

US EPA ARCHIVE DOCUMENT

ATTACHMENT 3

TREND GRAPHS

Part 2 of 4

This document relates to Doc ID

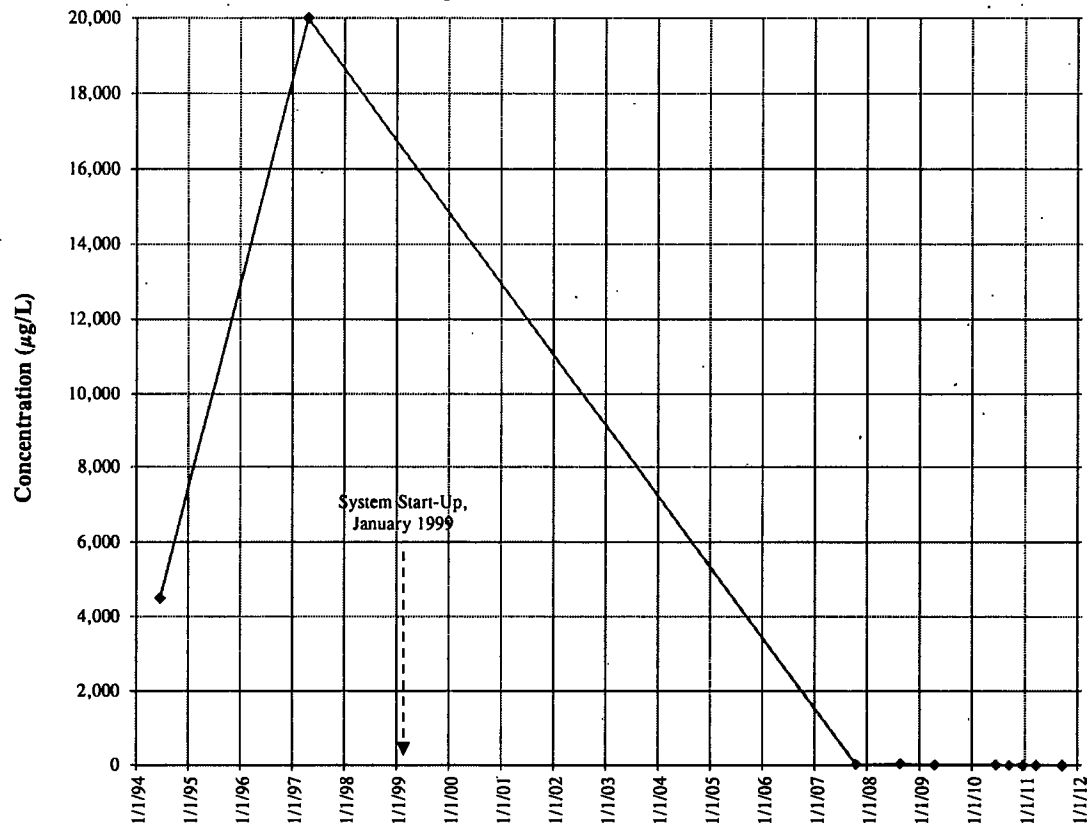
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30216104

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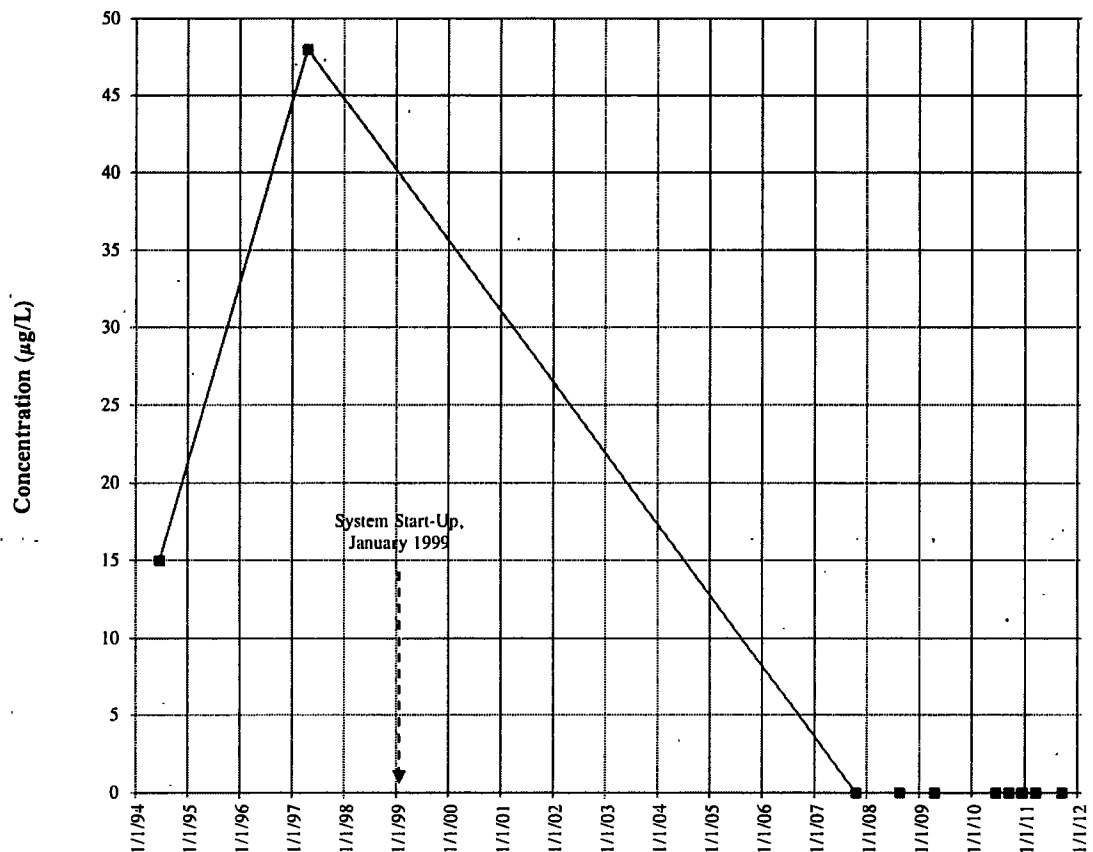
Trend Graph 1 - MW-3A Carbon Tetrachloride



Carbon Tetrachloride

06/21/94	4,500
04/29/97	20,000
10/10/07	23
08/15/08	41
04/22/09	14
06/19/10	7.4
09/23/10	3.9
12/18/10	1.6
03/27/11	1.1
09/30/11	1.0 UJ

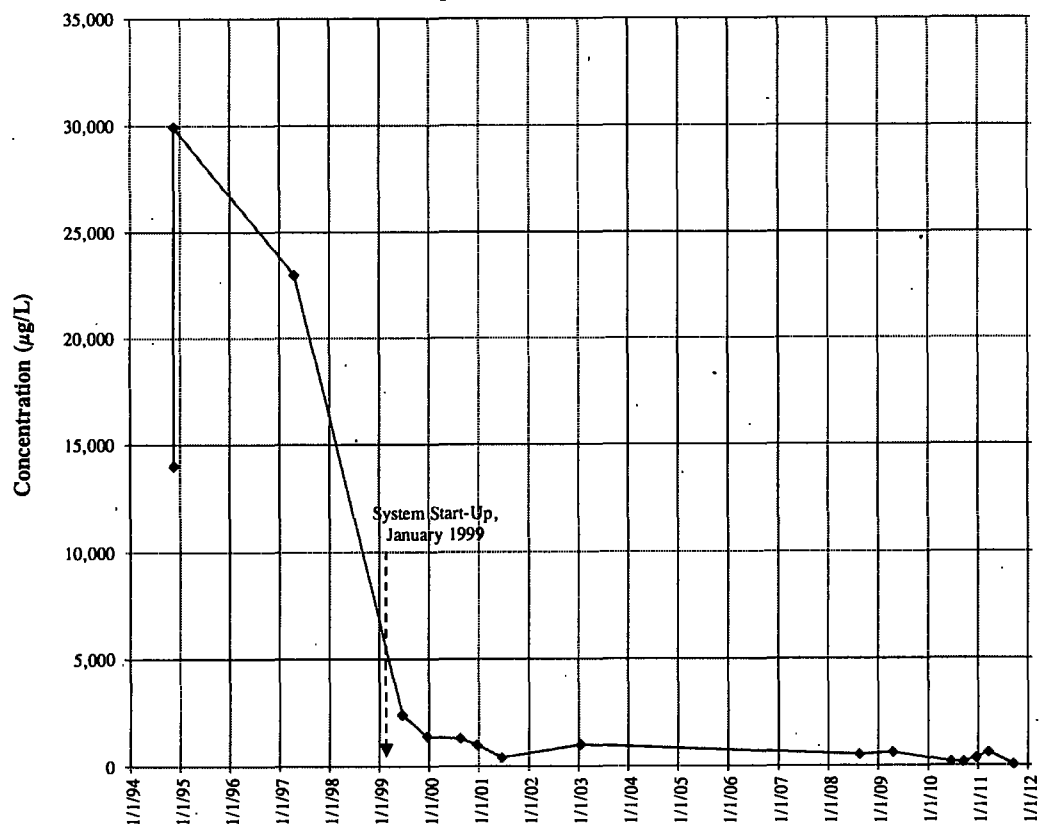
Trend Graph 2 - MW-3A Chloroform



Chloroform

06/21/94	15
04/29/97	48
10/10/07	0.50 U
08/15/08	5 U
04/22/09	5.0 U
06/19/10	0.50 U
09/23/10	1.0 U
12/18/10	0.50 U
03/27/11	0.5 U
09/30/11	1.0 U

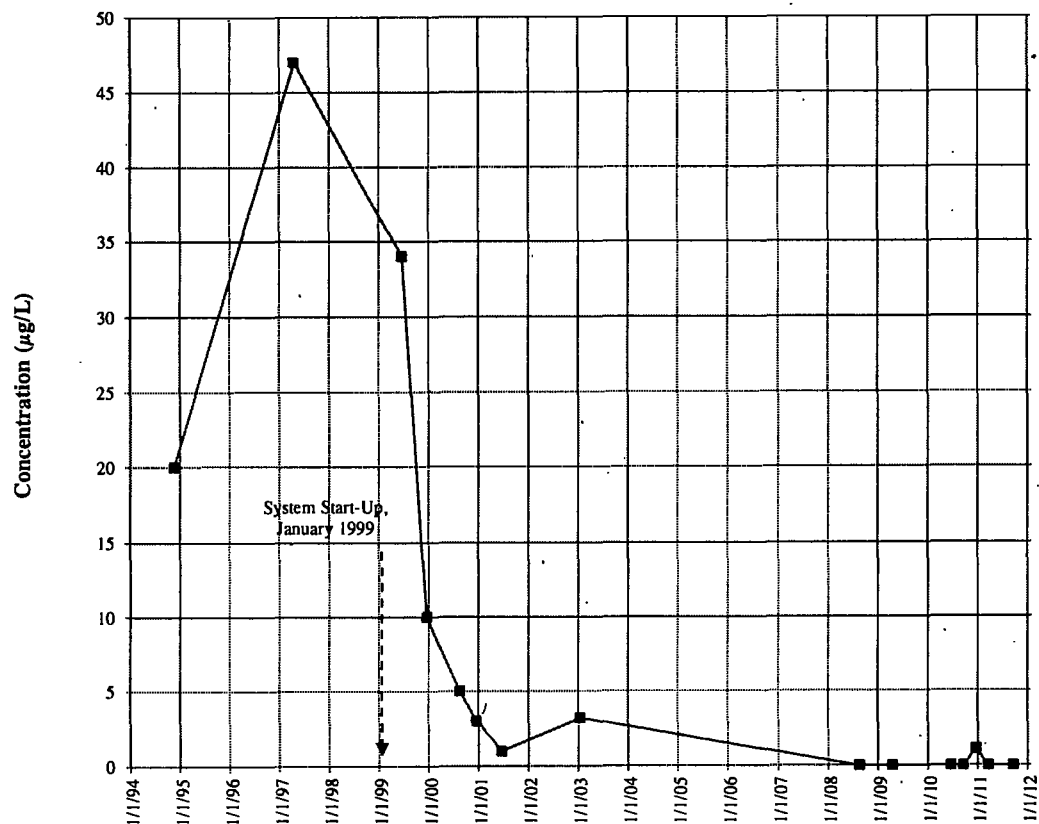
Trend Graph 3 - MW-3B Carbon Tetrachloride



Carbon Tetrachloride

11/18/94	14,000
11/30/94	29,943
4/29/97	23,000
6/23/99	2,400
12/16/99	1,400
8/12/00	1,300
12/19/00	1,000
6/4/01	410
1/23/03	1,000
8/15/08	530
4/22/09	620
6/19/10	190
9/23/10	180
9/23/10	180
12/18/10	350
3/27/11	630
9/30/11	53

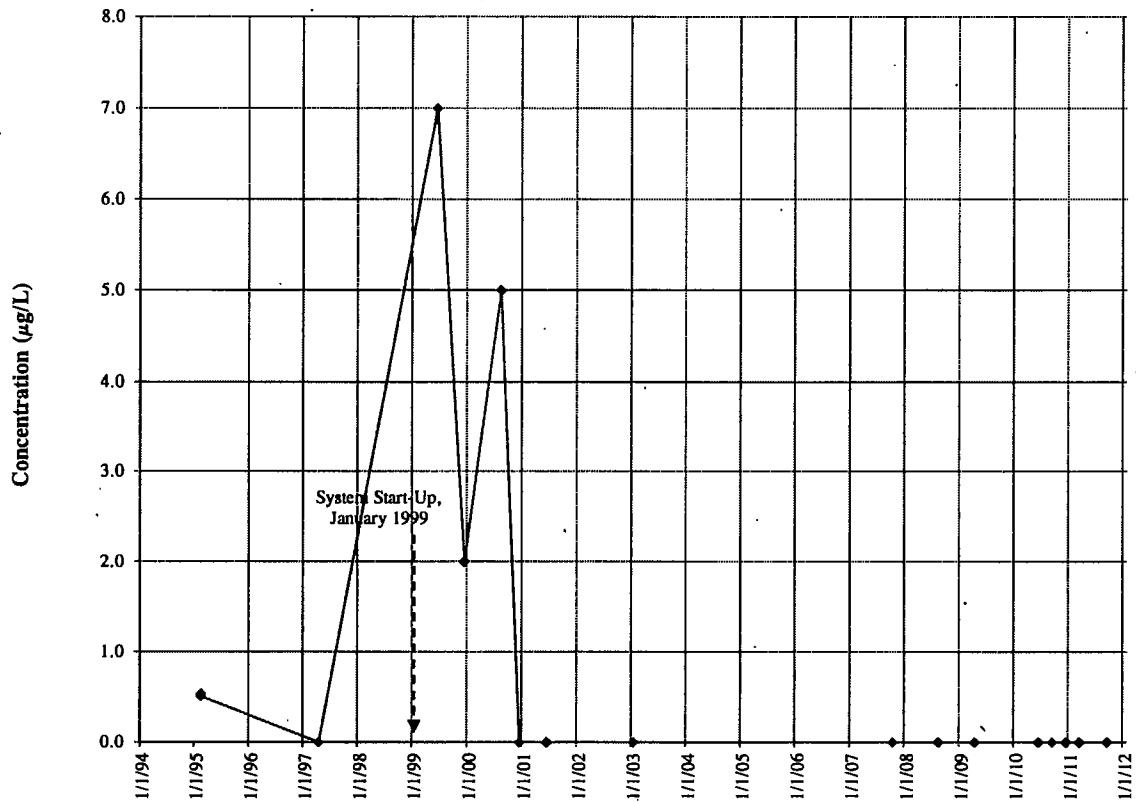
Trend Graph 4 - MW-3B Chloroform



Chloroform

11/18/94	20
11/30/94	NA
4/29/97	47
6/23/99	34
12/16/99	10
8/12/00	5
12/19/00	3
6/4/01	1
1/23/03	3.2
8/15/08	25 U
4/22/09	5.0 U
6/19/10	1.0 U
9/23/10	1.0 U
9/23/10	1.0 U
12/18/10	1.1
3/27/11	2 U
9/30/11	1.0 U

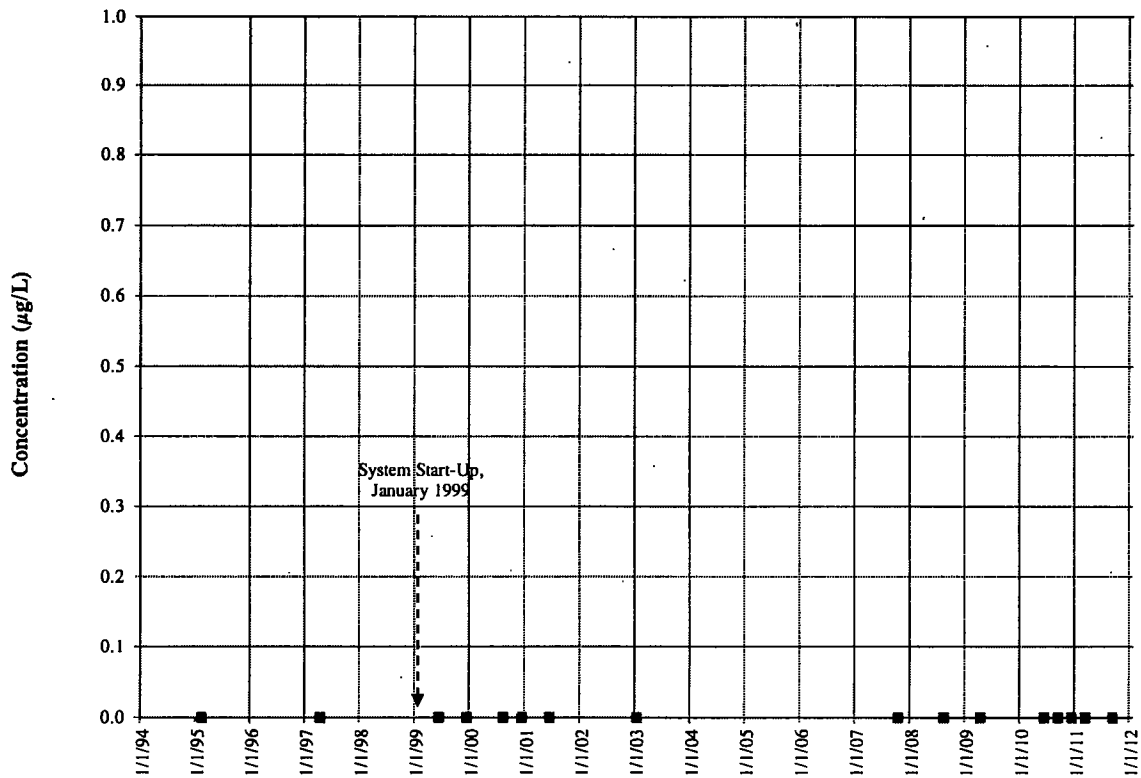
Trend Graph 5 - MW-3D Carbon Tetrachloride



Carbon Tetrachloride

2/14/95	0.54
2/14/95	0.51
4/29/97	ND
6/23/99	7
12/15/99	2
8/12/00	5
12/19/00	ND
6/4/01	ND
1/23/03	ND
10/10/07	0.5 U
8/15/08	5 U
4/22/09	1.0 U
6/19/10	0.50 U
9/23/10	1.0 U
12/18/10	0.50 U
3/27/11	0.5 U
9/30/11	1.0 U

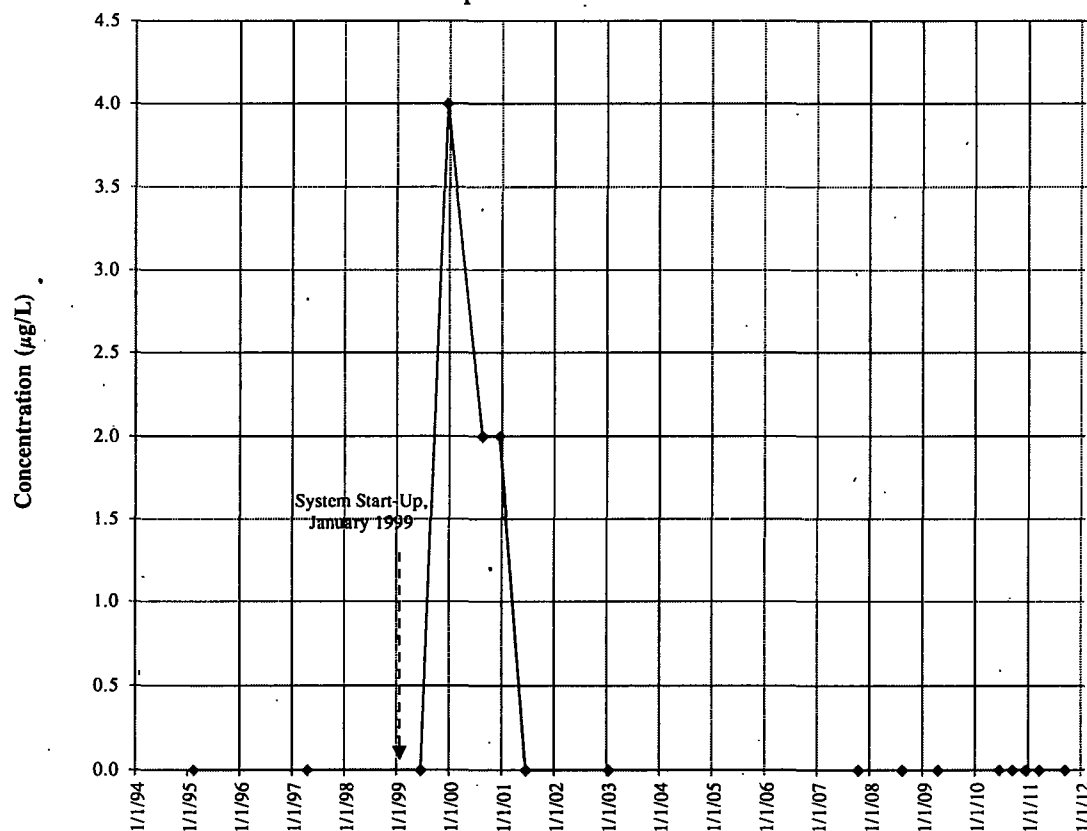
Trend Graph 6 - MW-3D Chloroform



Chloroform

2/14/95	NA
2/14/95	NA
4/29/97	ND
6/23/99	ND
12/15/99	ND
8/12/00	ND
12/19/00	ND
6/4/01	ND
1/23/03	ND
10/10/07	0.5 U
8/15/08	5 U
4/22/09	1.0 U
6/19/10	0.50 U
9/23/10	1.0 U
12/18/10	0.50 U
3/27/11	0.5 U
9/30/11	1.0 U

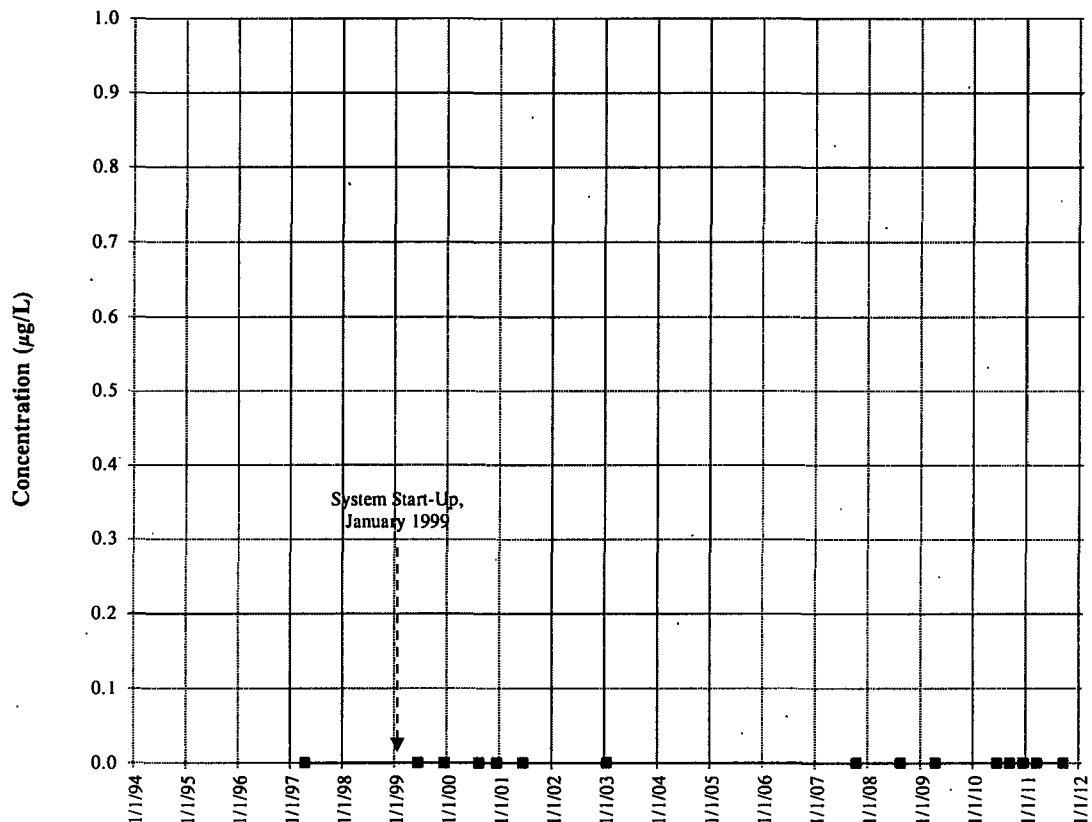
Trend Graph 7 - MW-3E Carbon Tetrachloride



