaning Supply	50,100			0.0272	65
	<i>Sub-Totals</i>	50,100			0.0272	
D2						
	LB-4	4,460,610	100	0.6	17.5	471
	TW-21	3,099,460	69	0.1	2.8	110
	<i>Sub-Totals</i>	7,560,070	169	1	20	
Overall Totals		21,830,880	489	2.5	76.8	

*SW Active = TW-8, TW-22

Maps