Carbon Tetrachloride

2/14/95	ND
4/29/97	ND
6/23/99	ND
12/16/99	4
8/12/00	2
12/20/00	2
6/5/01	ND
1/23/03	ND
10/10/07	0.50 U
8/15/08	5 U
4/22/09	1.0 U
6/19/10	0.50 U
9/23/10	1.0 U
12/18/10	0.50 U
3/27/11	0.5 U
9/30/11	1.0 UJ

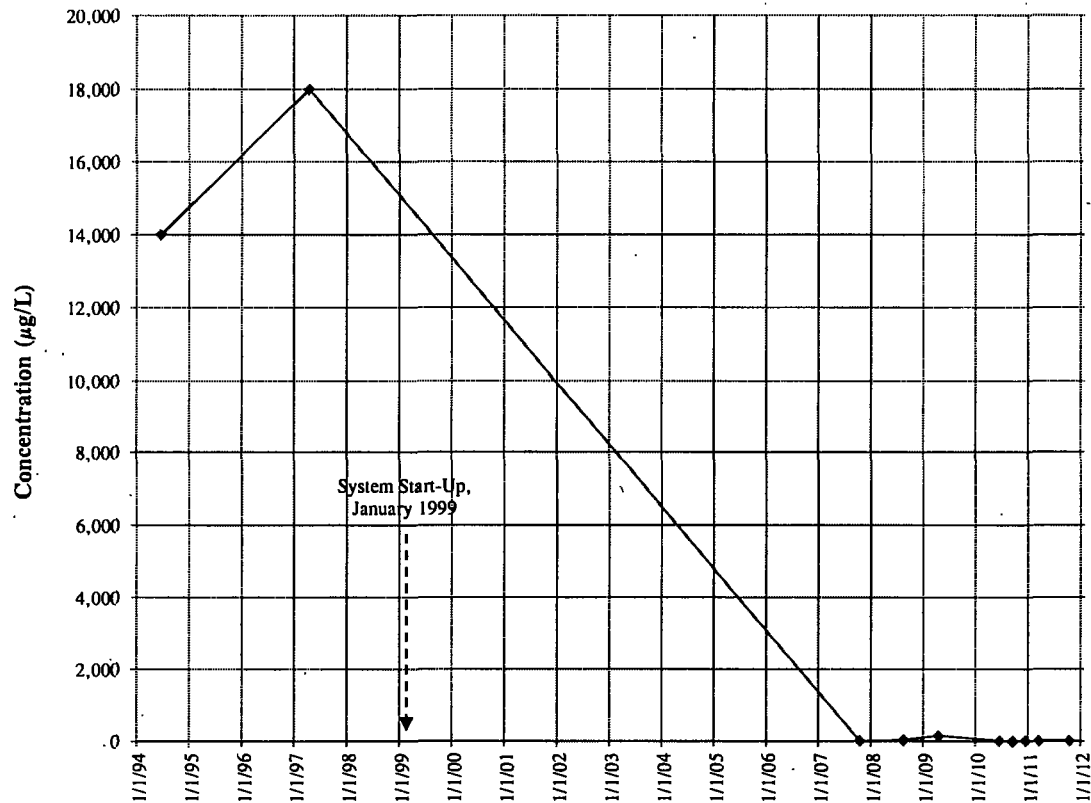
Trend Graph 8 - MW-3E Chloroform



Chloroform

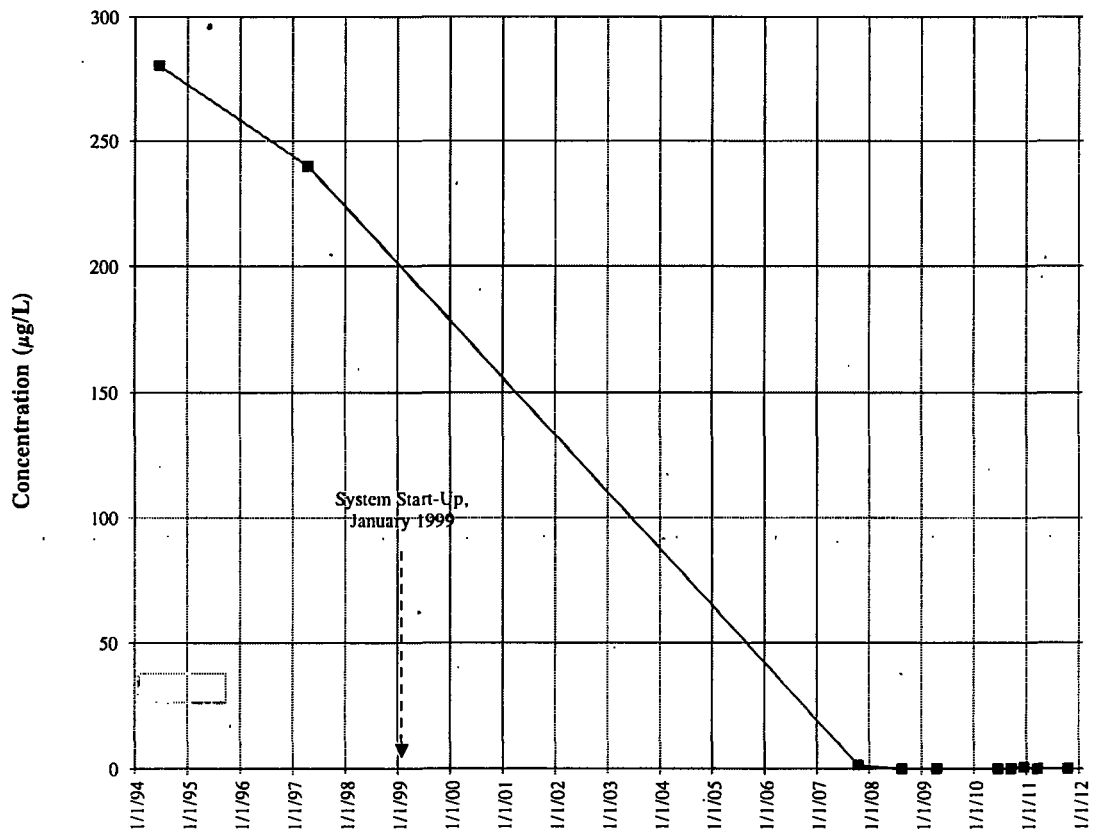
2/14/95	NA
4/29/97	ND
6/23/99	ND
12/16/99	ND
8/12/00	ND
12/20/00	ND
6/5/01	ND
1/23/03	ND
10/10/07	0.50 U
8/15/08	5 U
4/22/09	1.0 UJ
6/19/10	0.50 U
9/23/10	1.0 U
12/18/10	0.50 U
3/27/11	0.5 U
9/30/11	1.0 U

Trend Graph 9 - MW-4A Carbon Tetrachloride



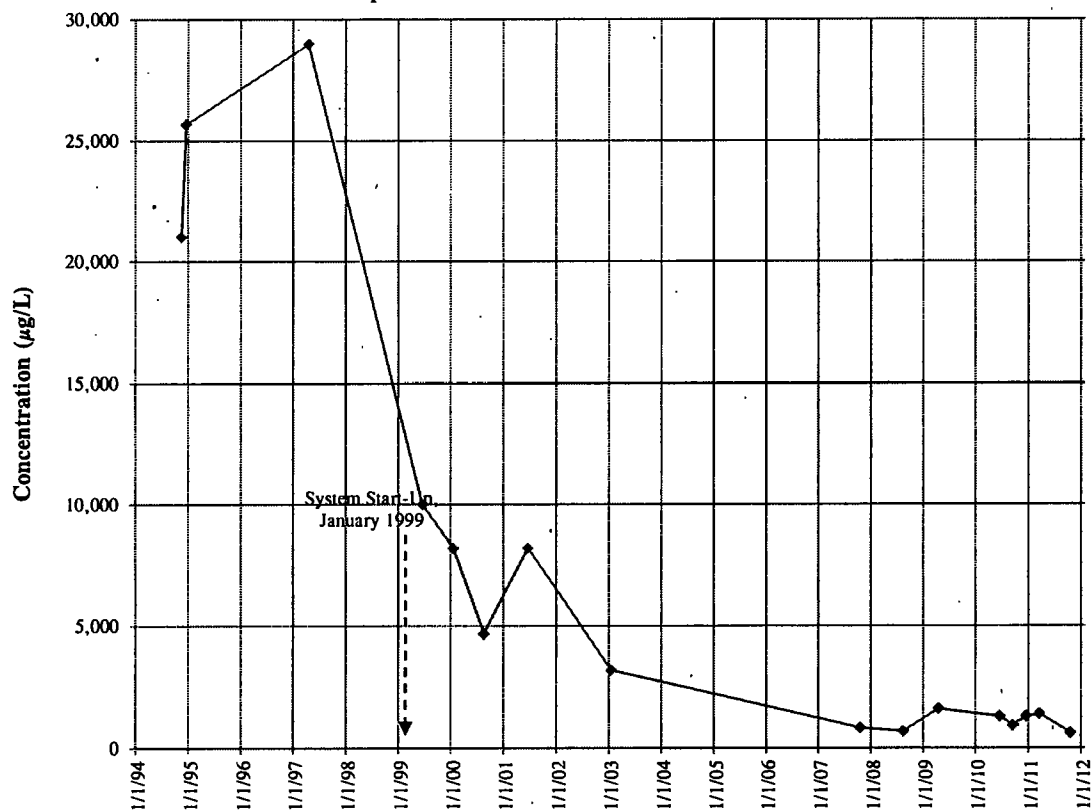
Carbon Tetrachloride	
6/24/94	14,000
4/29/97	18,000
10/13/07	8
8/15/08	35
4/22/09	150
6/18/10	12
9/26/10	4.3
12/19/10	6.8
3/27/11	12
10/2/11	21

Trend Graph 10 - MW-4A Chloroform



Chloroform	
6/24/94	280
4/29/97	240
10/13/07	1.4
8/15/08	5 U
4/22/09	5.0 U
6/18/10	0.50 U
9/26/10	1.0 U
12/19/10	0.62
3/27/11	0.5 U
10/2/11	1.0 U

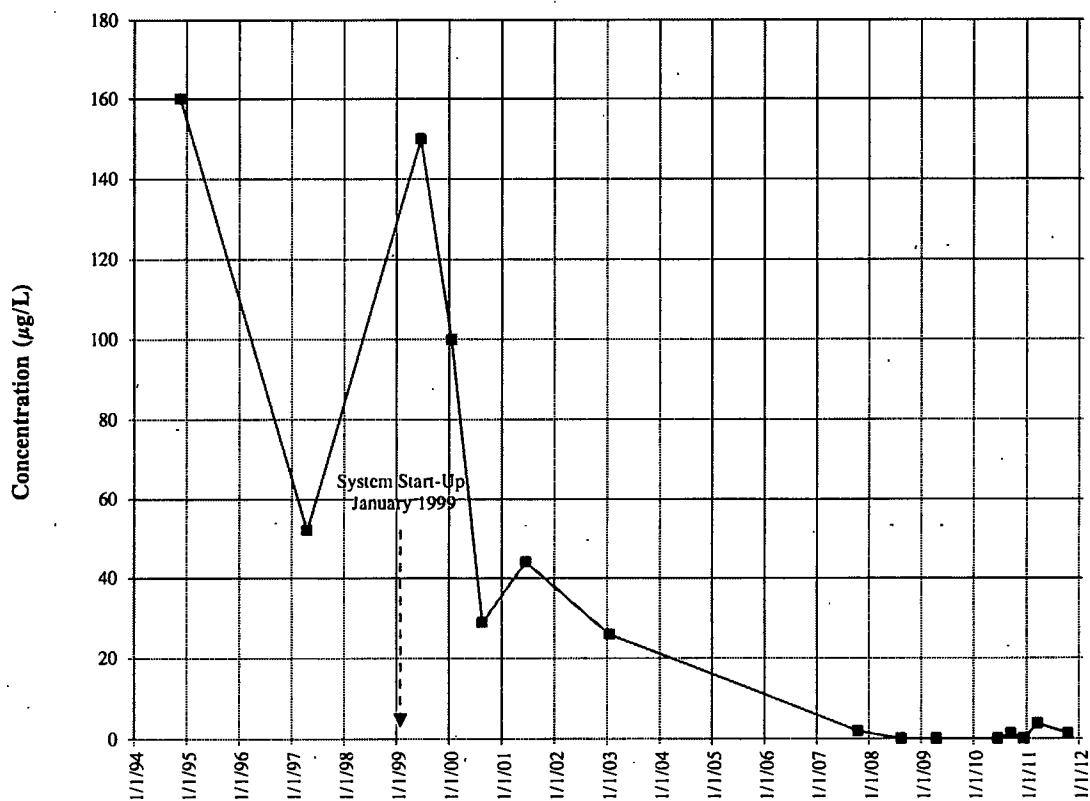
Trend Graph 11 - MW-4B Carbon Tetrachloride



Carbon Tetrachloride

11/17/94	21,000
12/2/94	25,695
4/29/97	29,000
6/26/99	10,000
1/22/00	8,200
8/12/00	4,700
6/5/01	8,200
1/24/03	3,200
10/13/07	830
8/15/08	690
4/22/09	1600
6/18/10	1300
9/26/10	940
12/19/10	1300
3/27/11	1400
10/2/11	640

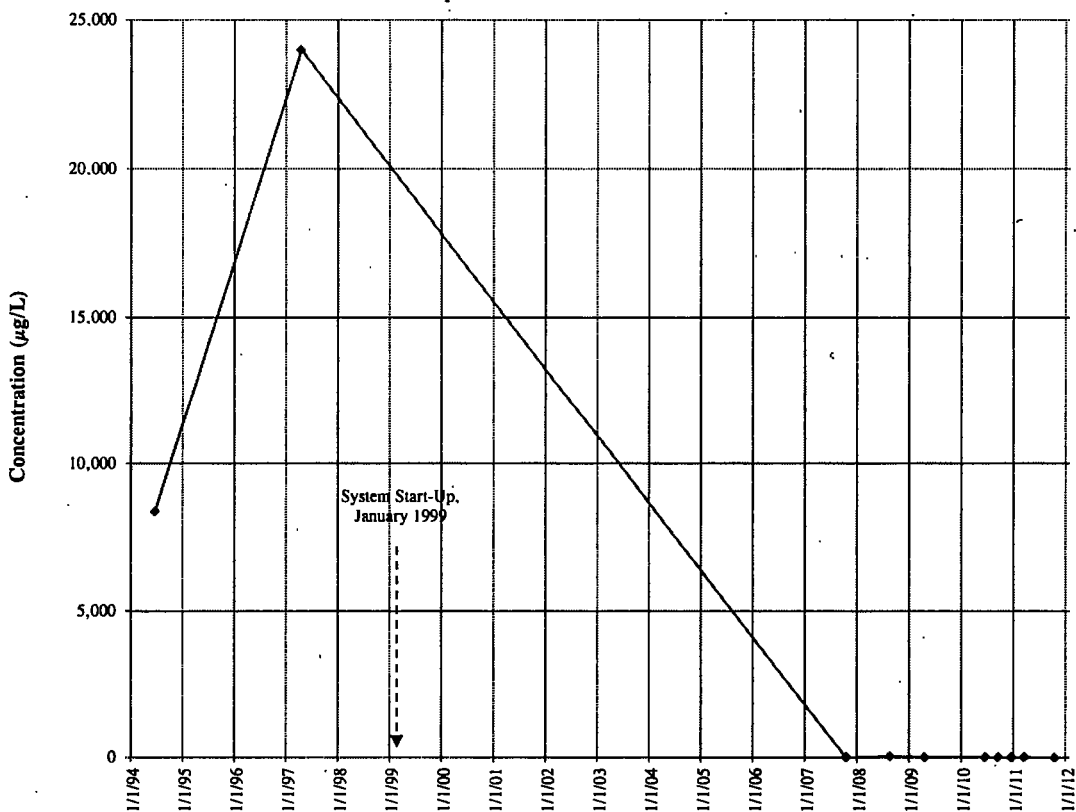
Trend Graph 12 - MW-4B Chloroform



Chloroform

11/17/94	160
12/2/94	NA
4/29/97	52
6/26/99	150
1/22/00	100
8/12/00	29
6/5/01	44
1/24/03	26
10/13/07	1.90
8/15/08	5 U
4/22/09	5.0 U
6/18/10	5.0 U
9/26/10	1.3
12/19/10	3.8 U
3/27/11	3.7
10/2/11	1.3

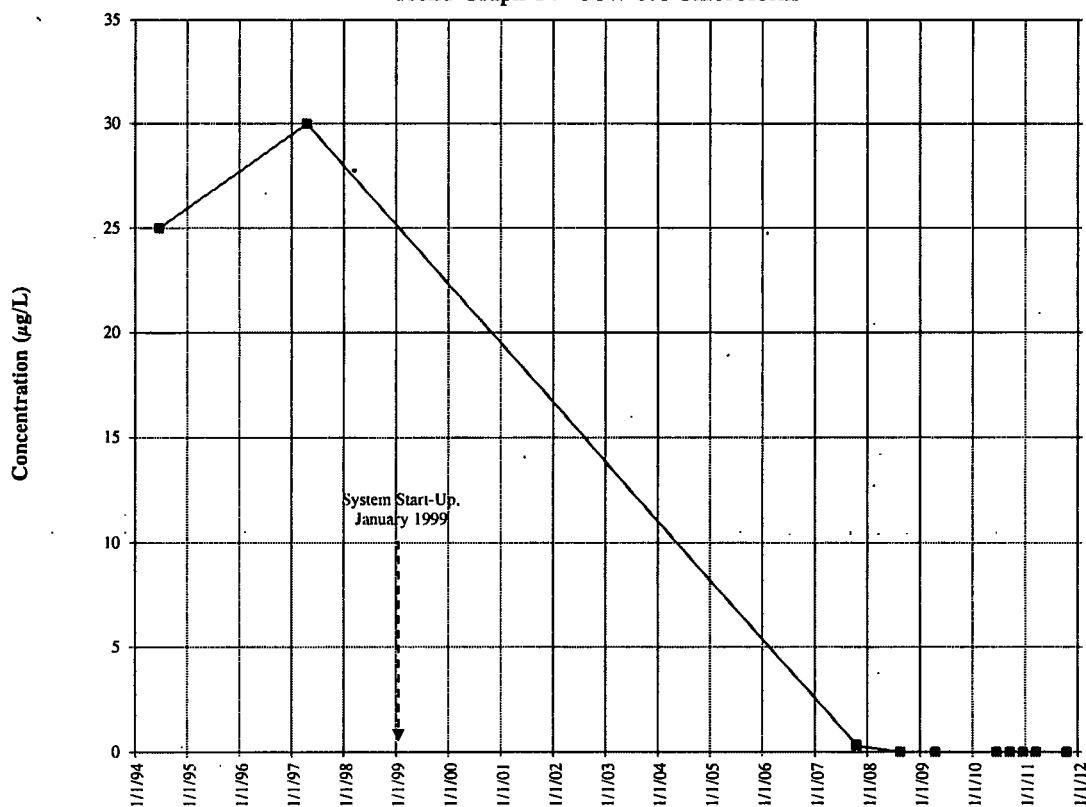
Trend Graph 13 - MW-5A Carbon Tetrachloride



Carbon Tetrachloride

6/24/94	8,400
4/29/97	24,000
10/13/07	7.9
10/13/07	7.3
8/15/08	51
4/23/09	13
6/20/10	13
9/24/10	9.8
12/17/10	11
3/25/11	6.6
10/1/11	4.1 J

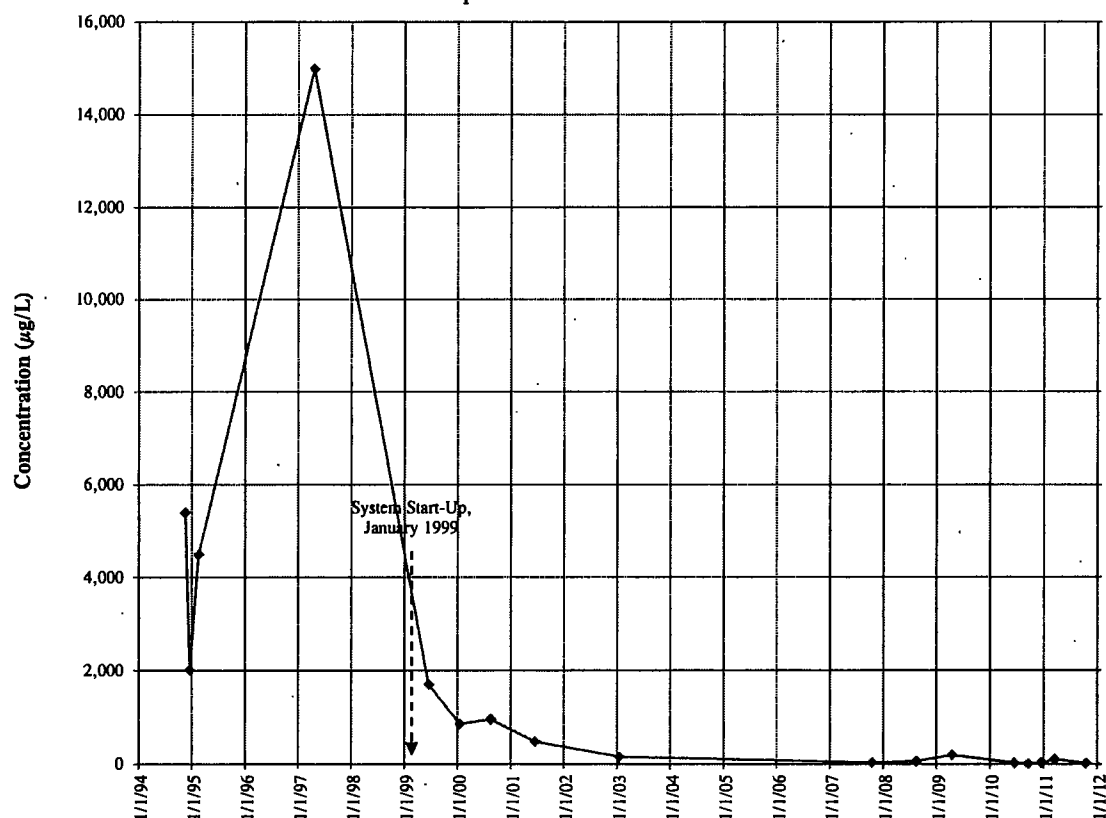
Trend Graph 14 - MW-5A Chloroform



Chloroform

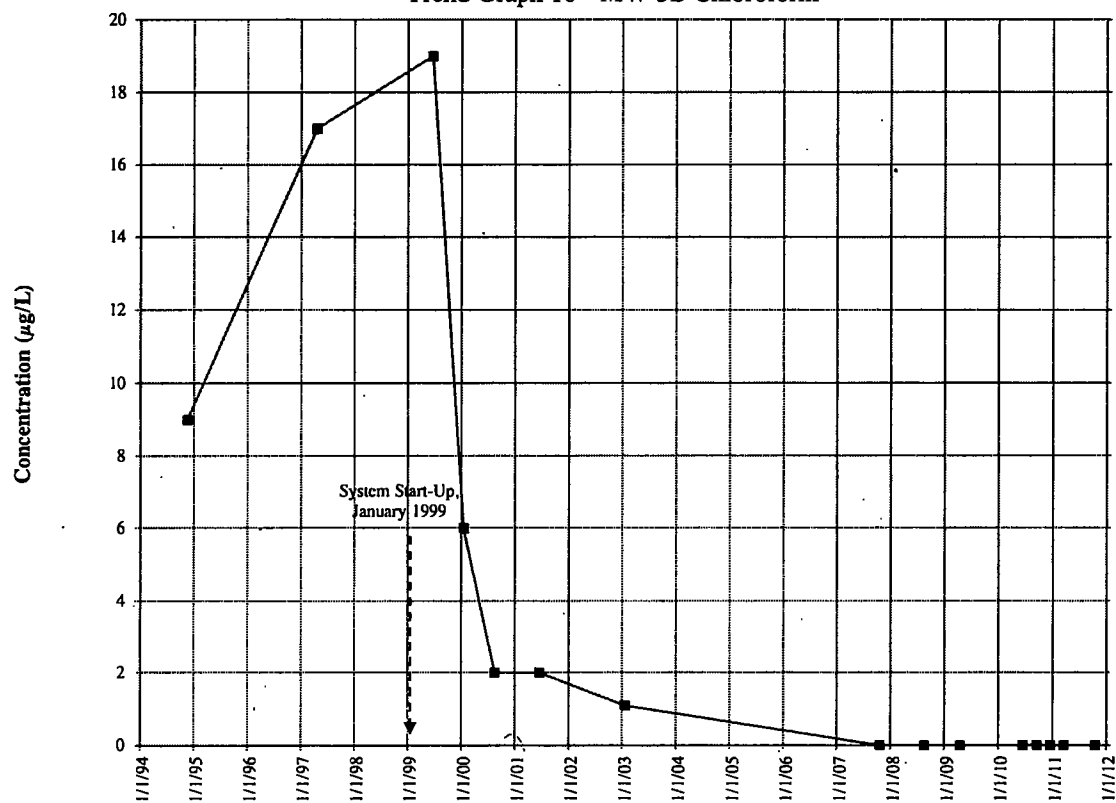
6/24/94	25
4/29/97	30
10/13/07	0.33
10/13/07	0.30
8/15/08	5 U
4/23/09	5.0 U
6/20/10	0.50 U
9/24/10	1.0 U
12/17/10	0.50 U
3/25/11	0.5 U
10/1/11	1.0 U

Trend Graph 15 - MW-5B Carbon Tetrachloride



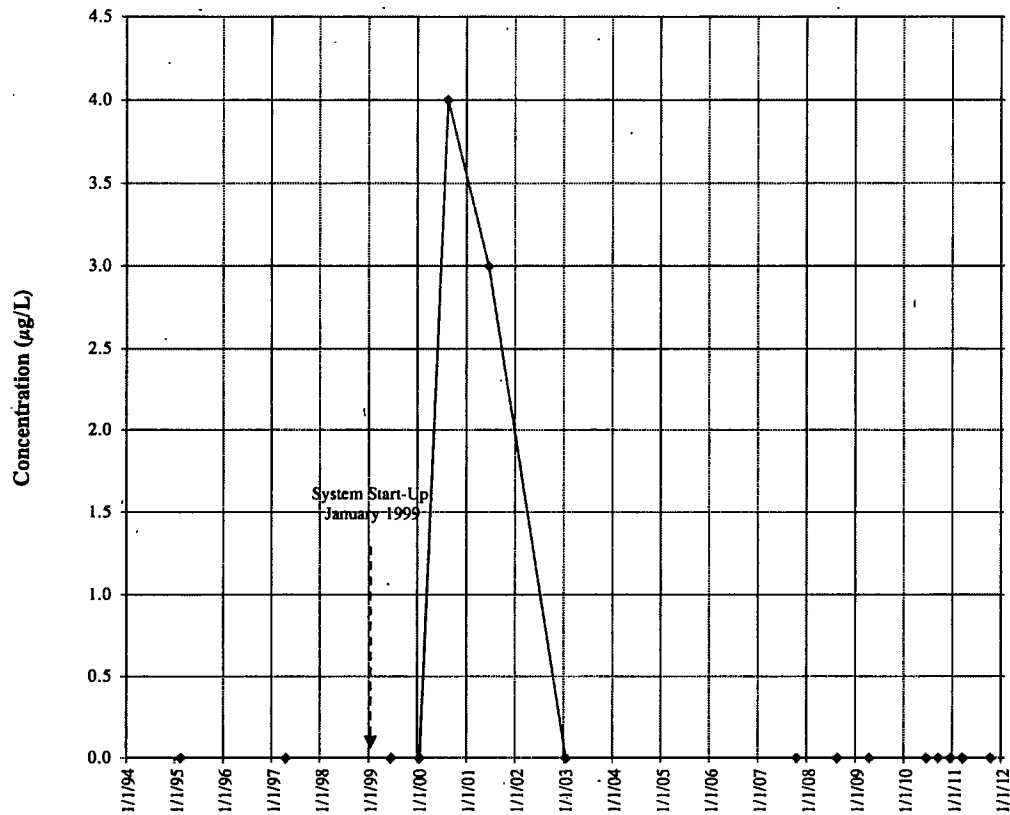
Carbon Tetrachloride	
11/21/94	5,400
12/1/94	2,017
2/14/95	4,500
4/29/97	15,000
6/25/99	1,700
1/15/00	860
8/13/00	960
6/6/01	480
1/22/03	160
10/13/07	33
8/15/08	64
4/23/09	200
6/20/10	24
9/23/10	12
9/23/10	13
12/17/10	33
12/17/10	30
3/25/11	100
3/25/11	110
10/1/11	19 J

Trend Graph 16 - MW-5B Chloroform



Chloroform	
11/21/94	9
12/1/94	NA
2/14/95	NA
4/29/97	17
6/25/99	19
1/15/00	6
8/13/00	2
6/6/01	2
1/22/03	1.1
10/13/07	0.5 U
8/15/08	5 U
4/23/09	5.0 U
6/20/10	0.50 U
9/23/10	1.0 U
9/23/10	1.0 U
12/17/10	0.50 U
12/17/10	0.50 U
3/25/11	0.63 U
3/25/11	0.68 U
10/1/11	1.0 U

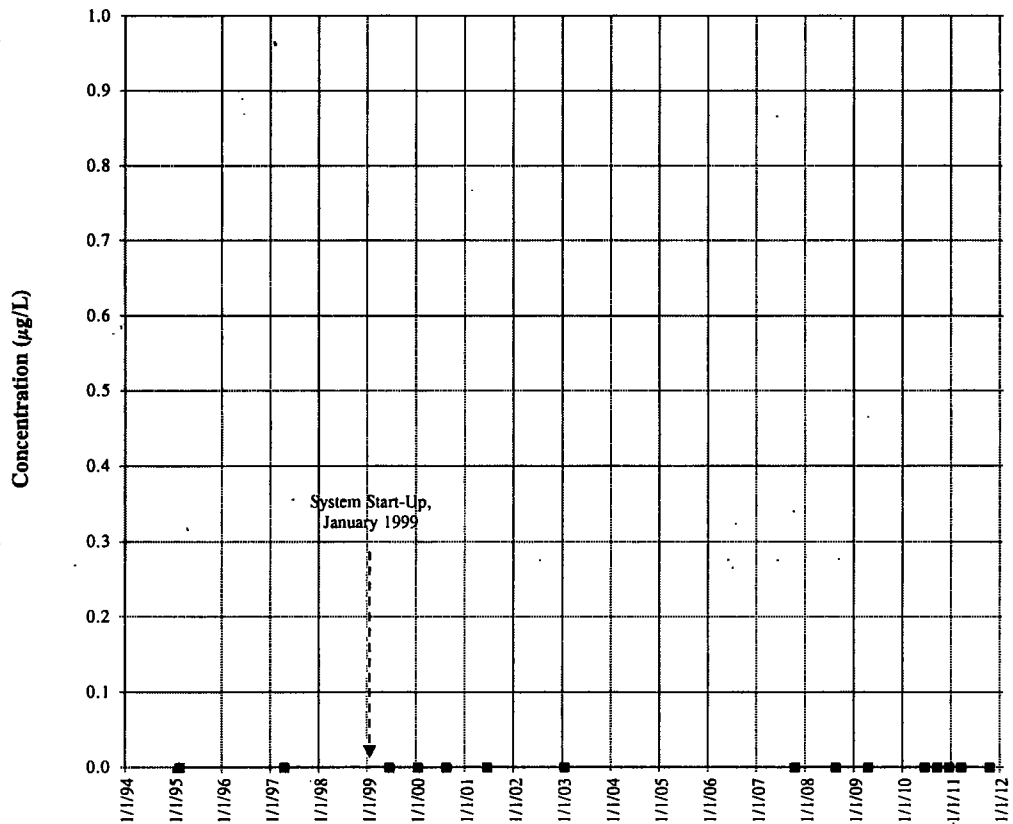
Trend Graph 17 - MW-5D Carbon Tetrachloride



Carbon Tetrachloride

2/14/95	ND
4/29/97	ND
6/25/99	ND
1/15/00	ND
8/13/00	4
6/6/01	3
1/22/03	ND
10/13/07	0.50 U
8/15/08	0.5 U
4/23/09	1.0 U
6/20/10	NS
9/24/10	1.0 U
12/17/10	0.50 U
3/25/11	0.5 U
10/1/11	1.0 UJ

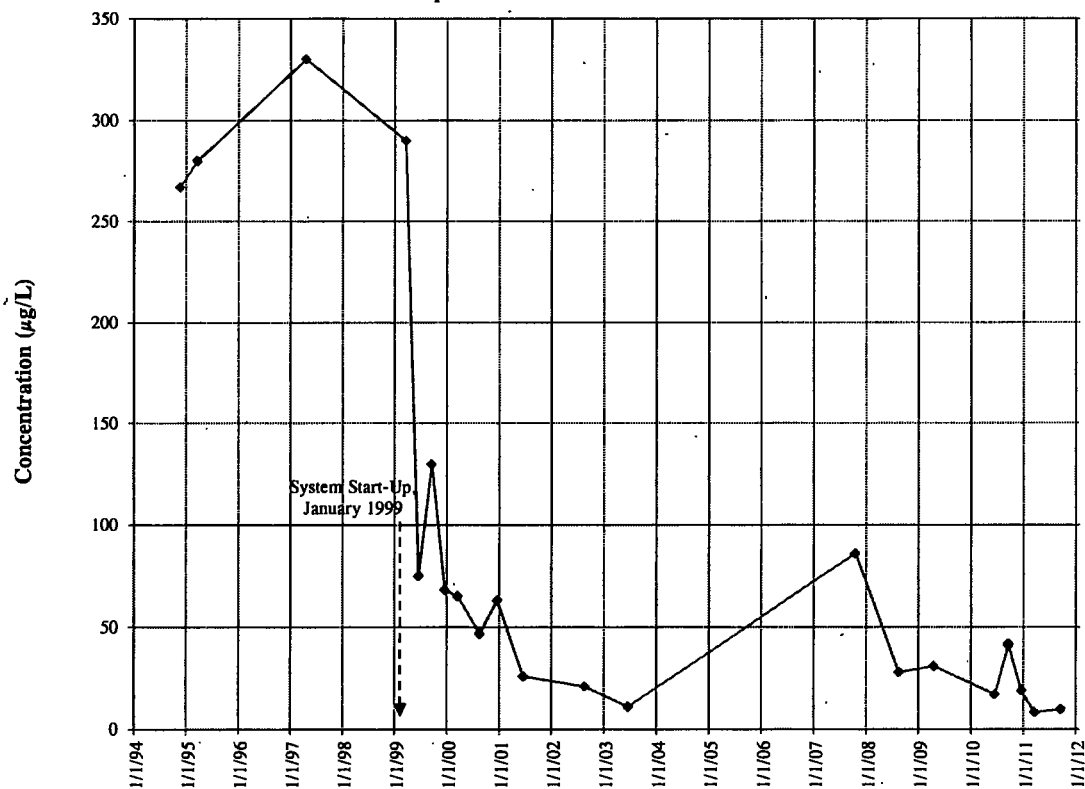
Trend Graph 18 - MW-5D Chloroform



Chloroform

2/14/95	ND
4/29/97	ND
6/25/99	ND
1/15/00	ND
8/13/00	ND
6/6/01	ND
1/22/03	ND
10/13/07	0.50 U
8/15/08	0.5 U
4/23/09	1.0 UJ
6/20/10	NS
9/24/10	1.0 U
12/17/10	0.50 U
3/25/11	0.5 U
10/1/11	1.0 U

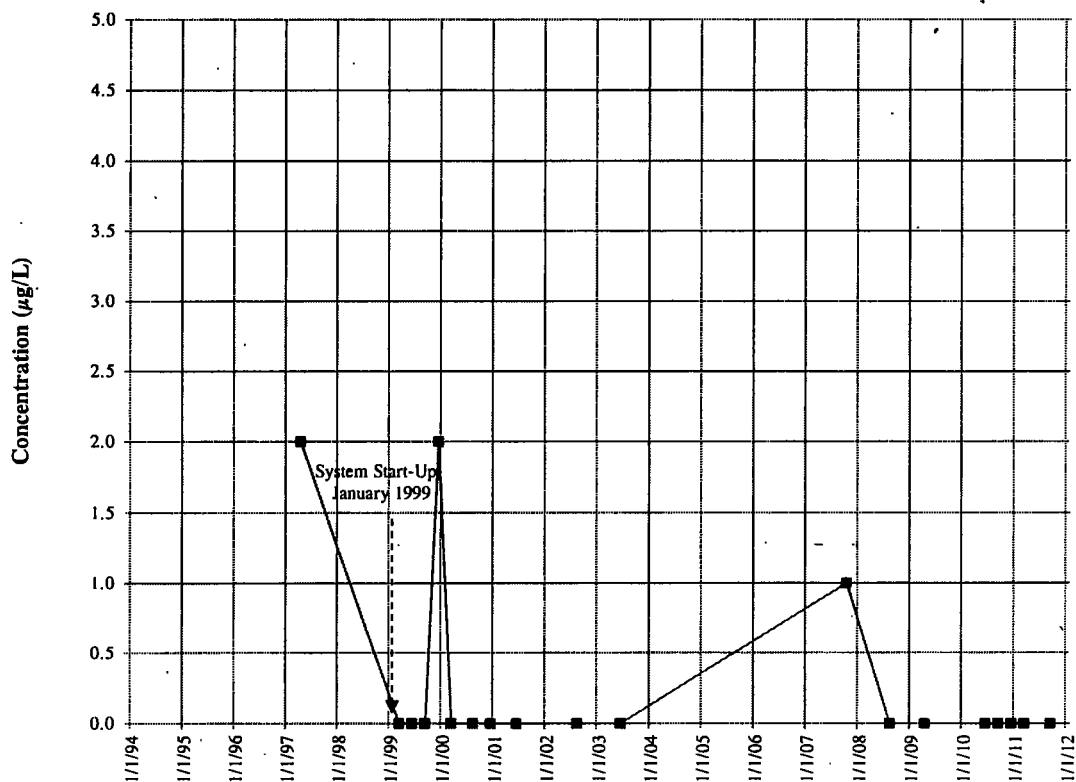
Trend Graph 19 - MW-6A Carbon Tetrachloride



Carbon Tetrachloride

11/30/94	267
3/16/95	280
4/29/97	330
3/26/99	290
6/22/99	75
9/29/99	130
12/14/99	68
3/25/00	65
8/11/00	47
12/19/00	63
6/4/01	26
8/12/02	21
6/24/03	11
10/12/07	86
8/14/08	28
4/21/09	31
6/20/10	17
9/24/10	41
9/24/10	42
12/17/10	19
3/26/11	8.4
9/28/11	9.8

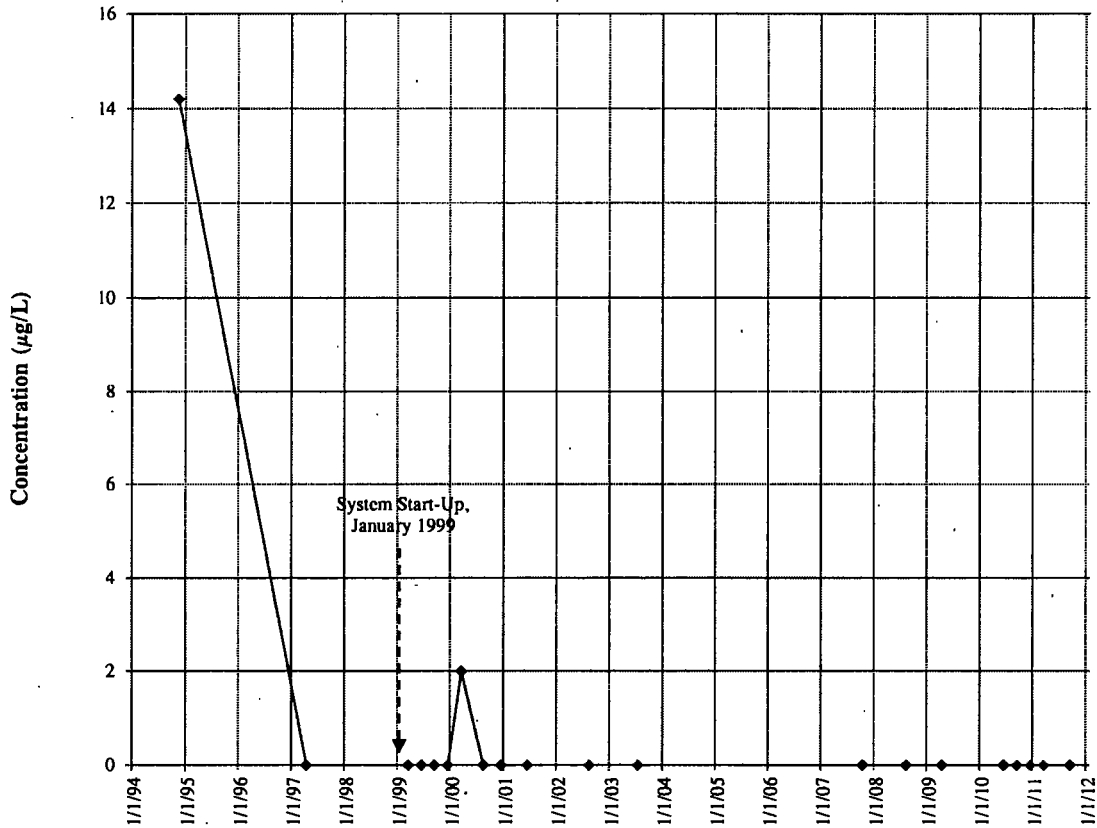
Trend Graph 20 - MW-6A Chloroform



Chloroform

11/30/94	NA
3/16/95	NA
4/29/97	2
3/26/99	0
6/22/99	0
9/29/99	0
12/14/99	2
3/25/00	0
8/11/00	0
12/19/00	0
6/4/01	0
8/12/02	0
6/24/03	0
10/12/07	1
8/14/08	0.5 U
4/21/09	5 U
6/20/10	0.50 U
9/24/10	1.0 U
9/24/10	1.0 U
12/17/10	0.50 U
3/26/11	0.5 U
9/28/11	1.0 U

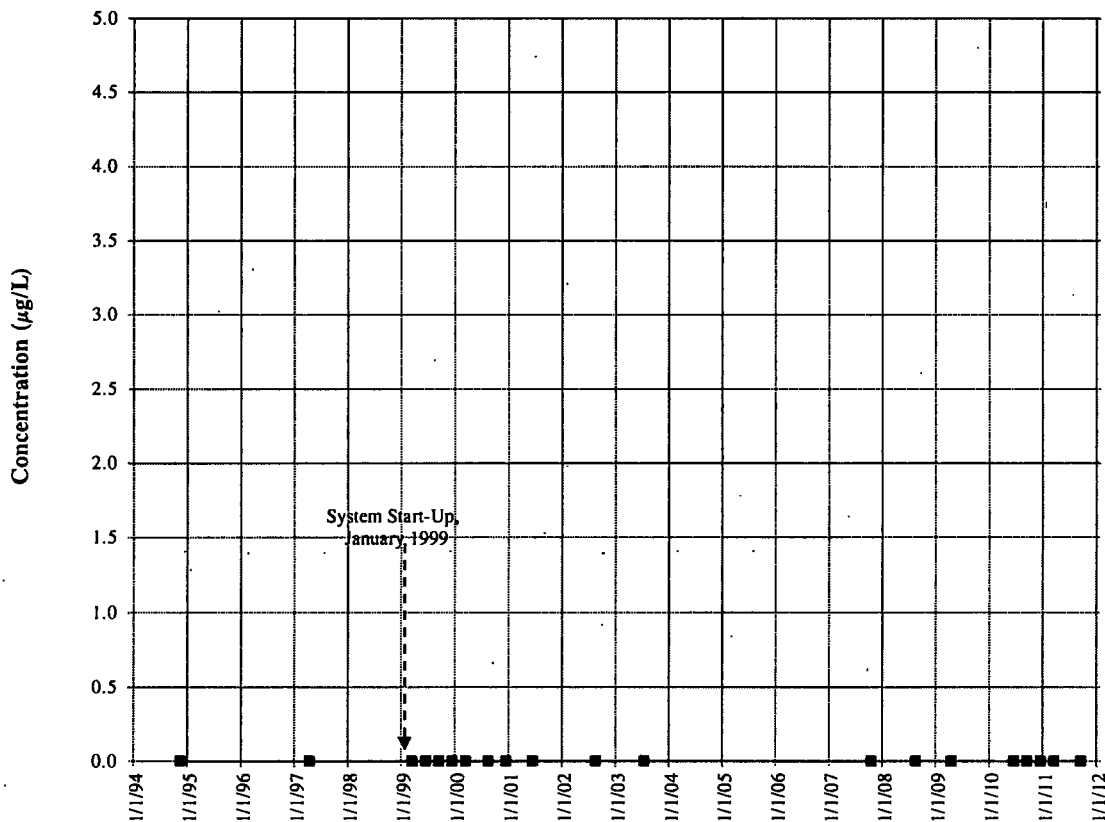
Trend Graph 21 - MW-6D Carbon Tetrachloride



Carbon Tetrachloride

11/30/94	14.2
4/29/97	0
3/25/99	0
6/22/99	0
9/29/99	0
12/14/99	0
3/25/00	2
8/11/00	0
12/19/00	0
6/4/01	0
8/12/02	0
7/16/03	0
10/12/07	0.50 U
8/14/08	0.5 U
4/21/09	1.0 U
6/20/10	0.50 U
9/24/10	1.0 U
12/17/10	0.50 U
3/26/11	0.5 U
9/29/11	1.0 U

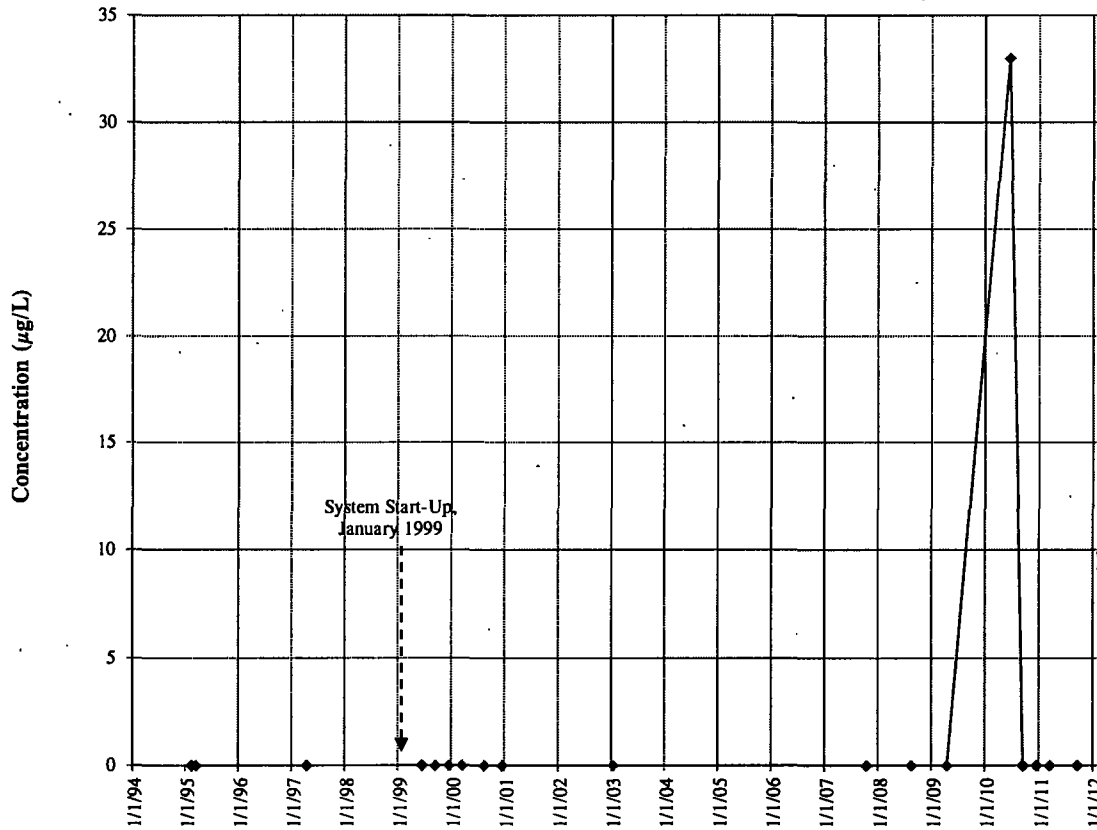
Trend Graph 22 - MW-6D Chloroform



Chloroform

11/30/94	NA
4/29/97	0
3/25/99	0
6/22/99	0
9/29/99	0
12/14/99	0
3/25/00	0
8/11/00	0
12/19/00	0
6/4/01	0
8/12/02	0
7/16/03	0
10/12/07	0.50 U
8/14/08	0.5 U
4/21/09	1.0 U
6/20/10	0.50 U
9/24/10	1.0 U
12/17/10	0.50 U
3/26/11	0.5 U
9/29/11	1.0 U

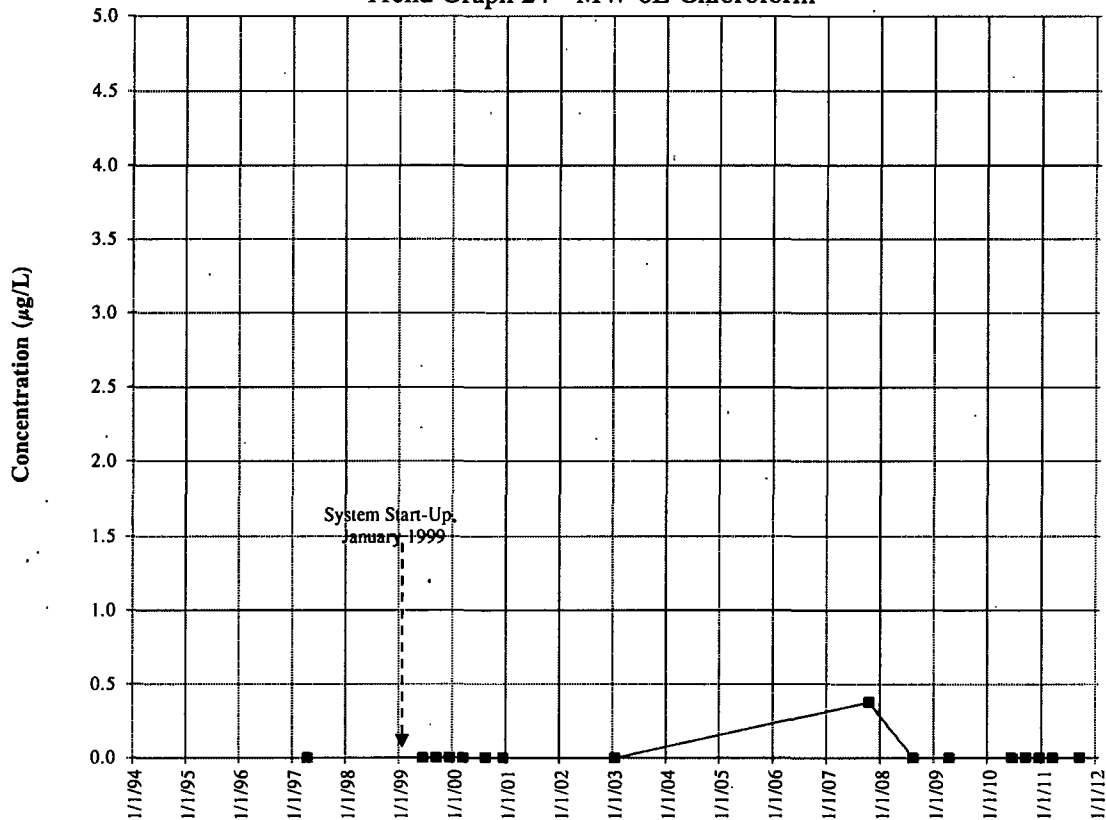
Trend Graph 23 - MW-6E Carbon Tetrachloride



Carbon Tetrachloride

2/14/95	0
3/16/95	0
4/29/97	0
6/22/99	0
9/28/99	0
12/14/99	0
3/25/00	0
8/11/00	0
12/19/00	0
1/21/03	0
10/10/07	0.50 U
8/14/08	0.5 U
4/21/09	1.0 U
6/20/10	33
9/24/10	1.0 U
12/17/10	0.50 U
3/26/11	0.5 U
9/29/11	1.0 U

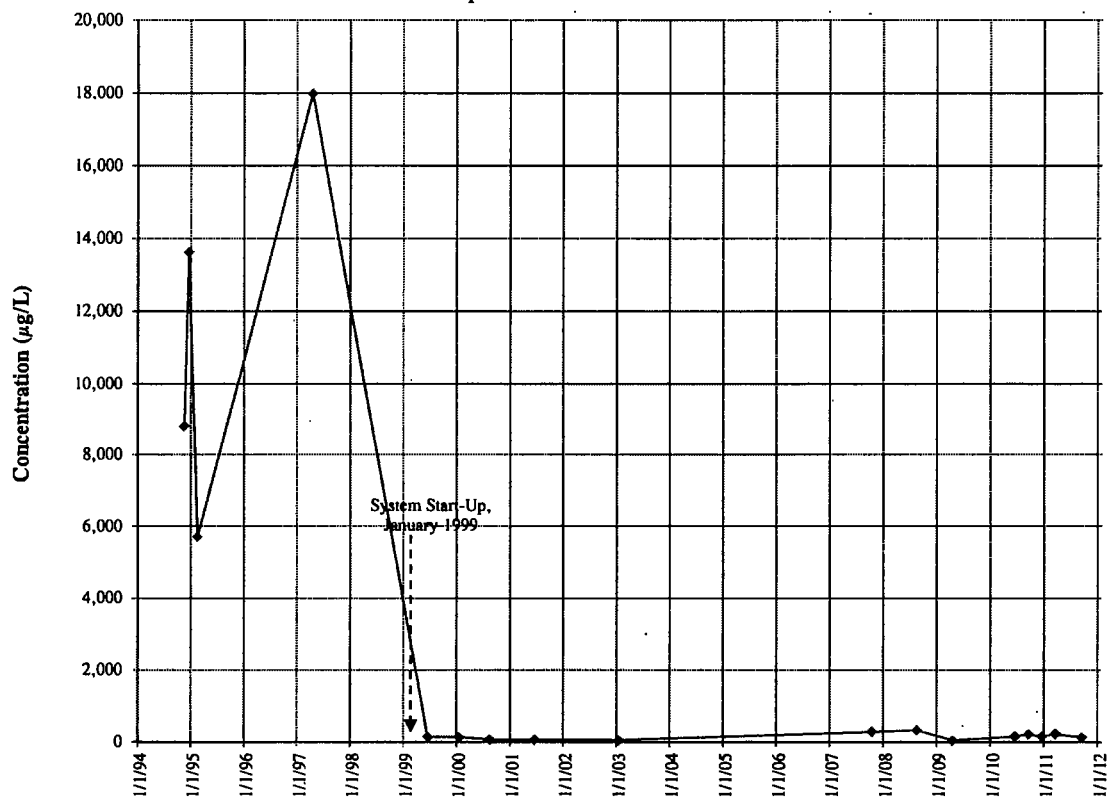
Trend Graph 24 - MW-6E Chloroform



Chloroform

2/14/95	NA
3/16/95	NA
4/29/97	0
6/22/99	0
9/28/99	0
12/14/99	0
3/25/00	0
8/11/00	0
12/19/00	0
1/21/03	0
10/10/07	0.38
8/14/08	0.5 U
4/21/09	1.0 U
6/20/10	0.50 U
9/24/10	1.0 U
12/17/10	0.50 U
3/26/11	0.5 U
9/29/11	1.0 U

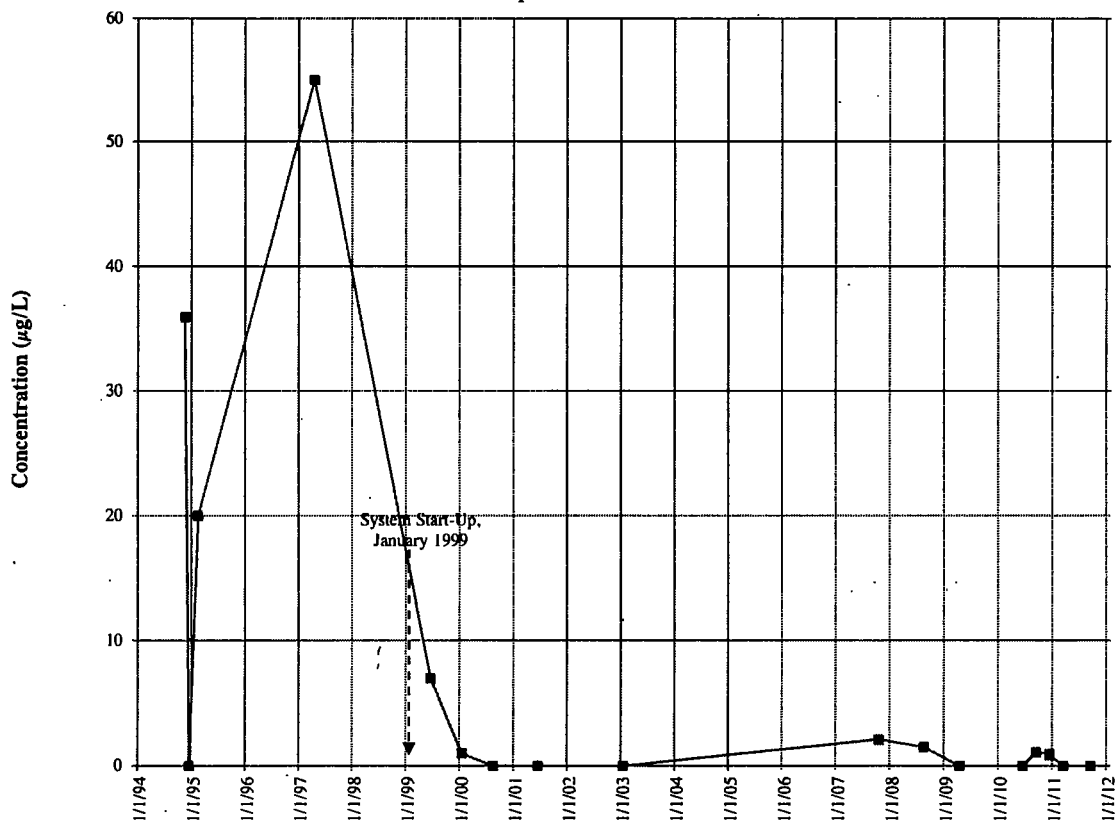
Trend Graph 25 - MW-13C Carbon Tetrachloride



Carbon Tetrachloride

11/19/94	8,800
12/2/94	13,631
2/15/95	5,700
4/29/97	18,000
6/24/99	140
1/22/00	140
8/13/00	73
6/6/01	62
1/22/03	52
10/13/07	290
8/15/08	340
4/23/09	44
6/18/10	160
9/25/10	220
12/19/10	160
12/19/10	150
3/26/11	240
3/26/11	220
9/29/11	130
9/29/11	130

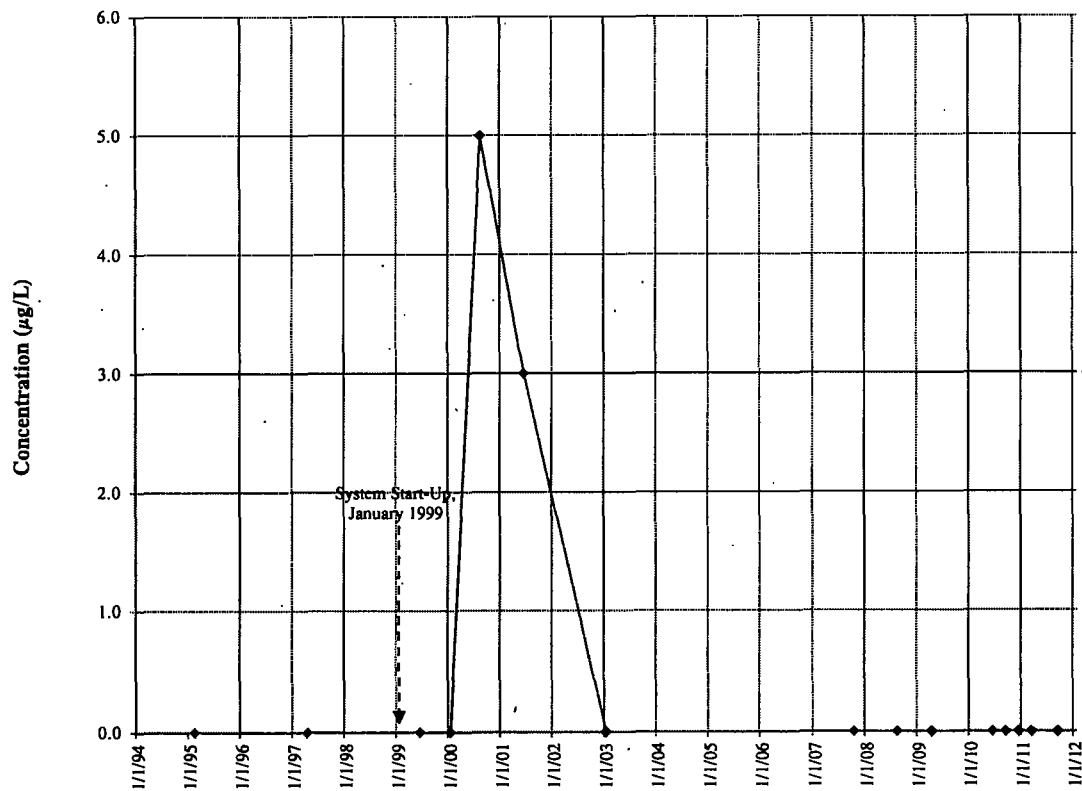
Trend Graph 26 - MW-13C Chloroform



Chloroform

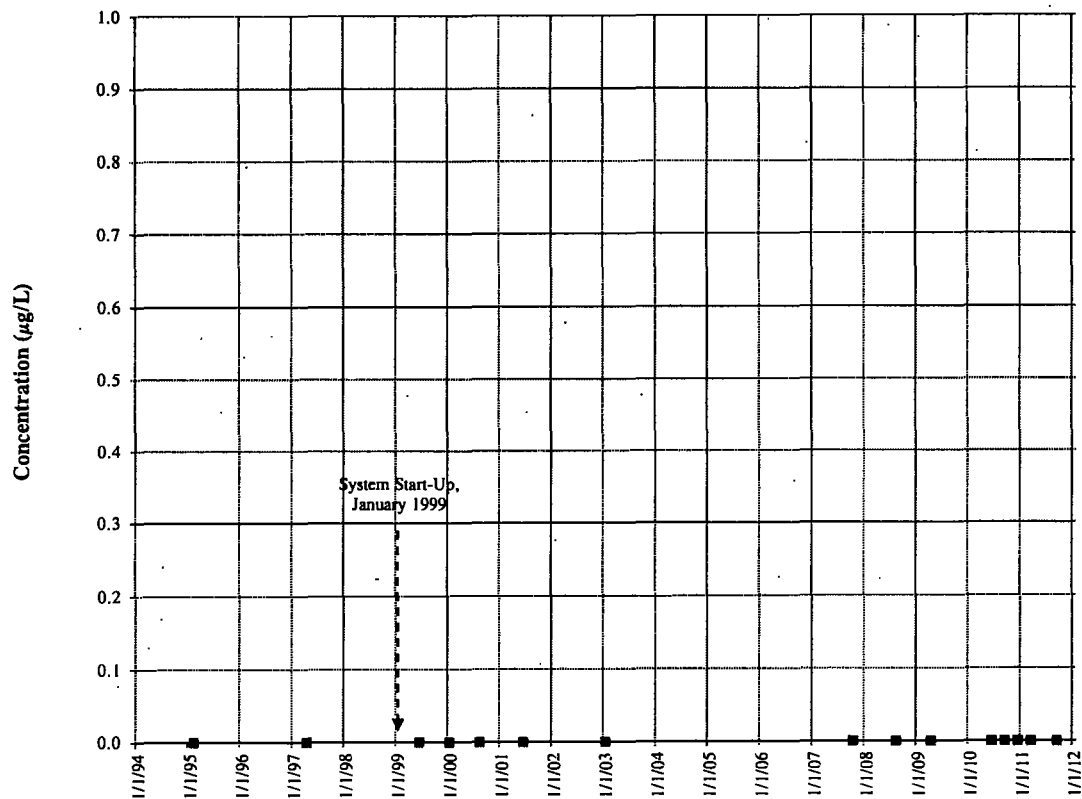
11/19/94	36
12/2/94	NA
2/15/95	20
4/29/97	55
6/24/99	7
1/22/00	1
8/13/00	ND
6/6/01	ND
1/22/03	ND
10/13/07	2.1
8/15/08	1.5
4/23/09	5.0 U
6/18/10	0.50 U
9/25/10	1.1
12/19/10	0.94 J
12/19/10	0.85
3/26/11	1.6 U
3/26/11	1.7 U
9/29/11	1.0 U
9/29/11	1.0 U

Trend Graph 27 - MW-13E Carbon Tetrachloride



Carbon Tetrachloride	
2/14/95	ND
4/29/97	ND
6/23/99	ND
1/22/00	ND
8/13/00	5
6/6/01	3
1/22/03	ND
10/13/07	0.50 U
8/15/08	0.5 U
4/23/09	1.0 U
6/18/10	0.50 U
9/25/10	1.0 U
12/19/10	0.50 U
3/26/11	0.5 U
9/29/11	1.0 UJ

Trend Graph 28 - MW-13E Chloroform



Chloroform	
2/14/95	ND
4/29/97	ND
6/23/99	ND
1/22/00	ND
8/13/00	ND
6/6/01	ND
1/22/03	ND
10/13/07	0.50 U
8/15/08	0.5 U
4/23/09	1.0 UJ
6/18/10	0.50 U
9/25/10	1.0 U
12/19/10	0.50 U
3/26/11	0.5 U
9/29/11	1.0 UJ

ATTACHMENT 4

TABULATED ANALYTICAL DATA

- **September 2010**
- **December 2010**
- **March 2011**
- **September 2011**

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SEPTEMBER 2010

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Table A4.1
Analytical Results - September 2010
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5068-31	5068-27	5068-12	5068-10	5068-10-FD	5068-13	5068-9	5068-30	5068-29	5068-16	5068-14	5068-14-FD	5068-17	5068-20	5068-20-FD	5068-19	5068-18	5068-23	5068-28	5068-22	
Sample Location		MW-1A	MW-2A	MW-3A	MW-3B	MW-3B	MW-3D	MW-3E	MW-4A	MW-4B	MW-5A	MW-5B	MW-5B	MW-5D	MW-6A	MW-6A	MW-6D	MW-6E	MW-7A	MW-8A	MW-7B	
Operable Unit		OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	
Sample Collection Date		09/26/2010	09/25/2010	09/23/2010	09/23/2010	09/23/2010	09/23/2010	09/23/2010	09/26/2010	09/26/2010	09/24/2010	09/23/2010	09/23/2010	09/24/2010	09/24/2010	09/24/2010	09/24/2010	09/24/2010	09/24/2010	09/25/2010	09/24/2010	
Analyte	PRG ¹																					
Field Measurements (units)																						
Conductivity (mS/cm)	NE	0.848	0.734	0.932	0.967	0.967	0.767	0.563	0.943	0.936	0.879	0.906	0.906	0.611	0.841	0.841	0.518	0.332	0.745	1.32	0.65	
Oxidation Reduction Potential (mV)	NE	179	178	134	133	133	134	56	162	179	169	147	147	153	155	155	143	113	162	158	163	
pH (SU)	NE	7.11	6.84	7.15	7.09	7.09	7.23	7.75	7.41	7.09	7.19	7.29	7.29	7.25	7.16	7.16	7.28	7.39	7.13	7.37	6.94	
Temperature (Degrees C)	NE	10.6	12.02	13.95	11.26	11.26	12.59	13.4	10.45	10.27	9.92	11.54	11.54	10.6	13.47	13.47	14.79	12.06	13.93	13.73	20.99	
Total Dissolved Oxygen (mg/L)	NE	4.91	7.14	5.29	8.63	8.63	8.10	3.89	3	9.6	5.49	4.09	4.09	7.57	2.87	2.87	5.39	2.61	2.25	5.42	4.28	
Turbidity (NTU)	NE	0.2	0.0	0.0	0.0	0.0	0.0	0.0	22.2	2	0.0	96	96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Volatile Organic Compounds (µg/L)																						
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,1,2,2-Tetrachloroethane	0.066 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,1,2-Trichlorotrifluoroethane	53,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,1-Dichloroethane	2.4 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,1-Dichloroethene	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,2,3-Trichlorobenzene	5.2 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,2,4-Trichlorobenzene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,2-Dibromo-3-Chloropropane	0.2	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	
1,2-Dibromoethane	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,2-Dichlorobenzene	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,3-Dichlorobenzene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
1,4-Dichlorobenzene	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
2-Butanone (methyl ethyl ketone)	4,900 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	
2-Hexanone	34 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	
4-Methyl-2-Pentanone	1,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	
Acetone	12,000 ²	5.0 U	5.0 U	6.1	5.0 U	5.0 U	5.0 U	570	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Bromodichloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Bromoform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Bromomethane	7 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Carbon Disulfide	720 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Carbon Tetrachloride	5	1.0 U	1.0 U	3.9	180	180	1.0 U	1.0 U	4.3	940	9.8	12	13	1.0 U	41	42	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Chlorobenzene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Chloroethane (ethyl chloride)	21,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Chloroform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Chloromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
cis-1,2-Dichloroethene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
cis-1,3-Dichloropropene	0.41 ³	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Cyclohexane	13,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	
Dibromochloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U																

Table A4.1
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EPA Lab ID		5068-1	5068-26	5068-24	5068-37	5068-35	5068-36	5068-34	5068-33	5068-32	5068-7	5068-7-FD	5068-6	5068-5	5068-4	5068-3	5068-2	5067-36	5067-35	5067-26	5067-10	5067-11
Sample Location		MW-9A	MW-13C	MW-13E	MW-19A	MW-19C	MW-20A	MW-20C	MW-20D	MW-20E	MW-30A	MW-30A	MW-30C	MW-30D	MW-30E	MW-31A	MW-31C	MW-10A	MW-10B	MW-11A	MW-12A	MW-12D
Operable Unit		OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI
Sample Collection Date		09/22/2010	09/25/2010	09/25/2010	09/27/2010	09/27/2010	09/27/2010	09/26/2010	09/26/2010	09/26/2010	09/22/2010	09/22/2010	09/22/2010	09/22/2010	09/22/2010	09/22/2010	09/22/2010	09/27/2010	09/27/2010	09/25/2010	09/23/2010	09/23/2010
Analyte	PRG ¹																					
Field Measurements (units)																						
Conductivity (mS/cm)	NE	0.946	0.693	0.584	1.06	0.799	0.816	0.68	0.639	0.571	0.811	0.811	0.715	0.743	0.699	0.898	0.372	0.973	0.856	0.441	0.844	0.409
Oxidation Reduction Potential (mV)	NE	175	176	190	80	92	-135	86	-183	86	-115	-115	-70	-214	-200	-111	-23	167	145	149	112	110
pH (SU)	NE	8.11	7.51	7.42	7.25	6.99	7.23	7.26	6.96	7.85	7.24	7.24	8.16	6.78	7.78	6.91	7.26	7.17	7.18	8.17	6.87	6.95
Temperature (Degrees C)	NE	16.5	11.49	13.75	19.5	9.55	16.2	11.74	11.69	11.54	17.18	17.18	18.79	17.01	19.5	21.25	20.92	12.47	11.08	24.89	22.07	20.80
Total Dissolved Oxygen (mg/L)	NE	0.33	15.59	13.02	5.57	3.18	0.35	6.88	0.01	6.42	4.40	4.40	10.12	2.50	10.13	0.57	4.62	8.29	8.75	3.86	4.93	3.9
Turbidity (NTU)	NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0	0.0	0.0	0.0	5.1	22.2
Volatile Organic Compounds (µg/L)																						
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.066 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	5.2 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Table A4.1
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Hastings, NE

[illegible]

Table A4.1
Analytical Results - September 2010
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EPA Lab ID		5067-41	5067-22	5067-20	5067-20-FD	5067-15	5067-14	5067-13	5067-34	5067-32	5067-32-FD	5067-31	5067-25	5067-24	5067-23
Sample Location		MW-45D	MW-46D1	MW-46D2	MW-46D2	MW-104A	MW-104C	MW-104D	MW-105A	MW-105C	MW-105C	MW-105D	MW-106A	MW-106C	MW-106D
Operable Unit		OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2
Sample Collection Date		09/27/2010	09/25/2010	09/24/2010	09/24/2010	09/23/2010	09/23/2010	09/23/2010	09/27/2010	09/26/2010	09/26/2010	09/26/2010	09/25/2010	09/25/2010	09/25/2010
Analyte	PRG ¹														
Field Measurements (units)															
Conductivity (mS/cm)	NE	0.393	0.732	0.423	0.423	0.894	0.346	0.286	0.915	0.566	0.566	0.345	0.62	0.433	0.283
Oxidation Reduction Potential (mV)	NE	167	191	137	137	105	58	92	127	161	161	134	155	156	124
pH (SU)	NE	7.87	8.78	7.0	7.0	6.70	7.08	7.13	7.15	6.59	6.59	7.17	7.13	6.84	8.73
Temperature (Degrees C)	NE	24.55	21.70	29.71	29.71	18.36	25.04	20.32	12.84	20.14	20.14	25.29	19.19	19.40	24.12
Total Dissolved Oxygen (mg/L)	NE	5.86	7.21	6.02	6.02	4.56	4.62	3.44	5.42	4.29	4.29	3.82	5.6	5.08	5.24
Turbidity (NTU)	NE	43.6	0.0	30.8	30.8	0.0	0.8	0.4	7.8	0.0	0.0	0.0	0.0	0.0	1.3
Volatile Organic Compounds (µg/L)															
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.066	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	53,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	5.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone (methyl ethyl ketone)	4,900	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	34	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	1,000	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	12,000	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	720	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	110	65	59	0.50 U	0.50 U	0.50 U	0.50 U	86	90	0.50 U	0.50 U	0.50 U	0.50 U
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane (ethyl chloride)	21,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	80	0.50 U	4	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.7	0.81	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	190	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	0.41	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	13,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	190	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene (cumene)	390	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
m,p-Xylene	10,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	16,000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.	

Notes:

Bolded results indicate a detection.

Shaded results indicate that the reported result is greater than the PRG.

¹ PRGs are EPA MCLs unless otherwise noted.

² EPA Regional Screening Levels for Residential Tapwater, November 2011.

³ combined cis+trans RSL value

⁴ MCL for Total Xylenes

*C - degrees Celsius

ID - identification

J - the reported value is an estimate.

MCL - maximum contaminant level

µg/L - micrograms per liter

mg/L - milligrams per liter

ms/cm - millisiemens per centimeter

NA - not analyzed

NTU - nephelometric turbidity units

RSL - regional screening level

U - The analyte was not detected at or above the reporting limit.

UJ - The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

DECEMBER 2010

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Table A4.2
Analytical Results - December 2010
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5188-9	5188-12	5188-29	5188-28	5188-30	5188-27	5188-35	5188-33	5188-33-FD	5188-23	5188-21	5188-21-FD	5188-20	5188-26	5188-25	5188-24	5188-14	5188-13	5188-11	5188-10	5188-37	5188-37-FD
Sample Location		MW-1A	MW-2A	MW-3A	MW-3B	MW-3D	MW-3E	MW-4A	MW-4B	MW-4B	MW-5A	MW-5B	MW-5B	MW-5D	MW-6A	MW-6D	MW-6E	MW-7A	MW-7B	MW-8A	MW-9A	MW-13C	MW-13C
Operable Unit		OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1
Sample Collection Date		12/15/2010	12/15/2010	12/18/2010	12/18/2010	12/18/2010	12/18/2010	12/18/2010	12/19/2010	12/19/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/17/2010	12/16/2010	12/16/2010	12/15/2010	12/15/2010	12/19/2010	12/19/2010
Analyte	PRG ¹																						
Field Measurements (units)																							
Conductivity (mS/cm)	NE	0.818	0.753	0.937	0.923	0.704	0.723	0.93	0.926	0.926	0.866	0.919	0.919	0.596	0.911	0.563	0.347	0.85	0.883	1.37	0.931	0.644	0.644
Oxidation Reduction Potential (mV)	NE	123	154	148	136	156	65	164	156	156	152	171	171	195	142	141	136	162	161	134	128	159	159
pH (SU)	NE	7.11	6.89	7.28	7.18	7.29	7.88	7.09	6.83	6.83	7.3	7.15	7.15	7.02	7.14	7.36	7.56	7.2	7.06	7.3	7.38	7.36	7.36
Temperature (Degrees C)	NE	10.38	10.4	8.19	10.55	10.67	9.18	9.27	10.89	10.89	8.68	10.08	10.08	9.02	9.98	8.92	9.01	10.66	10.39	11.23	10.19	8.85	8.85
Total Dissolved Oxygen (mg/L)	NE	4.21	3.22	4.29	7.72	2.82	7.54	6.62	6.95	8.95	5.82	5.23	5.23	7.17	5.09	6.96	7.72	2.87	5.59	3.48	4.55	9.44	9.44
Turbidity (NTU)	NE	9.6	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	8.9	8.9	4.3	17.4	13.8	10.2	1.6	0.8	1.2	1.2	0.0	0.0
Volatile Organic Compounds (µg/L)																							
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.066 ²	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 ²	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	5.2 ²	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	39 U	39 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	34 ²	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	39 U	39 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	1,000 ²	5.0 U	5.0 U	5.0 U	10 U	5.0 U	5.0 U	5.0 U	39 U	39 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	12,000 ²	5.0 U	5.0 U	5.0 U	10 U	5.0 U	1500	5.0 U	39 U	39 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	83 ²	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	7 ²	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	720 ²	0.50 U	0.50 U	0.50 U	1.0 U	0.50 U	0.50 U	0.50 U	3.9 U	3.9 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	0.50 U	1.6	350	0.50 U	0.50 U	6.8	1300	1300	11	33	30										

Table A4.2
Analytical Results - December 2010
Garvey Elevator Site
Hastings, NE

[illegible]

Table A4.2
Analytical Results - December 2010
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5187-37	5187-36	5187-5	5187-7	5187-6	5187-9	5187-10	5187-8	5187-33	5187-34	5187-3	5187-4	5187-39	5187-38	5187-1	5187-2	5187-14	5187-14-FD	5187-16	5187-27	5187-26	5187-32
Sample Location		MW-16A	MW-16C	MW-17A	MW-17C	MW-17D	MW-18A	MW-18C	MW-18D	MW-41D1	MW-41D2	MW-42D	MW-42E	MW-43D	MW-43E	MW-44D	MW-44E	MW-45C	MW-45C	MW-45D	MW-46D1	MW-46D2	MW-104A
Operable Unit		OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2
Sample Collection Date		12/20/2010	12/20/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/15/2010	12/19/2010	12/19/2010	12/14/2010	12/14/2010	12/20/2010	12/20/2010	12/14/2010	12/14/2010	12/16/2010	12/16/2010	12/16/2010	12/18/2010	12/18/2010	12/19/2010
Analyte	PRG ¹																						
Field Measurements (units)																							
Conductivity (mS/cm)	NE	1.02	0.864	0.874	0.676	0.296	0.407	0.729	0.538	0.713	0.317	0.505	0.427	0.585	0.419	0.397	0.337	0.693	0.693	0.562	0.627	0.503	0.876
Oxidation Reduction Potential (mV)	NE	182	182	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)	NE	6.89	6.74	7.26	7.34	7.45	6.53	7.13	7.31	6.89	7.08	7.00	7.20	7.12	7.19	7.25	7.48	7.33	7.33	7.39	7.11	7.28	6.87
Temperature (Degrees C)	NE	9.12	9.2	8.91	9.81	8.94	10.49	10.31	11.06	9.79	9.43	10.92	9.85	6.4	7.17	8.75	9.95	11.07	11.07	9.68	12.93	9.6	11.38
Total Dissolved Oxygen (mg/L)	NE	7.9	5.68	7.94	7.52	3.72	7.45	6.3	6.59	7	2.99	5.96	3.21	7	8.49	4.44	3.76	9.07	9.07	4.21	1.82	5.79	6.39
Turbidity (NTU)	NE	0	0	0	0	0	0	0	1.2	12.7	18.4	2	32.6	5.1	5.6	19.1	1.6	25	25	0.5	49.1	12.5	0
Volatile Organic Compounds (µg/L)																							
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.066 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	5.2 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.4 U	0.50 U	0.50 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	15 U	5.0 U	5.0 U
2-Hexanone	34 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	15 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	1,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	15 U	5.0 U	5.0 U
Acetone	12,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	15 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Bromochloromethane	83 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Bromomethane	7 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Carbon Disulfide	720 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	0.50 U	0.85	37	0.50 U	0.50 U	9.7	23	0.50 U	1.2	15 J	50	0.50 U	1.0	13	0.50 U	0.50 U	0.50 U	0.50 U	470	150	0.50 U
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Chloroethane (ethyl chloride)	21,000 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Chloroform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.9	1	0.50 U
Chloromethane	190 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	0.41 ³	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Cyclohexane	13,000 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Dichlorodifluoromethane	190 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Isopropylbenzene (cumene)	390 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
m,p-Xylene	10,000 ⁴	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Methyl Acetate	16,000 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Methyl tert-butyl ether	12 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.4 U	0.50 U	0.50 U
Methylcyclohexane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.5 U	0.50 U	0.50 U
Methylene Chloride	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U																	

Table A4.2
Analytical Results - December 2010
Garvey Elevator Site
Hastings, NE

EPA Lab ID	5187-30	5187-30-FD	5187-29	5187-25	5187-24	5187-22	5187-22-FD	5187-11	5187-13	5187-12	5188-32	5188-31
Sample Location	MW-104C	MW-104C	MW-104D	MW-105A	MW-105C	MW-105D	MW-105D	MW-106A	MW-106C	MW-106D	Rolls New Well	Rolls Old Well
Operable Unit	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2
Sample Collection Date	12/19/2010	12/19/2010	12/19/2010	12/18/2010	12/17/2010	12/17/2010	12/17/2010	12/16/2010	12/16/2010	12/16/2010	12/18/2010	12/18/2010
Analyte	PRG ¹											
Field Measurements (units)												
Conductivity (mS/cm)	NE	0.435	0.435	0.347	0.879	0.803	0.465	0.465	0.844	0.564	0.383	NA
Oxidation Reduction Potential (mV)	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)	NE	7.09	7.09	6.48	7.08	6.88	7.16	7.16	7.11	7.04	7.31	NA
Temperature (Degrees C)	NE	11.55	11.55	8.67	9.96	10.19	10.71	10.71	10	12.33	9.8	NA
Total Dissolved Oxygen (mg/L)	NE	2.82	2.82	4.02	6.24	6.06	4.59	4.59	7.94	6.92	5.7	NA
Turbidity (NTU)	NE	0	0	0	2.2	0	0	0	0	0	0	NA
Volatile Organic Compounds (µg/L)												
1,1,1-Trichloroethane	200	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2,2-Tetrachloroethane	0.066 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethane	2.4 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,1-Dichloroethene	7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,3-Trichlorobenzene	5.2 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2,4-Trichlorobenzene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromo-3-Chloropropane	0.2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dibromoethane	0.05	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichlorobenzene	600	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloroethane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,2-Dichloropropane	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,3-Dichlorobenzene	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
1,4-Dichlorobenzene	75	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	34 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	1,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	12,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromochloromethane	83 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromodichloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromoform	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Bromomethane	7 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Disulfide	720 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Carbon Tetrachloride	5	0.50 U	0.50 U	0.50 U	0.50 U	170	17	16	0.50 U	0.50 U	0.50 U	36
Chlorobenzene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroethane (ethyl chloride)	21,000 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloroform	80	0.50 U	0.50 U	0.50 U	0.50 U	1.7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Chloromethane	190 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,2-Dichloroethene	70	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
cis-1,3-Dichloropropene	0.41 ³	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cyclohexane	13,000 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dibromochloromethane	80	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Dichlorodifluoromethane	190 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Ethyl Benzene	700	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Isopropylbenzene (cumene)	390 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
m,p-Xylene	10,000 ⁴	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl Acetate	16,000 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methyl tert-butyl ether	12 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylcyclohexane	NE	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Methylene Chloride	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
o-Xylene	10,000 ⁴	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Styrene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Tetrachloroethene	5	9.8	9.9	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Toluene	1000	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,2-Dichloroethene	100	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
trans-1,3-Dichloropropene	0.41 ³	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichloroethene	5	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Trichlorofluoromethane	1,100 ²	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Vinyl Chloride	2	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

Notes:
Bolded results indicate a detection.
Shaded results indicate that the reported result is greater than the PRG.
¹ PRGs are EPA MCLs unless otherwise noted.
² EPA Regional Screening Levels for Residential Tapwater, November 2011.
³ combined cis + trans RSL value
⁴ MCL for Total Xylenes
°C - degrees Celsius
ID - identification
J - the reported value is an estimate.
MCL - maximum contaminant level
µg/L - micrograms per liter
mg/L - milligrams per liter
ms/cm - millisiemens per centimeter
NA - not analyzed
NTU - nephelometric turbidity units
RSL - regional screening level
U - The analyte was not detected at or above the reporting limit.
UJ - The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

MARCH 2011

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Table A4.3
Analytical Results - March 2011
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5282-20	5282-19	5282-32	5282-31	5282-34	5282-33	5282-38	5282-36	5282-36-FD	5282-21	5282-22	5282-22-FD	5282-24	5282-29	5282-28	5282-30	5282-16	5282-15	5282-18	5282-17	5282-26	5282-26-FD
Sample Location		MW-1A	MW-2A	MW-3A	MW-3B	MW-3D	MW-3E	MW-4A	MW-4B	MW-4B	MW-5A	MW-5B	MW-5B	MW-5D	MW-6A	MW-6D	MW-6E	MW-7A	MW-7B	MW-8A	MW-9A	MW-13C	MW-13C
Operable Unit		OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1
Sample Collection Date		03/25/2011	03/25/2011	03/27/2011	03/27/2011	03/27/2011	03/27/2011	03/27/2011	03/27/2011	03/27/2011	03/25/2011	03/25/2011	03/25/2011	03/25/2011	03/26/2011	03/26/2011	03/26/2011	03/24/2011	03/24/2011	03/25/2011	03/24/2011	03/26/2011	03/26/2011
Analyte	PRG ¹																						
Field Measurements (units)																							
Conductivity (mS/cm)	NE	0.547	0.504	0.603	0.646	0.473	0.479	0.609	0.624	0.624	0.601	0.608	0.608	0.385	0.601	0.379	0.219	0.517	0.536	0.844	0.574	0.453	0.453
Oxidation Reduction Potential (mV)	NE	128	136	157	158	90	37	109	107	107	122	126	126	123	124	119	108	94	59	150	113	134	134
pH (SU)	NE	6.72	6.47	6.75	6.66	6.83	7.64	6.96	6.9	6.9	6.86	6.82	6.82	6.87	6.79	6.86	7.15	6.63	6.79	6.8	6.72	7.01	7.01
Temperature (Degrees C)	NE	11.16	9.63	5.47	9.99	9.92	8.17	9.08	10.71	10.71	10.5	10.36	10.36	9.79	8.54	9.11	9	11.66	11.69	9.93	10.25	9.52	9.52
Total Dissolved Oxygen (mg/L)	NE	8.75	8.39	9.79	3.64	8.62	13.18	4.51	11.79	11.79	9.69	9.04	9.04	9.73	7.13	8.35	9.05	9.11	1.78	8.59	8.99	15.26	15.26
Turbidity (NTU)	NE	29.3	0	0	0	0	0	0	0	0	3.9	0	0	1.8	0.1	3.8	0	0	0	0	0	0	0
Volatile Organic Compounds (µg/L)																							
1,1,1-Trichloroethane	200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2,2-Tetrachloroethane	0.066 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	2.4 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,3-Trichlorobenzene	5.2 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2,4-Trichlorobenzene	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromo-3-Chloropropane	0.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dibromoethane	0.05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichlorobenzene	600	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloropropane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,3-Dichlorobenzene	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,4-Dichlorobenzene	75	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone	34 ²	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
4-Methyl-2-Pentanone	1,000 ²	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	12,000 ²	5 U	5 U	5 U	5 U	5 U	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Benzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromochloromethane	83 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromodichloromethane	80	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromoform	80	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Bromomethane	7 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Disulfide	720 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon Tetrachloride	5	0.5 U	0.5 U	1.1	630	0.5 U	0.5 U	12	1400	1400	6.6	100	110	0.5 U	8.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	240	220
Chlorobenzene	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroethane (ethyl chloride)	21,000 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table A4.3
Analytical Results - March 2011
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5282-25	5282-9	5282-8	5282-14	5282-12	5282-12-FD	5282-11	5282-10	5282-6	5282-5	5282-4	5282-3	5282-2	5282-1	5281-36	5281-35	5281-22	5281-38	5281-37	5281-39	5281-30	5281-11
Sample Location		MW-13E	MW-19A	MW-19C	MW-20A	MW-20C	MW-20C	MW-20D	MW-20E	MW-30A	MW-30C	MW-30D	MW-30E	MW-31A	MW-31C	MW-10A	MW-10B	MW-11A	MW-12A	MW-12C	MW-12D	MW-14A	MW-16A
Operable Unit		OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI	OUI
Sample Collection Date		03/26/2011	03/23/2011	03/23/2011	03/24/2011	03/24/2011	03/24/2011	03/24/2011	03/24/2011	03/23/2011	03/23/2011	03/23/2011	03/23/2011	03/23/2011	03/23/2011	03/27/2011	03/27/2011	03/25/2011	03/27/2011	03/27/2011	03/27/2011	03/26/2011	03/24/2011
Analyte	PRG ¹																						
Field Measurements (units)																							
Conductivity (mS/cm)	NE	0.36	0.845	0.621	0.47	0.346	0.346	0.349	0.352	0.594	0.572	0.61	0.555	0.717	0.525	0.625	0.586	0.677	0.987	0.65	0.494	0.857	0.967
Oxidation Reduction Potential (mV)	NE	166	-18	0	-137	-56	56	-184	64	-114	-59	-199	-90	-111	54	115	111	NA	NA	NA	NA	NA	NA
pH (SU)	NE	7.14	7.22	6.94	7.6	6.57	6.57	6.09	7.05	6.94	7.7	6.24	7.53	6.61	6.79	6.95	6.93	5.97	6.18	NA	6.2	5.97	6.04
Temperature (Degrees C)	NE	8.35	10.51	11.02	7.6	7.81	7.81	9.41	9.82	11	10.68	11.54	11.39	9.92	10.65	9.95	10.55	9.6	8.09	7.22	8.12	4.98	10.71
Total Dissolved Oxygen (mg/L)	NE	5.54	4.25	8.13	0.54	8.7	8.7	0.45	10.47	6.82	16.95	3.4	18.67	0.74	8.5	8.65	9.32	4.7	7.8	7.55	6.02	6.84	6.25
Turbidity (NTU)	NE	4.5	0	0	0	0	0	6.2	0	9.9	0	0	0	0	0	5	0	0	0	0	7	0	24.1
Volatile Organic Compounds (µg/L)																							
1,1,1-Trichloroethane	200	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	0.066 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.4 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	5.2 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	70	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	0.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane	0.05	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	600	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	NE	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	75	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5 U	5 U	5 U	6.7	5 U	5 U	5 U	5 U	5 U	5 U	6.3 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	34 ²	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	1,000 ²	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	12,000 ²	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	83 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	80	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	7 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	720 ²	0.5 U	0.67	0.5 U	0.5 U	0.5 U	0.5 U	0.58	0.5 U	5.7	0.8	0.93	0.62	0.72	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	0.5 U	77	0.5 U	0.84	0.5 U	0.5 U	0.5 U	0.5 U	520	0.5 U	0.5 U	0.5 U	3.3	0.5 U	1	1.0 U	1.0 U	1.0 U	18	1.0 U	1.0 U	1.0 U
Chlorobenzene	100	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane (ethyl chloride)	21,000 ²	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloro>Ch																							

Table A4.3
Analytical Results - March 2011
Garvey Elevator Site
Hastings, NE

[illegible]

Table A4.3
Analytical Results - March 2011
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5281-10	5281-9	5281-8	5281-33	5281-34	5281-31	5281-31-FD	5281-24	5281-25	5281-26	5281-45	5281-44
Sample Location		MW-104A	MW-104C	MW-104D	MW-105A	MW-105C	MW-105D	MW-105D	MW-106A	MW-106C	MW-106D	Rolls New Well	Rolls Old Well
Operable Unit		OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2
Sample Collection Date		03/24/2011	03/24/2011	03/24/2011	03/27/2011	03/27/2011	03/27/2011	03/27/2011	03/26/2011	03/26/2011	03/26/2011	03/28/2011	03/28/2011
Analyte	PRG ¹												
Field Measurements (units)													
Conductivity (mS/cm)	NE	0.771	0.442	0.352	0.889	0.699	0.45	0.45	0.927	0.599	0.402	NA	NA
Oxidation Reduction Potential (mV)	NE	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH (SU)	NE	6.31	6.13	5.9	6.22	6.19	6.3	6.3	5.95	5.94	6.2	NA	NA
Temperature (Degrees C)	NE	9.2	10.68	10.11	8.02	7.8	6.88	6.88	10.65	7.42	8.41	NA	NA
Total Dissolved Oxygen (mg/L)	NE	6.74	5.09	3.34	8.1	7.64	5.93	5.93	8.03	7.15	5.5	NA	NA
Turbidity (NTU)	NE	0	0	0	0	0	0	0	0	0	0	NA	NA
Volatile Organic Compounds (µg/L)													
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	0.066 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.4 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	5.2 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	0.2	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
1,2-Dibromoethane	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	34 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone	1,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	12,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromochloromethane	83 ²	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	80	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ
Bromomethane	7 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	720 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	1.0 U	1.0 U	1.0 U	1.0 U	190	49	42	1.0 U	1.0 U	1.0 U	1.0 U	52
Chlorobenzene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane (ethyl chloride)	21,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	0.41 ³	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	13,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene (cumene)	390 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	10,000 ⁴	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methyl Acetate	16,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	12 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	0.14	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	10,000 ⁴	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	1.0 U	12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	0.41 ³	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	1,100 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:
Bolded results indicate a detection.
Shaded results indicate that the reported result is greater than the PRG.
¹ PRGs are EPA MCLs unless otherwise noted.
² EPA Regional Screening Levels for Residential Tapwater, November 2011.
³ combined cis + trans RSL value
⁴ MCL for Total Xylenes
*C - degrees Celsius
ID - identification
J - the reported value is an estimate.
MCL - maximum contaminant level
µg/L - micrograms per liter
mg/L - milligrams per liter
ms/cm - millisiemens per centimeter
NA - not analyzed
NTU - nephelometric turbidity units
RSL - regional screening level
U - The analyte was not detected at or above the reporting limit.
UJ - The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.

SEPTEMBER 2011

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Table A4.4
Analytical Results - September 2011
Garvey Elevator Site
Hastings, NE

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Table A4.4
Analytical Results - September 2011
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5511-13	5511-12	5511-11	5511-10	5511-9	5511-8	5511-7	5511-5	5511-5-FD	5511-4	5511-2	5511-1	5511-3	5511-43	5511-44	5511-46	5511-59	5511-57	5511-57-FD	5511-49	5511-36	
Sample Location		MW-19A	MW-19C	MW-20A	MW-20C	MW-20D	MW-20E	MW-30A	MW-30C	MW-30C	MW-30D	MW-31A	MW-31C	MW-30E	MW-47B	MW-47C	MW-47D	MW-48B	MW-48C	MW-48C	MW-48D	MW-49B	MW-49C
Operable Unit		OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1	OU1
Sample Collection Date		09/28/2011	09/28/2011	09/28/2011	09/28/2011	09/28/2011	09/28/2011	09/27/2011	09/27/2011	09/27/2011	09/27/2011	09/27/2011	09/27/2011	09/27/2011	10/03/2011	10/03/2011	10/03/2011	10/02/2011	10/02/2011	10/02/2011	10/03/2011	10/01/2011	10/01/2011
Analyte	PRG [†]																						
Field Measurements (units)																							
Conductivity (mS/cm)	NE	1.027	0.744	0.735	0.524	0.456	0.448	0.676	0.663	0.663	0.701	0.878	0.386	0.559	0.88	0.78	0.628	0.887	0.689	0.689	0.679	0.701	0.615
pH (SU)	NE	6.93	6.68	6.85	6.88	6.56	7.47	6.88	7.56	7.56	6.5	6.75	6.77	7.4	6.91	6.72	6.93	6.98	6.83	6.83	7.27	6.79	6.77
Temperature (Degrees C)	NE	17.83	15.16	16.80	13.27	12.54	12.11	14.67	13.97	13.97	13.52	15.09	14.37	13.83	13.54	14.96	14.99	19.55	20.68	20.68	16.37	16.21	14.5
Total Dissolved Oxygen (mg/L)	NE	7.20	8.45	1.05	8.66	1.04	7.05	7.28	12.93	12.93	3.88	0.7	6.68	13.32	9.23	7.88	8.15	8.28	7.20	7.20	14.33	8.63	8.36
Turbidity (NTU)	NE	0.30	0.11	1.09	0.31	4.51	0.37	1.16	0.45	0.45	13.0	0.93	0.31	0.31	1.78	0.25	2.12	17.6	45.6	45.6	3.38	0.39	5.28
Volatile Organic Compounds (µg/L)																							
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	0.066 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.4 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	5.2 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	0.2	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5.0 U	5.0 U	5.0 U	5.0 U	10 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
2-Hexanone	34 ²	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
4-Methyl-2-Pentanone	1,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	12,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	7 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	720 ²	1.0 U	1.0 U	1.0 U	1.1	1.0 U	1.0 U	3.2	2.5	1.0 U	1.0	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	70 J	1.0 U	1.0	1.0 U	1.0 U	1.0 U	160 J	1.0 U	1.0 U	1.0 U	7.5	1.0 U	1.0 U	59	6.2	1.0 U	680	1.0 U	1.0 U	1.0 U	43	1.0 U
Chlorobenzene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane (ethyl chloride)	21,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	80	4.1	1.0 U	1.2	1.0 U	1.0 U	1.0 U	4.4	1.0 U	1.0 U	3.4	16	1.0 U	1.8 J	4.6	1.0 U	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	0.41 ³	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	13,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene (cumene)	390 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	10,000 ⁴	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methyl Acetate	16,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	12 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	0.14	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	10,000 ⁴	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U																

Table A4.4
Analytical Results - September 2011
Garvey Elevator Site
Hastings, NE

[illegible]

Table A4.4
Analytical Results - September 2011
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5512-34	5512-2	5512-3	5512-1	5512-9	5512-8	5512-17	5512-17-FD	5512-16	5512-7	5512-6	5512-5	5512-4	5512-24	5512-24-FD	5512-23	5512-15	5512-14	5512-35	5512-36	5512-37	5512-13
Sample Location		MW-17D	MW-18A	MW-18C	MW-18D	MW-41-D1	MW-41-D2	MW-42D	MW-42D	MW-42E	MW-43D	MW-43E	MW-44D	MW-44E	MW-45C	MW-45C	MW-45D	MW-46-D1	MW-46-D2	MW-104A	MW-104C	MW-104D	MW-105A
Operable Unit		OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2	OU2
Sample Collection Date		09/30/2011	09/27/2011	09/27/2011	09/27/2011	09/28/2011	09/28/2011	09/29/2011	09/29/2011	09/29/2011	09/28/2011	09/28/2011	09/27/2011	09/27/2011	09/29/2011	09/29/2011	09/29/2011	09/28/2011	09/28/2011	10/01/2011	10/01/2011	10/01/2011	09/28/2011
Analyte	PRG ¹																						
Field Measurements (units)																							
Conductivity (mS/cm)	NE	0.607	0.515	0.728	0.515	0.693	0.355	0.513	0.513	0.426	0.554	0.406	0.418	0.348	0.668	0.668	0.58	0.589	0.555	0.78	0.396	0.308	0.881
pH (SU)	NE	6.86	7.25	6.91	6.96	6.75	6.96	6.88	6.88	6.94	6.72	6.87	6.99	7.17	7.24	7.24	7.04	6.77	6.9	6.91	6.89	7.09	6.87
Temperature (Degrees C)	NE	15.12	17.91	24.21	7.16	15.89	14.29	15.43	15.43	15.88	13.78	13.02	13.98	16.61	19.17	19.17	18.65	22.64	18.52	13.03	15.07	16.62	17.03
Total Dissolved Oxygen (mg/L)	NE	7.32	2.53	5.82	70.5	7.83	5.39	7.5	7.5	6.3	8.53	6.29	5.54	43.9	6.59	6.59	8.95	6.12	6.46	8.21	5.4	3.71	8.56
Turbidity (NTU)	NE	3.02	430	2.06	3.17	4.7	27.5	54.6	54.6	57.7	10.7	22.5	31.9	43.9	53.1	53.1	9.7	592	18	0.29	0.86	0.46	1.28
Volatile Organic Compounds (µg/L)																							
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	0.066 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.4 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	5.2 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	0.2	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
1,2-Dibromoethane	0.05	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U
2-Hexanone	34 ²	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
4-Methyl-2-Pentanone:	1,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetone	12,000 ²	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Benzene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromomethane	7 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	720 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	94 J	1.0 U	8.1 J	21 J	1.0 U	1.0 J	42 J	42 J	74 J	1.0 U	1.8 J	19 J	1.0 U	1.0 U	1.0 U	1.0 U	770 J	320 J	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane (ethyl chloride)	21,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.9	1.2	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	0.41 ³	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	13,000 ²	1.0 U	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 UJ
Dibromochloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene (cumene)	390 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	10,000 ⁴	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Methyl Acetate	16,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	12 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	0.14	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
o-Xylene	10,000 ⁴	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.4	1.0	

Table A4.4
Analytical Results - September 2011
Garvey Elevator Site
Hastings, NE

EPA Lab ID		5512-12	5512-10	5512-10-FD	5512-19	5512-20	5512-21	5511-25	5511-26
Sample Location		MW-105C	MW-105D	MW-105D	MW-106A	MW-106C	MW-106D	Rolls Old Well	Rolls New Well
Operable Unit		OU2	OU2	OU2	OU2	OU2	OU2	OU1	OU1
Sample Collection Date		09/28/2011	09/28/2011	09/28/2011	09/29/2011	09/29/2011	09/29/2011	09/30/2011	09/30/2011
Analyte	PRG ¹								
Field Measurements (units)									
Conductivity (mS/cm)	NE	0.659	0.43	0.43	0.831	0.58	0.405	0.977	0.498
pH (SU)	NE	6.78	7.05	7.05	6.83	6.6	6.99	7.06	7.23
Temperature (Degrees C)	NE	20.69	23.4	23.46	15.52	16.74	17.09	13.35	12.37
Total Dissolved Oxygen (mg/L)	NE	7.11	6.18	6.18	8.51	7.48	5.49	8.63	6.87
Turbidity (NTU)	NE	2.06	1.86	1.86	1.8	0.5	0.71	5.36	2.54
Volatile Organic Compounds (µg/L)									
1,1,1-Trichloroethane	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	0.066 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	5.0 U
1,1,2-Trichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichlorotrifluoroethane	53,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	2.4 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	5.2 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ
1,2,4-Trichlorobenzene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-Chloropropane	0.2	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ
1,2-Dibromoethane	0.05	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichlorobenzene	600	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (methyl ethyl ketone)	4,900 ²	5.0 U	1.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 UJ	5.0 UJ
2-Hexanone	34 ²	5.0 U	5.0 UJ	5.0 UJ	5.0 U	5.0 U	5.0 U	2.0 U	2.0 U
4-Methyl-2-Pentanone	1,000 ²	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U
Acetone	12,000 ²	5.0 UJ	5.0 U	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ	5.0 UJ
Benzene	5	1.0 U	5.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Bromomethane	7 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Disulfide	720 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon Tetrachloride	5	200 J	52 J	51 J	1.0 U	1.0 U	1.0 U	13 J	1.0 UJ
Chlorobenzene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane (ethyl chloride)	21,000 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	80	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,2-Dichloroethene	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	0.41 ³	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cyclohexane	13,000 ²	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 UJ	1.0 U	1.0 U
Dibromochloromethane	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 UJ
Dichlorodifluoromethane	190 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethyl Benzene	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropylbenzene (cumene)	390 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
m,p-Xylene	10,000 ⁴	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 U	1.0 U
Methyl Acetate	16,000 ²	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert-butyl ether	12 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylcyclohexane	NE	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Methylene Chloride	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Naphthalene	0.14	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 UJ	2.0 UJ
o-Xylene	10,000 ⁴	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	1000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	0.41 ³	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	1,100 ²	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl Chloride	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U

Notes:

Bolded results indicate a detection.

Shaded results indicate that the reported result is greater than the PRG.

¹ PRGs are EPA MCLs unless otherwise noted.

² EPA Regional Screening Levels for Residential Tapwater, November 2011.

³ combined cis + trans RSL value

⁴ MCL for Total Xylenes

C - Celsius

ID - identification

J - the reported value is an estimate.

MCL - maximum contaminant levels

µg/L - micrograms per liter

mg/L - milligrams per liter

ms/cm - millisiemens per centimeter

NA - not analyzed

NTU - nephelometric turbidity units

RSL - regional screening level

U - The analyte was not detected at or above the reporting limit.

UJ - The analyte was not detected at or above the reporting limit. The Reporting Limit is an estimate.

ATTACHMENT 5

FIELD FORMS (Electronic Form Only)

- September 2010
- December 2010
- March 2011
- September 2011

ATTACHMENT 6

LABORATORY ANALYTICAL REPORTS (Electronic Form Only)

- September 2010
- December 2010
- March 2011
- September 2011

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SEPTEMBER 2010

WATER LEVEL DATA

28

Location Hastings, NE Date 9/21/10
 Project / Client Garvey Elevator / EPA R7

1355 After calibration and safety meeting, Andrea Fletcher and Joe Villain depart to begin collecting water levels at the onsite locations.

Geokon Wells

Well	Date	Time	Digits	Temp
31C	9/21/10	1411	7656.5	12.4
31A	9/21/10	1414	8481.6	12.2
30E	9/21/10	1422	7281.0	12.7
30D	9/21/10	1424	6686.0	12.6
30C	9/21/10	1425	7605.9	12.2
30A	9/21/10	1427	8455.2	12.4
20E	9/21/10	1431	7278.7	12.5
20D	9/21/10	1432	6868.0	12.8
20C	9/21/10	1434	7683.9	12.2
20A	9/21/10	1435	7683.9 8105.5	12.2
19C	9/21/10	1441	7776.0	12.4
19A	9/21/10	1442	8493.3	12.2
Well	Date	Time	DTW BTDC	PLD
7A	9/21/10	1500	109.20	Ø
7B	9/21/10	1503	109.85	Ø
8A	9/21/10	1518	126.29	Ø
7A	9/21/10	1524	116.11	Ø

Asletcher 9/21/10

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Location Hastings, NE Date 9/21/10
 Project / Client Garvey Elevator / EPA R7

Well	Date	Time	DTW BTDC	PLD
9A	9/21/10	1534	111.60	Ø
16E	9/21/10	1542	119.89	Ø
6D	9/21/10	1545	118.95	Ø
6A	9/21/10	1549	118.49	Ø
13C	9/21/10	1554	119.06	Ø
13E	9/21/10	1558	118.35	Ø
5B	9/21/10	1604	119.02	Ø
5A	9/21/10	1607	117.94	Ø
5D	9/21/10	1610	119.20	Ø
1A	9/21/10	1617	112.66	Ø
3E	9/21/10	1624	119.47	Ø
3A	9/21/10	1627	122.17	Ø
3B	9/21/10	1629	120.71	Ø
3D	9/21/10	1633	120.59	Ø
4A	9/21/10	1649	119.34	Ø
4B	9/21/10	1651	119.31	Ø

1700 work complete for day.

Asletcher 9/21/10

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Location

Hastings, NE

Date

9/21/10

Project / Client

Garvey Elevator

windy 75°F

Author: Bo Moreland (IDM)

Team: Kyrie Jeffery Team 2: Andrea Fletcher, & Joe

Activities: Take water levels

Equipment: Water level indicator. SN: U51457X

Sample pro Bladder pump 2" SN: 10650

Control box MP-1DH SN: U57119X

Horiba U-52 Flow Through cell SN: 59585

1425 Start taking water levels. See table below for details. PID is not working, lamp issues.

1427	44 E	111.74	1532	104 C	107.97
1429	41 D	111.71	1535	104 D	107.88
1434	42 D	123.16	1537	104 A	105.34
1436	42 E	123.25	1550	18 D	110.37
1440	43 E	127.98	1552	18 A	107.26
1442	43 D	128.10	1554	18 C	110.89
1444	106 A	121.24	1559	12 D	114.06
1455	106 C	124.86	1601	12 A	113.18
1458	106 D	124.90	1603	12 C	114.84
1505	105 D	122.77	1605	16 A	109.86
1507	105 C	122.44	1607	16 C	110.07
1509	105 A	120.32	1615	17 C	94.83
1513	46-D2	116.19	1617	17 D	94.82
1515	46-D1	118.00	1619	17 A	95.38
1522	41-D2	121.24	1625	45 D	103.52
1525	41-D1	121.49	1627	45 C	103.88

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Location

Hastings, NE

Date

9/21/10

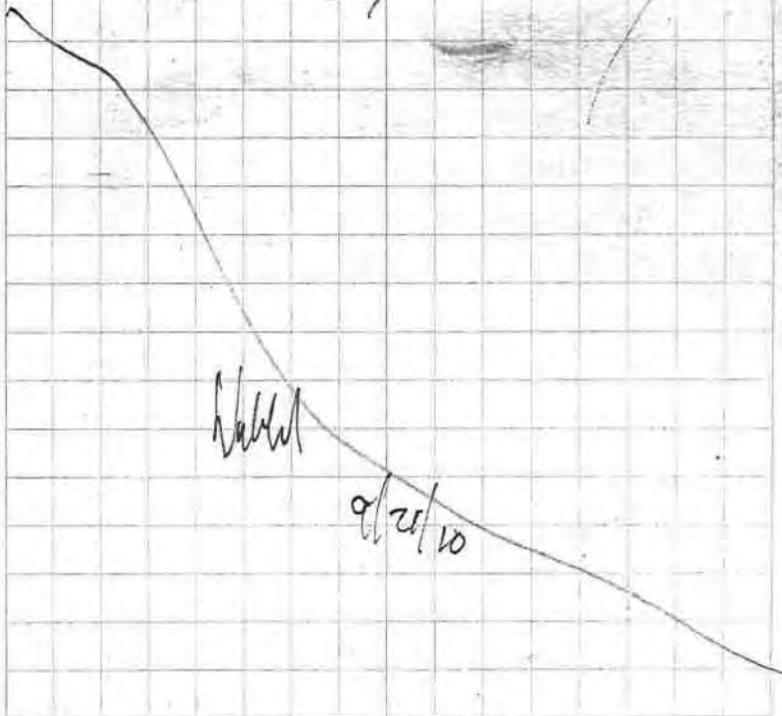
Project / Client

Garvey Elevator

1630	14 A	101.42
1634	11 A	97.89
1637	10 B	110.37
1639	10 A	108.81

1645 Done w/ water levels & head back to elevator to meet up w/ Team 2.

1700 Done for day.



PURGE SHEETS

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010Well ID: MW1AInitial Static Water Level (feet btoc): 112.66Final Water Level (feet btoc): 112.71Purge Start Time: 1135Sample Time: 1200Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: ms/msdSample Number: 5068-31Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 90 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1143	112.71	10.40	7.10	0.857	5.82	177	3.3	250	
1146	112.71	10.40	7.16	0.855	5.65	177	1.9	250	
1149	112.71	10.43	7.10	0.853	5.25	178	0.5	250	
1152	112.71	10.50	7.09	0.851	5.11	178	0.1	250	
1155	112.71	10.56	7.14	0.849	5.06	179	0.0	250	
1158	112.71	10.60	7.11	0.848	4.91	179	0.2	250	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010

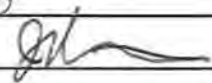
Well ID: MW-2A

Initial Static Water Level (feet btoc): 116.11

Final Water Level (feet btoc): 116.18

Purge Start Time: 1325

Sample Time: 1353

Samplers= Signatures: 

OVM: FID G PID G In Casing (ppm): (Initial) (Vented to) atmosphere

Purging/Sampling Device: Bladder Pump

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 5068-27

Controller Settings: Recharge: 10 secs Discharge: 6 secs Pressure: 100 psi

Cycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1335	116.17	13.01	6.89	0.718	6.85	168	0.0	250	
1338	116.18	12.31	6.83	0.725	7.51	173	0.0	250	
1341	116.18	12.06	6.84	0.729	7.58	174	0.0	250	
1344	116.17	12.00	6.83	0.739	7.48	177	0.0	250	
1347	116.18	12.33	6.83	0.736	7.09	178	0.0	250	
1350	116.18	12.02	6.84	0.734	7.14	178	0.0	250	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010Well ID: MW 3AInitial Static Water Level (feet btoc): 122.17Final Water Level (feet btoc): 122.21Purge Start Time: 1145Sample Time: 1205Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5008-12Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 90 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:47	122.21	14.31	7.22	0.943	7.00	129	1.6	270	
11:50	122.21	14.04	7.17	0.938	4.86	131	0.0	270	
11:53	122.21	13.87	7.17	0.937	4.94	132	0.0	270	
11:56	122.21	13.82	7.15	0.938	5.03	132	0.0	270	
11:59	122.21	13.70	7.15	0.935	5.12	133	0.0	270	
12:02	122.21	13.95	7.15	0.932	5.29	134	0.0	270	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010Well ID: MW 3BInitial Static Water Level (feet btoc): 120.71Final Water Level (feet btoc): 121.31Purge Start Time: 1035Sample Time: 1058Samplers= Signatures: gmOVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: Field DuplicateSample Number: 5066-10/5068-10FDController Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 120 psiCycles Per Minute: 3-4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:40	122.26	11.39	7.12	0.964	8.67	127	0.0	400-100	
10:43	121.26	11.40	7.10	0.967	8.67	128	0.0	400	
10:46	121.29	11.27	7.11	0.966	8.62	129	0.0	400	
10:49	121.31	11.27	7.09	0.968	8.58	131	0.0	400	
10:52	121.31	11.28	7.09	0.967	8.54	133	0.0	400	
10:55	121.31	11.26	7.09	0.967	8.63	133	0.0	400 ↓	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2020Well ID: MW3DInitial Static Water Level (feet btoc): 120.59Final Water Level (feet btoc): 120.55Purge Start Time: 1255Sample Time: 1320Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-13Controller Settings: Recharge: 20 secs Discharge: 16 secs Pressure: 135 psiCycles Per Minute: 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1257	125.52 120.55	14.89	7.55	0.689	8.11	121	0.0	170	
1300	120.55	13.55	7.29	0.755	8.00	128	0.0	170	
1305	120.53	13.29	7.24	0.765	7.85	130	0.0	170	
1308	120.53	13.36	7.22	0.765	8.04	131	0.0	170	
1313	120.54	13.00	7.23	0.764	8.02	133	0.0	170	
1316	120.55	12.59	7.23	0.767	8.10	134	0.0	170	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010Well ID: MW-3EInitial Static Water Level (feet btoc): 119.47Final Water Level (feet btoc): 119.43Purge Start Time: 0900Sample Time: 0928Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-9Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 48 psiCycles Per Minute: 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
904		11.40	5						
904	119.42	15.82	7.78	0.487	11.35	159	0.0	100	
908	119.40	14.08	7.74	0.543	6.75	63	0.0	100	
911	119.43	13.95	7.70	0.554	5.66	57	0.0	100	
914	119.43	13.83	7.70	0.560	4.68	58	0.0	100	
917	119.43	13.64	7.70	0.562	4.12	55	0.0	100	
920	119.43	13.48	7.73	0.562	3.87	57	0.0	100	
922	119.43	13.40	7.75	0.563	3.89	56	0.0	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010Well ID: MW 4AInitial Static Water Level (feet btoc): 119.34Final Water Level (feet btoc): 119.45Purge Start Time: 0950Sample Time: 1030Samplers= Signatures: 9/11OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-30Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 90 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:55	119.45	10.34	7.48	0.922	4.79	168	278	150	
9:58	119.45	10.29	7.43	0.937	4.68	167	161	150	
10:01	119.45	10.27	7.42	0.940	4.08	166	126	150	
10:04	119.45	10.26	7.43	0.942	3.92	165	70.0	150	
10:07	119.45	10.26	7.45	0.942	3.88	163	56.5	150	
10:10	119.45	10.29	7.50	0.943	4.02	161	36.5	150	
10:13	119.45	10.32	7.42	0.943	3.86	162	34.8	156	
10:16	119.45	10.37	7.43	0.942	3.52	161	24.8	150	
10:19	119.45	10.42	7.43	0.940	3.03	161	22.7	150	
10:22	119.45	10.42	7.40	0.943	3.04	161	20.3	150	
10:25	119.45	10.43	7.40	0.943	3.02	160	22.2	150	
10:28	119.45	10.45	7.41	0.943	3.00	162	22.2	150	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010 OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmosphere

Well ID: MW 4B Purging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): 119.31 Analytical Parameters: VOCs

Final Water Level (feet btoc): 119.45 QC Samples Collected: None

Purge Start Time: 0800 Sample Number: 5068-29

Sample Time: 0907 Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 90 psi

Samplers= Signatures: [Signature] Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
810	119.45	10.36	7.09	0.939	9.69	170	336	250	
813	119.45	10.35	7.08	0.939	9.73	189	305	250	
816	119.45	10.33	7.07	0.938	9.79	187	216	250	
819	119.45	10.33	7.07	0.938	9.81	186	109	250	
822	119.45	10.33	7.07	0.938	9.64	186	62.2	250	
825	119.45	10.33	7.08	0.937	9.80	184	43.1	250	
828	119.45	10.33	7.08	0.937	9.77	184	31.4	250	
831	119.45	10.32	7.08	0.937	9.73	183	21.2	250	
834	119.45	10.31	7.08	0.936	9.92	182	17.9	250	
837	119.45	10.31	7.08	0.937	9.74	182	15.6	250	
840	119.45	10.31	7.10	0.937	10.65	183	13.0	250	
843	119.45	10.30	7.08	0.937	9.87	183	8.0	250	
847	119.45	10.30	7.09	0.937	9.81	182	6.5	250	
850	119.45	10.30	7.08	0.937	9.83	181	5.7	250	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010Well ID: MW4B continuedInitial Static Water Level (feet btoc): 119.31Final Water Level (feet btoc): 119.45Purge Start Time: 0800Sample Time: 0907Samplers= Signatures: g/rOVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-29Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 90 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
853	119.45	10.30	7.09	0.937	9.95	180	5.0	250	
856	119.45	10.29	7.09	0.937	9.78	180	4.7	250	
859	119.45	10.29	7.09	0.937	9.56	179	2.9	250	
902	119.45	10.27	7.08	0.937	9.59	179	2.0	250	
905	119.45	10.27	7.09	0.936	9.60	179	2.0	250	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010Well ID: MW 5-AInitial Static Water Level (feet btoc): 117.94Final Water Level (feet btoc): 118.05Purge Start Time: 0755Sample Time: 0820Samplers= Signatures: gmOVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-16Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 165 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
802	118.05	9.91	7.00	0.857	6.30	188	2.2	300	300
805	118.05	9.88	7.10	0.869	6.04	182	2.2	300	
808	118.05	9.89	7.13	0.874	5.99	178	0.0	300	
811	118.05	9.90	7.15	0.877	5.76	174	0.0	300	
814	118.05	9.89	7.17	0.880	5.60	171	0.0	300	
817	118.05	9.92	7.19	0.879	5.49	169	0.0	300	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010Well ID: MW 5-BInitial Static Water Level (feet btoc): 114.94Final Water Level (feet btoc): 119.13Purge Start Time: 1640Sample Time: 1941Samplers= Signatures: g/hOVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: Field DuplicateSample Number: 5068-1814 / 5068-14FDController Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 115 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
16:48	119.17	13.05	8.45	0.812	0.31	92	628	400	
16:51	119.17	12.80	8.43	0.813	0.20	87	588	400	
16:54	119.17	12.66	8.37	0.819	0.22	83	531	400	
16:57	119.17	12.47	8.26	0.826	0.38	81	466	400	
17:00	119.17	12.48	8.10	0.835	0.69	84	386	400	
17:03	119.17	12.48	7.90	0.847	1.22	93	322	400	
17:06	119.17	12.40	7.77	0.855	2.04	100	289	400	
17:09	119.17	12.32	7.66	0.862	2.22	111	257	400	
17:12	119.17	12.26	7.60	0.865	2.50	115	237	400	
17:15	119.17	12.40	7.56	0.868	2.70	119	220	400	
17:18	119.17	12.55	7.53	0.869	2.83	122	205	400	
17:21	119.17	12.98	7.52	0.868	2.87	123	197	400	
17:24	119.17	13.59	7.51	0.872	2.78	124	190	400	
17:27	119.17	14.35	7.50	0.864	2.43	124	177	400	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010Well ID: MW 5 B continued (1)Initial Static Water Level (feet btoc): 117.94Final Water Level (feet btoc): 119.13Purge Start Time: 16:40Sample Time: 18:41Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: Field DuplicateSample Number: 5068-14/5068-14FDController Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 115 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
17:30	119.13	14.81	7.51	0.862	2.31	123	167	400	
17:33	119.13	15.09	7.50	0.863	2.31	124	153	400	
17:36	119.13	15.47	7.48	0.865	2.73	123	143	400	
17:39	119.13	15.70	7.49	0.866	2.27	128	138	400	
17:42	119.13	15.95	7.48	0.867	2.25	126	126	400	
17:45	119.13	16.22	7.48	0.868	2.22	126	124	400	
17:48	119.13	16.49	7.47	0.869	2.20	126	114	400	
17:51	119.13	16.75	7.47	0.869	2.18	127	112	400	
17:54	119.13	16.93	7.47	0.869	2.12	127	106	400	
17:57	119.13	CHANGE AIR	TANK	(Nitrogen)					
18:01	119.13	16.90	7.47	0.869	2.29	131	160	400	
18:05	119.13	12.60	7.49	0.860	2.57	328 130	314	400	
18:08	119.13	12.25	7.55	0.862	2.82	131	297	400	
18:11	119.13	11.91	7.51	0.866	2.75	133	263	400	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010Well ID: MW 5-B Continued (2)Initial Static Water Level (feet btoc): 117.94Final Water Level (feet btoc): 119.13Purge Start Time: 1640Sample Time: 1841Samplers= Signatures: MLOVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: Field DuplicateSample Number: 5068-144/5068-144DController Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 115 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
18:14	119.13	11.71	7.52	0.872	2.87	132	253	400	
18:17	119.13	11.70	7.50	0.876	3.10	133	236	400	
18:20	119.13	11.60	7.45	0.882	3.48	136	191	400	
18:23	119.13	11.60	7.39	0.890	3.89	138	164	400	
18:26	119.13	11.60	7.36	0.895	3.92	141	143	400	
18:29	119.13	11.52	7.32	0.900	3.95	148	116	400	
18:32	119.13	11.47	7.31	0.903	4.02	146	108	400	
18:35	119.13	11.51	7.29	0.904	4.07	147	98	400	
18:38	119.13	11.54	7.29	0.906	4.09	147	96	400	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010Well ID: MW-5DInitial Static Water Level (feet btoc): 119.20Final Water Level (feet btoc): 119.35Purge Start Time: 0900Sample Time: 0922Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-17Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psi

Cycles Per Minute: _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:05	119.35	10.46	8.57	0.616	11.36	143	0.0	125	
9:08	119.35	10.45	7.71	0.620	8.86	148	0.0	125	
9:11	119.35	10.47	7.46	0.620	8.63	150	0.0	125	
9:14	119.35	10.55	7.27	0.618	8.23	152	0.0	125	
9:17	119.35	10.58	7.29	0.615	7.75	153	0.0	125	
9:20	119.35	10.60	7.25	0.611	7.57	153	0.0	125	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

**PARAMETERS FOR WATER QUALITY STABILIZATION**

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010Well ID: MW 6-AInitial Static Water Level (feet btoc): 118.49Final Water Level (feet btoc): 118.59Purge Start Time: 1330Sample Time: 1402Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: Field DuplicateSample Number: 5069-20/5069-20PDController Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 90 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1339	118.58	14.83	7.20	0.839	2.37	143	0.0	200	
1342	118.58	14.26	7.19	0.841	3.20	146	0.0	200	
1345	118.59	13.31	7.17	0.849	2.26	150	0.0	200	
1348	118.59	13.36	7.17	0.845	2.17	151	0.0	200	
1351	118.59	13.62	7.16	0.842	2.45	153	0.0	200	
1354	118.59	13.55	7.16	0.847	2.90	154	0.0	200	
1357	118.59	13.21	7.16	0.852	2.64	154	0.0	200	
1400	118.59	13.47	7.16	0.841	2.87	155	0.0	200	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/10Well ID: MW 6 DInitial Static Water Level (feet btoc): 119.95Final Water Level (feet btoc): 119.13Purge Start Time: 1235Sample Time: 1255Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-19Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 120 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1237	119.15	17.89	8.30	0.486	7.52	100	0.0	200	
1240	119.13	16.40	7.61	0.505	6.24	126	0.0	200	
1243	119.13	15.46	7.36	0.515	5.98	134	0.0	200	
1246	119.13	14.88	7.29	0.518	5.83	139	0.0	200	
1249	119.13	14.73	7.26	0.520	5.74	141	0.0	200	
1252	119.13	14.79	7.28	0.518	5.39	143	0.0	200	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010Well ID: MW-6EInitial Static Water Level (feet btoc): 119.89Final Water Level (feet btoc): 120.09Purge Start Time: 1040Sample Time: 1109Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-18Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 140 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:46	120.09	12.57	7.32	0.334	4.32	109	0.0	125	
10:49	120.09	12.32	7.40	0.333	3.50	110	0.0	125	
10:52	120.09	12.28	7.41	0.333	3.12	111	0.0	125	
10:55	120.09	12.08	7.39	0.333	2.87	111	0.0	125	
10:58	120.09	12.14	7.38	0.332	2.83	112	0.0	125	
11:01	120.09	12.06	7.37	0.332	2.75	113	0.0	125	
11:04	120.09	12.16	7.37	0.332	2.61	113	0.0	125	
11:07	120.09	12.06	7.39	0.332	2.61	113	0.0	125	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010Well ID: MW 7 AInitial Static Water Level (feet btoc): 109.20Final Water Level (feet btoc): 109.23Purge Start Time: 1625Sample Time: 1652Samplers= Signatures: gmaOVM: FID g PID g In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-23Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 80 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1631	109.23	17.28	7.03	0.723	6.40	152	0.0	200	
1634	109.23	14.61	7.11	0.750	6.58	153	0.0	200	
1637	109.23	14.74	7.15	0.736	3.85	155	0.0	200	
1640	109.23	14.66	7.16	0.737	5.85	157	0.0	200	
1644	109.23	14.55	7.14	0.739	2.24	159	0.0	200	
1647	109.23	14.25	7.14	0.742	2.26	159	0.0	200	
1650	109.23	13.93	7.13	0.745	2.25	162	0.0	200	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010Well ID: MW 7-BInitial Static Water Level (feet btoc): 109.85Final Water Level (feet btoc): 109.88Purge Start Time: 1520Sample Time: 1547Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-22Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 80 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1526	109.89	18.56	7.06	0.702	5.26	146	0.0	250	
1529	109.88	18.37	7.07	0.677	4.47	150	0.0	250	
1532	109.88	19.35	7.02	0.672	4.61	155	0.0	250	
1535	109.88	20.88	6.98	0.854	3.35	158	0.0	250	
1538	109.88	20.93	6.96	0.652	4.33	166	0.0	250	
1541	109.88	20.97	6.75	0.650	4.31	161	0.0	250	
1544	109.88	20.99	6.94	0.650	4.28	163	0.0	250	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010Well ID: MW 8AInitial Static Water Level (feet btoc): 126.29Final Water Level (feet btoc): 116.36Purge Start Time: 1500Sample Time: 1524Samplers= Signatures: gmaOVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-28Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 105 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1506	116.42	14.26	7.39	1.32	7.01	153	0.0	260	
1509	116.36	13.81	7.38	1.32	7.12	155	0.6	260	
1512	116.36	13.45	7.38	1.33	6.38	157	0.0	200	
1515	116.36	13.40	7.37	1.32	5.24	157	0.0	200	
15:18	116.36	13.56	7.37	1.32	5.14	158	0.0	200	
15:21	116.36	13.73	7.37	1.32	5.42	158	0.0	200	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/10Well ID: mw9AInitial Static Water Level (feet btoc): 111.60Final Water Level (feet btoc): 111.60Purge Start Time: 0936Sample Time: 1011

Samplers= Signatures: _____

OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-1Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 85 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:39	111.60	16.91	7.54	0.873	0.87	192	0.0	100	
9:42	111.61	16.51	7.64	0.884	0.54	189	2.32	100	
9:45	111.60	17.21	7.79	0.894	0.34	185	0.0	100	
9:48	111.60	16.72	7.83	0.906	0.26	184	9.5	100	
9:51	111.60	16.46	7.91	0.913	0.27	182	61.7	100	
9:54	111.60	16.41	7.96	0.919	0.23	180	0.0	100	
9:57	111.61	16.33	8.00	0.924	0.23	179	0.0	100	
10:00	111.60	16.41	8.05	0.931	0.38	177	0.0	100	
10:03	111.61	16.39	8.06	0.935	0.36	176	0.0	100	
10:06	111.60	16.42	8.08	0.941	0.31	176	0.0	100	
10:09	111.60	16.50	8.11	0.946	0.33	175	0.0	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010Well ID: MW-11AInitial Static Water Level (feet btoc): 98.0Final Water Level (feet btoc): 98.0Purge Start Time: 15:30Sample Time: 16:03Samplers= Signatures: KJ, WMOVM: FID ☒ PID ☐ In Casing (ppm): (Initial) 0.9 (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5067-26Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 55 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
15:33	98.0	25.18	7.56	0.001	8.20	137	66.0	100	
15:36	98.0	25.17	7.58	0.001	8.21	136	65.8	100	
15:39	98.0	25.15	7.55	0.001	8.21	137	78.9	100	
15:42	98.0	25.13	7.52	0.185	5.58	137	1.9	100	
15:45	98.0	25.11	7.47	0.328	4.34	137	1.1	100	
15:48	98.0	25.06	7.87	0.431	4.27	139	0.8	100	
15:51	98.0	25.01	7.91	0.440	4.07	147	0.5	100	
15:54	98.0	24.95	8.04	0.442	4.04	149	0.0	100	
15:57	98.0	24.92	8.12	0.442	4.05	149	0.0	100	
16:00	98.0	24.89	8.16	0.442	3.88	149	0.0	100	
16:03	98.0	24.89	8.17	0.441	3.86	149	0.0	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010Well ID: MW 10-AInitial Static Water Level (feet btoc): 108.81Final Water Level (feet btoc): 108.83Purge Start Time: 1315Sample Time: 1446Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5067-36Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 95 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1320	108.83	13.72	7.31	0.929	3.00	138	76.2	250	
1323	108.83	13.23	7.26	0.931	5.12	141	54.9	250	
1326	108.83	13.07	7.24	0.935	5.46	143	37.1	250	
1329	108.83	13.06	7.25	0.942	5.23	144	30.8	250	
1332	108.83	12.96	7.25	0.941	5.30	145	27.0	250	
1335	108.83	12.85	7.24	0.945	5.32	147	21.0	250	
1338	108.83	12.80	7.24	0.945	6.47	147	21.5	250	
1341	108.83	12.73	7.26	0.945	8.45	146	16.0	250	
1344	108.83	12.78	7.23	0.944	5.41	150	12.6	250	
1347	108.83	12.79	7.22	0.955	5.59	150	10.5	250	
1350	108.83	12.80	7.25	0.942	5.37	151	8.7	250	
1353	108.83	12.50	7.23	0.950	5.45	152	7.5	250	
1356	108.83	12.35	7.23	0.958	5.13	153	5.7	250	
1359	108.83	12.61	7.16	0.946	5.12	154	7.5	250	CRUSHED BLADDER, Had to Replace

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010Well ID: MW 10AInitial Static Water Level (feet btoc): 108.81Final Water Level (feet btoc): 108.83Purge Start Time: 1315Sample Time: 1446Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5067-36Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 70 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1419	108.83	13.12	7.36	0.970	6.73	144	360	250	
1422	108.83	12.64	7.27	0.971	7.11	153	246	250	
1425	108.83	12.58	7.23	0.972	7.33	157	171	250	
1428	108.83	12.64	7.20	0.973	7.66	160	115	250	
1431	108.83	12.59	7.19	0.973	7.90	163	70.2	250	
1434	108.83	12.53	7.18	0.972	8.01	164	50.6	250	
1437	108.83	12.57	7.17	0.974	8.11	166	31.8	250	
1440	108.83	12.50	7.17	0.974	8.21	166	20.9	250	
1444	108.83	12.47	7.17	0.973	8.29	167	13.2	250	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010

Well ID: MW 10-B

Initial Static Water Level (feet btoc): 110.37

Final Water Level (feet btoc): 110.41

Purge Start Time: 1209

Sample Time: 1231

Samplers= Signatures: 

OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmosphere

Purging/Sampling Device: Bladder Pump

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 5067-35

Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 95 psi

Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1214	110.41	11.92	7.52	0.838	9.30	119	0.0	200	
1217	110.41	11.21	7.27	0.855	8.97	134	0.0	200	
1220	110.41	11.19	7.23	0.855	8.96	136	0.0	200	
1223	110.41	11.05	7.22	0.856	8.82	140	0.0	200	
1226	110.41	10.96	7.20	0.855	8.86	143	0.0	200	
1229	110.41	11.08	7.18	0.856	8.75	145	0.0	200	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-12APurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 113.22Analytical Parameters: VOCsFinal Water Level (feet btoc): 113.18QC Samples Collected: NonePurge Start Time: 9:40Sample Number: 5067-10Sample Time: 10:49Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 65 psiSamplers= Signatures: KJ WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:43	113.22	21.49	7.16	0.531	4.97	115	22.5	35	
9:46	113.22	21.40	7.07	0.553	5.09	115	21.3	35	
9:49	113.22	21.26	6.91	0.686	5.42	113	52.3	35	
9:52	113.22	21.32	6.87	0.743	5.44	112	52.3	35	
9:55	113.22	21.26	6.83	0.789	5.17	110	39.9	35	
9:58	113.22	21.24	6.82	0.807	5.05	108	34.8	35	
10:01	113.22	21.31	6.82	0.817	5.07	108	29.4	35	
10:04	113.22	21.31	6.83	0.826	5.04	108	24.0	35	
10:07	113.22	21.33	6.83	0.834	4.90	107	20.6	35	
10:10	113.22	21.34	6.84	0.837	4.91	107	18.2	35	
10:13	113.22	21.35	6.83	0.839	4.90	107	16.3	35	
10:16	113.22	21.42	6.83	0.841	5.02	107	14.1	35	
10:19	113.22	21.48	6.85	0.842	4.96	108	13.7	35	
10:22	113.22	21.53	6.85	0.842	4.90	108	12.4	35	
10:25	113.22	21.52	6.85	0.843	4.75	108	11.4	35	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

10:28 113.22 21.59 6.85 0.843 4.73 109 10.5 35


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10:31 113.22 21.65 6.86 0.843 4.78 110 9.8 35

10:34 113.22 21.71 6.86 0.843 4.89 110 8.5 35

10:37 113.22 21.77 6.86 0.844 4.89 111 7.7 35

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

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mw-12A

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Time	Water Level	Temp	pH	SC	DO	ORP	Turb	Flow
10:40	113.22	21.80	6.86	0.844	4.80	111	6.6	35
10:43	113.22	21.92	6.86	0.845	4.86	111	6.1	35
10:46	113.22	21.99	6.87	0.844	4.85	112	5.2	35
10:49	113.22	22.07	6.87	0.844	4.93	112	5.1	35

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: WW12CPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 114.35Analytical Parameters: VOCsFinal Water Level (feet btoc): 114.92QC Samples Collected: NonePurge Start Time: 8:40Sample Number: 5067-9Sample Time: 9:10Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 75 psiSamplers- Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:43	114.35	24.16	5.29	0.017	8.59	257	166.2	80	
8:46	114.35	24.16	5.29	0.017	8.58	257	166.5	80	
8:49	114.35	24.16	5.31	0.017	8.58	258	166.4	80	
8:52	114.35	24.15	5.31	0.017	8.57	259	55.0	80	
8:55	114.35	22.54	6.53	0.706	4.00	194	2.5	80	
8:58	114.35	21.95	6.58	0.667	3.99	191	1.9	80	
9:01	114.35	21.33	6.59	0.632	4.04	180	1.6	80	
9:04	114.35	21.27	6.60	0.606	4.21	169	2.5	80	
9:07	114.35	21.06	6.61	0.590	4.16	161	3.6	80	
9:10	114.35	20.92	6.61	0.586	4.23	157	4.1	80	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-12DPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 113.10Analytical Parameters: VOCsFinal Water Level (feet btoc): 113.12QC Samples Collected: 5067-11FDPurge Start Time: 11:20Sample Number: 5067-11Sample Time: 11:50Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: psiSamplers= Signatures: KJ. WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:23	113.10	22.43	7.20	0.603	5.74	112	5.4	100	
11:26	113.10	22.05	7.46	0.518	5.72	109	4.8	100	
11:29	113.10	21.61	7.53	0.474	6.19	110	8.6	100	
11:32	113.10	21.30	7.34	0.447	6.25	110	13.2	100	
11:35	113.10	21.02	7.16	0.431	5.39	110	21.0	100	
11:38	113.10	20.88	7.06	0.421	4.75	110	22.3	100	
11:41	113.10	20.85	7.03	0.419	4.45	110	21.7	100	
11:44	113.10	20.67	6.99	0.415	4.14	110	21.8	100	
11:47	113.10	20.67	6.95	0.411	3.93	109	22.8	100	
11:50	113.10	20.80	6.95	0.409	3.90	110	22.2	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmosphereWell ID: MW 13 CPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 119.06Analytical Parameters: VOCsFinal Water Level (feet btoc): 119.12

QC Samples Collected: _____

Purge Start Time: 1150Sample Number: 5068-26Sample Time: 1212Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 100 psiSamplers= Signatures: [Signature]Cycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:55	119.11	11.70	7.53	0.690	21.44	171	0.0	300	
11:58	119.11	11.63	7.50	0.690	16.26	173	0.0	300	
12:01	119.12	11.59	7.51	0.692	15.91	174	0.0	300	
12:04	119.12	11.50	7.54	0.693	15.80	174	0.0	300	
12:07	119.12	11.45	7.53	0.693	15.74	175	0.0	300	
12:10	119.12	11.49	7.51	0.693	15.59	176	0.0	300	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010Well ID: MW 13-EInitial Static Water Level (feet btoc): 118.35Final Water Level (feet btoc): 118.31Purge Start Time: 1000Sample Time: 1050Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5069-24Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 150 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:10	118.31	13.89	7.68	0.504	11.81	224	0.0	100	
10:13	118.31	13.63	7.56	0.543	12.56	222	0.0	100	
10:16	118.31	13.59	7.49	0.561	11.74	222	0.0	100	
10:19	118.31	13.67	7.44	0.574	12.76	219	0.0	100	
10:22	118.31	13.64	7.43	0.578	12.17	216	0.0	100	
10:25	118.32	13.73	7.41	0.581	12.52	213	0.0	100	
10:28	118.32	13.63	7.41	0.583	12.68	209	0.0	100	
10:31	118.32	13.67	7.40	0.581	14.97	207	0.0	100	
10:34	118.31	13.55	7.41	0.582	13.02	204	0.0	100	
10:37	118.31	13.60	7.41	0.582	12.46	200	0.0	100	
10:40	118.32	13.75	7.41	0.585	13.66	196	0.0	100	
10:43	118.32	13.84	7.41	0.585	13.75	194	0.0	100	
10:46	118.31	13.75	7.42	0.584	13.02	190	0.0	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010

OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere

Well ID: MW-14A

Purging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): 101.45

Analytical Parameters: VOCs

Final Water Level (feet btoc): 101.45

QC Samples Collected: None

Purge Start Time: 13:54

Sample Number: 5067-42

Sample Time: 14:30

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
13:57	101.45	26.20	7.70	0.418	6.71	158	27.2	50	
14:00	101.45	26.87	7.79	0.438	6.00	160	17.0	50	
14:03	101.45	27.23	7.85	0.452	5.94	160	11.9	50	
14:06	101.45	27.61	7.92	0.461	5.85	159	6.7	50	
14:09	101.45	27.85	7.97	0.468	5.76	157	3.8	50	
14:12	101.45	28.25	7.92	0.484	5.67	160	2.1	50	
14:15	101.45	28.50	7.67	0.492	5.67	164	0.5	50	
14:18	101.45	28.62	7.47	0.488	5.41	166	0.2	50	
14:21	101.45	28.79	7.22	0.505	5.02	168	0.0	50	
14:24	101.45	29.05	6.95	0.563	4.27	170	0.0	50	
14:27	101.45	29.10	6.92	0.577	4.08	170	0.0	50	
14:30	101.45	29.19	6.86	0.598	4.38	171	0.0	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010Well ID: MW-16AInitial Static Water Level (feet btoc): 109.75Final Water Level (feet btoc): 109.75Purge Start Time: 10:42Sample Time: 11:24Samplers= Signatures: KJ. WMOVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5067-38Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:45	109.75	21.23	7.57	0.003	8.97	194	176	125	
10:48	109.75	21.27	8.11	0.405	6.00	153	0.0	125	
10:51	109.75	19.04	7.87	0.436	6.19	156	0.0	125	
10:54	109.75	18.84	7.51	0.490	6.36	164	0.0	125	
10:57	109.75	18.79	7.25	0.547	6.24	169	0.0	125	
11:00	109.75	18.68	7.10	0.598	6.08	171	0.0	125	
11:03	109.75	18.75	6.96	0.641	5.83	174	0.0	125	
11:06	109.75	18.90	6.89	0.673	5.68	175	0.0	125	
11:09	109.75	18.92	6.84	0.703	5.46	177	0.0	125	
11:12	109.75	19.08	6.81	0.720	5.17	179	0.0	125	
11:15	109.75	19.17	6.79	0.729	5.26	180	0.0	125	
11:18	109.75	19.35	6.79	0.738	4.65	181	0.0	125	
11:21	109.75	19.58	6.78	0.748	4.71	181	0.0	125	
11:24	109.75	19.74	6.77	0.753	4.50	182	0.0	125	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010OVM: FID G PID In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MU-110CPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 109.99Analytical Parameters: VOCsFinal Water Level (feet btoc): 109.99QC Samples Collected: Extra Volume for MS/MSDPurge Start Time: 8:20Sample Number: 5067-37Sample Time: 9:08Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiSamplers- Signatures: KJ. WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:23	109.99	19.34	5.24	0.470	6.30	235	0.0	75	
8:26	109.99	18.07	6.92	0.649	6.29	169	0.0	75	
8:29	109.99	16.75	7.50	0.660	6.13	179	0.0	75	
8:32	109.99	16.37	8.02	0.657	6.19	184	0.0	75	
8:35	109.99	16.55	8.22	0.651	6.13	184	0.0	75	
8:38	109.99	16.83	8.34	0.646	6.64	181	0.0	75	
8:41	109.99	16.71	8.37	0.646	6.12	184	0.0	75	
8:44	109.99	17.01	8.23	0.643	6.05	183	0.0	75	
8:47	109.99	17.24	8.01	0.641	5.83	181	0.0	75	
8:50	109.99	17.38	7.84	0.641	5.96	181	0.0	75	
8:53	109.99	17.80	7.70	0.638	5.83	181	0.0	75	
8:56	109.99	17.97	7.62	0.638	5.76	181	0.0	75	
8:59	109.99	17.99	7.47	0.641	5.74	180	0.0	75	
9:02	109.99	18.11	7.30	0.644	5.83	179	0.0	75	
9:05	109.99	18.14	7.27	0.646	5.86	178	0.0	75	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

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9:08 109.99 18.27

7.22 0.651 5.82 177 0.0 75

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010 OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere

Well ID: MW-17A Purging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): 95.35 Analytical Parameters: VOCs

Final Water Level (feet btoc): 95.35 QC Samples Collected: None

Purge Start Time: 12:36 Sample Number: 5067-5

Sample Time: 13:00¹⁹ 13:27 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 55 psi

Samplers= Signatures: KJ. WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:39	95.35	25.26	7.66	0.001	6.90	74	65.4	120	
12:42	95.35	25.39	7.66	0.001	6.89	73	65.8	120	
12:45	95.35	25.60	7.66	0.001	6.85	72	66.0	120	
12:48	95.35	25.78	7.67	0.001	6.82	71	66.0	120	
12:51	95.35	25.99	7.67	0.001	6.78	70	66.7	120	
12:54	95.35	26.23	7.66	0.001	6.74	70	67.2	120	
12:57	95.35	26.37	7.68	0.001	6.71	69	65.7	120	
13:00	95.35	26.56	7.69	0.001	6.67	68	67.1	120	
13:03	95.35	26.76	7.69	0.001	6.64	67	66.2	120	
13:06	95.35	26.92	7.70	0.001	6.61	67	66.4	120	
13:09	95.35	27.16	7.34	0.490	4.90	74	4.0	120	
13:12	95.35	25.36	7.48	0.517	5.98	86	6.6	120	
13:15	95.35	22.19	7.27	0.614	5.83	98	4.0	120	
13:18	95.35	20.11	7.07	0.674	5.46	106	3.3	120	

13:21 95.35 19.81 6.99 0.695 5.10 113 2.8 120

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

13:24 95.35 19.69 6.95 0.702 5.01 117 2.5 120



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13:27 95.35 19.56 6.93 0.705 5.02 120 2.0 120

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010 OVM: FID G RID G In Casing (ppm): (Initial) 2.4 (Vented to) atmosphere
 Well ID: MW-17C Purging/Sampling Device: Bladder Pump
 Initial Static Water Level (feet btoc): 94.79 Analytical Parameters: VOCs
 Final Water Level (feet btoc): 94.79 QC Samples Collected: None
 Purge Start Time: 11:33 Sample Number: 5067-4
 Sample Time: 12:00 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 72 psi
 Samplers= Signatures: KJ, WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:36	94.83	24.23	7.24	0.335	4.78	83	134	80	
11:39	94.83	23.80	7.63	0.343	4.96	85	147	80	
11:42	94.83	23.28	7.63	0.353	5.22	95	82.2	80	
11:45	94.83	22.69	7.31	0.438	5.83	99	27.0	80	
11:48	94.83	22.37	7.16	0.491	5.51	102	14.3	80	
11:51	94.83	22.03	7.04	0.542	4.79	103	6.5	80	
11:54	94.83	22.06	7.01	0.552	4.66	104	5.6	80	
11:57	94.83	22.05	6.98	0.559	4.45	105	5.4	80	
12:00	94.83	22.15	6.96	0.566	4.35	105	5.1	80	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010

Well ID: MW-17D

Initial Static Water Level (feet btoc): 94.78

Final Water Level (feet btoc): 94.78

Purge Start Time: 8:50

Sample Time: 10:40

Samplers= Signatures: KJ, WM

OVM: FID G (PID G) In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere

Purging/Sampling Device: Bladder Pump

Analytical Parameters: VOCs

QC Samples Collected: Extra Volume for MS/MSD

Sample Number: 5067-1

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 98 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:10	94.78	22.05	7.30	0.303	6.58	161	82.8	50	
9:15	94.78	19.71	7.21	0.303	5.82	153	97.6	50	
9:20	94.78	19.63	7.17	0.297	5.40	148	172	50	
9:25	94.78	19.73	7.11	0.287	5.16	138	166	50	
9:30	94.78	19.83	7.08	0.279	5.03	132	155	50	
9:35	94.78	19.98	7.06	0.276	4.75	129	139	50	
9:40	94.78	20.24	7.07	0.266	4.33	122	130	50	
9:45	94.78	20.41	7.08	0.264	4.05	119	120	50	
9:50	94.78	20.61	7.08	0.261	3.88	115	112	50	
9:55	94.78	20.79	7.09	0.260	3.66	112	104	50	
10:00	94.78	20.98	7.11	0.256	3.46	108	96.0	50	
10:05	94.78	21.10	7.12	0.254	3.38	106	87.0	50	
10:10	94.78	21.29	7.12	0.252	3.35	103	82.4	50	
10:15	94.78	21.56	7.16	0.254	3.16	98	69.3	50	

10:20 94.78 21.63 7.17 0.253 3.12 98 66.9 50

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

10:25 94.78 21.86 7.18 0.252 3.09 95 64.3



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10:30 94.78 22.08 7.19 0.251 3.04 94 58.6

10:35 94.78 22.32 7.19 0.251 3.06 92 57.2

10:40 94.78 22.50 7.20 0.251 3.04 90 54.0

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010 OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere

Well ID: MW-18A Purging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): 107.28 Analytical Parameters: VOCs

Final Water Level (feet btoc): 107.26 QC Samples Collected: None

Purge Start Time: 16:00 Sample Number: 5067-7

Sample Time: 16:30 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psi

Samplers= Signatures: KJ WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
16:00	107.28	30.75	7.58	0.001	6.21	69	63.3	100	
16:03	107.28	27.90	7.78	0.390	4.04	74	50.3	100	
16:06	107.28	27.65	7.69	0.390	4.16	78	46.3	100	
16:09	107.28	27.02	7.19	0.380	4.87	102	17.6	100	
16:12	107.28	25.27	6.77	0.380	4.89	117	12.1	100	
16:15	107.28	24.73	6.52	0.380	4.61	127	7.4	100	
16:18	107.28	24.36	6.43	0.379	4.50	131	6.1	100	
16:21	107.28	24.39	6.40	0.379	4.26	135	5.0	100	
16:24	107.28	24.04	6.35	0.381	4.02	139	4.4	100	
16:27	107.28	23.93	6.32	0.381	4.24	141	4.0	100	
16:30	107.28	23.86	6.32	0.381	4.15	143	4.0	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010OVM: FID g PID g In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-18CPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 110.02Analytical Parameters: VOCsFinal Water Level (feet btoc): 110.03QC Samples Collected: NonePurge Start Time: 17:00Sample Number: 5067-8Sample Time: 17:21Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 75 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
17:03	110.02	31.50	7.63	0.477	3.36	-14	6.7	75	
17:06	110.02	31.30	7.48	0.477	3.55	-55	5.5	75	
17:09	110.02	31.15	7.24	0.499	3.35	-57	5.0	75	
17:12	110.02	31.15	7.03	0.519	3.08	-58	4.5	75	
17:15	110.02	31.07	6.96	0.548	2.77	-54	4.0	75	
17:18	110.02	31.03	6.91	0.563	2.33	-46	3.8	75	
17:21	110.02	30.98	6.89	0.572	2.19	-38	3.6	75	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010OVM: FID G (PID G) In Casing (ppm): (Initial) 10.0 (Vented to) atmosphereWell ID: MW-18DPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 110.17Analytical Parameters: VOCsFinal Water Level (feet btoc): 110.19QC Samples Collected: NonePurge Start Time: 14:40Sample Number: 5067-6Sample Time: 15:28Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
14:43	110.17	28.04	7.39	0.001	6.54	48	66.8	50	
14:46	110.17	28.16	7.34	0.001	6.59	46	66.0	50	
14:49	110.17	28.33	7.38	0.001	6.51	45	65.3	50	
14:52	110.17	28.00	7.27	0.001	6.43	44	65.2	50	
14:55	110.17	28.22	7.21	0.001	6.51	47	64.6	50	
14:58	110.17	28.56	7.34	0.001	6.45	52	64.4	50	
15:01	110.17	28.95	7.40	0.001	6.45	57	64.6	50	
15:04	110.17	29.22	7.40	0.001	6.38	60	66.1	50	
15:07	110.17	29.10	7.42	0.432	4.26	81	18.3	50	
15:10	110.17	28.54	7.18	0.436	4.22	92	17.4	50	
15:13	110.17	27.73	7.10	0.435	4.05	96	14.7	50	
15:16	110.17	27.69	7.09	0.434	4.02	97	14.7	50	
15:19	110.17	27.57	7.07	0.433	3.71	100	13.6	50	
15:22	110.17	27.50	7.04	0.434	3.68	99	12.7	50	
15:25	110.17	27.56	7.04	0.434	3.53	101	12.2	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

15:28 110.17 27.55 7.04 0.433 3.44 102 11.5 50



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010Well ID: mw19A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1625Sample Time: 1651Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 50168-34Controller Settings: Recharge: 5.5 secs Discharge: 4 secs Pressure: 75 psi

Cycles Per Minute: _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1628	<u>20.72</u>	<u>20.12</u>	<u>7.35</u>	<u>1.07</u>	<u>3.37</u>	<u>41</u>	<u>0.0</u>	<u>75</u>	
1631		<u>19.87</u>	<u>7.34</u>	<u>1.07</u>	<u>3.31</u>	<u>44</u>	<u>0.0</u>	<u>75</u>	
1634		<u>17.67</u>	<u>7.33</u>	<u>1.06</u>	<u>3.71</u>	<u>50</u>	<u>0.0</u>	<u>75</u>	
1637		<u>19.37</u>	<u>7.29</u>	<u>1.06</u>	<u>4.64</u>	<u>61</u>	<u>0.0</u>	<u>75</u>	
1640		<u>19.24</u>	<u>7.28</u>	<u>1.06</u>	<u>4.86</u>	<u>66</u>	<u>0.0</u>	<u>75</u>	
1643		<u>19.25</u>	<u>7.27</u>	<u>1.06</u>	<u>5.31</u>	<u>72</u>	<u>0.0</u>	<u>75</u>	
1646		<u>19.40</u>	<u>7.26</u>	<u>1.06</u>	<u>5.22</u>	<u>78</u>	<u>0.0</u>	<u>75</u>	
1649		<u>19.50</u>	<u>7.25</u>	<u>1.06</u>	<u>5.57</u>	<u>80</u>	<u>0.0</u>	<u>75</u>	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010Well ID: MW-1A 19C

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 0843Sample Time: 0925Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-35Controller Settings: Recharge: 10 secs Discharge: 6 secs Pressure: 75 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:46		9.49	7.56	0.809	3.00	-89	0.0	100	
8:49		9.46	7.35	0.806	0.12	-48	0.0	100	
8:52		9.45	7.18	0.803	0.23	-9	0.0	100	
8:55		9.41	7.03	0.801	0.61	28	0.0	100	
8:58		9.40	7.02	0.800	0.91	46	0.0	100	
9:01		9.38	7.00	0.799	1.23	59	0.0	100	
9:04		9.37	6.97	0.799	1.57	69	0.0	100	
9:07		9.38	6.97	0.798	1.87	76	0.0	100	
9:10		9.35	6.98	0.799	2.20	81	0.0	100	
9:13		9.39	6.99	0.798	2.44	85	0.0	100	
9:16		9.46	6.94	0.799	3.07	89	0.0	100	
9:19		9.51	6.98	0.799	3.02	90	0.0	100	
9:22		9.55	6.99	0.799	3.18	92	0.0	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010Well ID: MW20A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1535Sample Time: 1557Samplers= Signatures: g/aOVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-36Controller Settings: Recharge: 6.5 secs Discharge: 4 secs Pressure: 70 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1540		18.80	7.55	0.824	3.17	-75	3.8	75	
1543		18.10	7.26	0.820	1.40	-97	2.4	75	
1546		17.55	7.34	0.818	1.05	-113	1.5	75	
1549		16.77	7.23	0.817	0.66	-127	0.4	75	
1552		16.37	7.21	0.817	0.48	-133	0.0	75	
1555		16.20	7.23	0.816	0.35	-135	0.0	75	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010Well ID: MW 20-C

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: +555 AF 9/26/10 1530Sample Time: 1555Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-34Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 2010 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1535		11.51	7.23	0.660	7.15	719.49	0.0	250	
1538		11.73	7.25	0.581	7.06	61	0.0	250	
1541		11.77	7.25	0.682	6.99	70	0.0	250	
1544		11.67	7.25	0.682	7.01	76	0.0	250	
1547		11.73	7.26	0.681	6.91	82	0.0	250	
1550		11.71	7.26	0.682	6.89	84	0.0	250	
1553		11.74	7.26	0.680	6.88	86	0.0	250	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010Well ID: MW 20-D

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1435Sample Time: 1515Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-33Controller Settings: Recharge: 7 secs Discharge: 6 secs Pressure: 105 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1440		12.08	6.78	0.206	0.00	-208	5.6	200	
1443		12.07	6.89	0.643	0.00	-218	5.2	200	
1446		12.10	6.90	0.643	0.00	-219	5.7	200	
1455		12.76	6.76	0.652	0.40	-201	5.0	200	
1458		11.98	6.72	0.653	0.07	-190	4.4	200	
1501		11.78	6.73	0.647	0.00	-198	3.4	200	
1504		11.68	6.82	0.644	0.00	-202	2.6	200	
1507		11.63	6.89	0.644	0.00	-198	2.4	200	
1510		11.63	6.93	0.640	0.00	-188	2.1	200	
1513		11.69	6.96	0.639	0.01	-183	2.0	200	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010Well ID: MW 20-E

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1325Sample Time: 1423Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-32Controller Settings: Recharge: 9.5 secs Discharge: 5.5 secs Pressure: 110 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1333		11.78	6.56	0.583	2.75	-92	0.0	125	
1336		11.61	6.83	0.586	5.47	-81	0.0	125	
1339		11.47	7.25	0.587	6.63	-56	0.0	125	
1342		11.43	6.73	0.587	6.81	-39	0.0	125	
1345		11.42	7.58	0.586	6.67	-20	0.0	125	
1348		11.41	7.65	0.586	6.66	-4	0.0	125	
1351		11.50	7.70	0.584	6.61	11	0.0	125	
1354		11.51	7.77	0.585	7.30	31	0.0	125	
1357		11.48	7.77	0.583	6.61	44	0.0	125	
1400		11.53	7.78	0.581	6.67	53	0.0	125	
1403		11.47	7.80	0.579	6.60	60	0.0	125	
1406		11.58	7.83	0.576	6.38	66	0.0	125	
1409		11.54	7.82	0.576	6.43	72	0.0	125	
1412		11.51	7.81	0.575	6.48	76	0.0	125	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010Well ID: MW20 20 E continued

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1325Sample Time: 1423Samplers= Signatures: gkOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-32Controller Settings: Recharge: 9.5 secs Discharge: 5.5 secs Pressure: 110 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1415		11.41	7.84	0.572	6.47	80	0.0	125	
1418		11.53	7.84	0.571	6.41	83	0.0	125	
1421		11.54	7.85	0.571	6.42	86	0.0	125	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010

Well ID: MW 30-A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1645 1711

Sample Time: 1742

Samplers= Signatures: _____

OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) _____ (Vented to) atmosphere

Purging/Sampling Device: Bladder Pump

Analytical Parameters: VOCs

QC Samples Collected: Field Duplicate

Sample Number: 5845 5068-7 5068-7FD

Controller Settings: Recharge: 7.1 secs Discharge: 5.0 secs Pressure: 80 psi

Cycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
17:11		20.48							
17:11		20.48	7.04	0.798	0.52	-212	2.2	150	
17:14		18.97	7.06	0.802	1.09	-196	0.4	150	
17:17		18.55	7.11	0.803	1.86	-177	0.0	150	
17:20		18.06	7.14	0.806	2.54	-163	0.0	150	
17:23		17.82	7.16	0.810	2.93	-152	0.0	150	
17:26		17.50	7.18	0.810	3.28	-144	0.0	150	
17:29		17.40	7.20	0.811	3.55	-137	0.0	150	
17:32		17.23	7.20	0.811	4.01	-125	0.0	150	
17:35		17.08	7.22	0.811	4.23	-126	0.0	150	
17:38		17.08 17.18	7.24	0.811	4.40	-115	0.0	150	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 8/22/2010Well ID: MW 30-C

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): 1630 AFg/22/10Purge Start Time: 1555Sample Time: 1630Samplers= Signatures: GWOVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-6Controller Settings: Recharge: 6 secs Discharge: 7 secs Pressure: 75 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1558		19.90	8.05	0.717	8.51	-166	0.0	110	
16:01		19.12	8.08	0.719	8.91	-154	0.0	110	
16:04		18.97	8.11	0.716	9.26	-143	0.0	110	
16:07		18.90	8.14	0.714	9.47	-135	0.0	110	
16:10		18.51	8.16	0.716	10.26	-121	0.0	110	
16:13		18.53	8.17	0.714	10.05	-114	0.0	110	
16:16		18.41	8.16	0.717	10.09	-99	0.0	110	
16:19		18.43	8.17	0.717	10.13	-91	0.0	110	
16:22		18.71	8.17	0.712	10.05	-79	0.0	110	
16:25		19.02	8.16	0.707	10.02	-70	0.0	110	
16:28		18.79	8.16	0.715	10.12	-70	0.0	110	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010Well ID: MW30 D

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1359Sample Time: 1508Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-5Controller Settings: Recharge: 6 secs Discharge: 7 secs Pressure: 90 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1406	1235	17.75	6.26	0.754	0.12	-281	9.0	180	
1409		17.53	6.18	0.783	0.00	-270	7.1	180	
1412		17.39	6.15	0.785	0.00	-265	9.2	180	
1415		17.37	6.21	0.777	0.00	-257	7.0	180	
1418		17.32	6.24	0.775	0.05	-256	11.2	180	
1421		17.29	6.27	0.775	0.08	-254	9.2	180	
1424		17.31	6.32	0.772	0.21	-250	7.6	180	
1427		17.30	6.33	0.768	0.23	-248	4.2	180	
1430		17.21	6.37	0.768	0.29	-246	7.0	180	
1433		17.16	6.41	0.765	0.44	-243	8.0	180	
1436		17.11	6.45	0.768	0.69	-238	4.0	180	
1439		17.09	6.47	0.762	0.75	-237	4.9	180	
1442		17.25	6.52	0.753	0.90	-232	2.5	180	
1445		17.26	6.57	0.754	1.06	-228	6.4	180	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/10OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmosphereWell ID: MW30-B continuedPurging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): _____

Analytical Parameters: VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: NonePurge Start Time: 1359Sample Number: 50685Sample Time: 1508Controller Settings: Recharge: 16 secs Discharge: 4 secs Pressure: 80 psiSamplers= Signatures: AF CIVCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1448		17.25	6.61	0.750	1.49	-225	5.7	180	
1451		17.29	6.62	0.748	1.49	-225	5.0	180	
1454		17.27	6.66	0.754	1.76	-222	6.4	180	
1457		17.25	6.70	0.743	1.88	-220	4.6	180	
1500		17.28	6.74	0.745	2.23	-217	5.4	180	
1503		17.08	6.77	0.747	2.45	-214	5.0	180	
1506		17.01	6.78	0.743	2.50	-214	5.4	180	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/10Well ID: MW-30E

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1315Sample Time: 1353Samplers= Signatures: [Signature]OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 5068-4Controller Settings: Recharge: 6 secs Discharge: 7 secs Pressure: 90 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1323		19.87	6.42	0.640	1.48	-274	0.0	110	
1326		19.68	6.65	0.674	5.01	-244	0.0	110	
1329		19.49	6.98	0.694	7.66	-232	0.0	110	
1332		19.45	7.23	0.698	9.68	-221	0.0	110	
1335		19.39	7.46	0.698	10.44	-210	0.0	110	
1338		19.42	7.59	0.700	9.71	-205	0.0	110	
1341		19.51	7.66	0.703	7.92	-203	0.0	110	
1344		19.37	7.72	0.702	10.13	-202	0.0	110	
1347		19.37	7.76	0.700	10.09	-201	0.0	110	
1350		19.50	7.78	0.699	10.13	-200	0.0	110	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/10Well ID: NW31A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1225Sample Time: 1255Samplers= Signatures: [Signature]OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) _____ (Vented to) atmospherePurging/Sampling Device: Bladder PumpAnalytical Parameters: VOCsQC Samples Collected: NoneSample Number: 560410 5068-3Controller Settings: Recharge: 8 secs Discharge: 5 secs Pressure: 80 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:35		24.44	6.92	0.880	4.10	-88	0.0	100	
12:38		24.01	6.93	0.885	2.75	-87	0.0	100	
12:41		23.38	6.87	0.881	1.83	-90	0.9	100	
12:44		22.54	6.86	0.883	1.08	-98	0.8	100	
12:47		21.94	6.87	0.893	0.81	-103	0.7	100	
12:50		21.32	6.89	0.896	0.63	-108	0.3	100	
12:53		21.25	6.91	0.898	0.57	-111	0.1	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/22/2010OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmosphereWell ID: MW31CPurging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): _____

Analytical Parameters: VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: ms/msdPurge Start Time: 1150Sample Number: 5068-2Sample Time: 1215Controller Settings: Recharge: 4.8 secs Discharge: 5.1 secs Pressure: 80 psiSamplers= Signatures: AF JVCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:53		22.60	6.61	0.370	5.88	-58	0.0	120	
11:56		22.04	6.90	0.367	5.00	-64	0.0	120	
11:59		21.98	7.04	0.366	4.74	-12	0.0	120	
12:02		22.08	7.17	0.364	4.46	-18	0.0	120	
12:05		21.51	7.23	0.368	4.48	-21	0.0	120	
12:08		21.43	7.25	0.368	4.46	-18	0.6	120	
12:11		20.92	7.26	0.372	4.62	-23	0.0	120	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010OVM: FID G PID In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: WW-41D1Purging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 121.40Analytical Parameters: VOCsFinal Water Level (feet btoc): 121.40QC Samples Collected: NonePurge Start Time: 12:00Sample Number: 5067-29Sample Time: 12:45Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiSamplers- Signatures: KJ. WmCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:03	121.40	21.79	7.81	0.001	7.46	136	65.6	50	
12:06	121.40	21.91	7.73	0.001	7.46	137	65.4	50	
12:09	121.40	22.06	7.83	0.001	7.43	135	65.5	50	Wait for water to reach sensors
12:21	121.40	22.63	7.74	0.206	4.42	135	7.4	50	Water is to sensors
12:24	121.40	22.79	7.32	0.360	3.87	153	7.4	50	
12:27	121.40	22.75	7.53	0.366	3.87	152	8.0	50	
12:30	121.40	22.64	7.66	0.367	3.95	153	6.8	50	
12:33	121.40	22.59	7.77	0.369	3.96	153	5.9	50	
12:36	121.40	22.60	7.86	0.369	3.97	153	5.4	50	
12:39	121.40	22.60	7.91	0.371	3.99	153	5.8	50	
12:42	121.40	22.56	7.96	0.372	4.03	153	5.9	50	
12:45	121.40	22.58	7.99	0.373	4.06	152	6.2	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-41D2Purging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 121.15Analytical Parameters: VOCsFinal Water Level (feet btoc): 121.15QC Samples Collected: NonePurge Start Time: 13:27Sample Number: 5067-30Sample Time: 13:45Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
13:30	121.15	23.79	8.19	0.321	4.47	141	30.6	75	
13:33	121.15	23.55	8.32	0.321	4.49	139	29.4	75	
13:36	121.15	23.70	8.38	0.319	4.50	139	28.6	75	
13:39	121.15	23.83	8.39	0.316	4.50	137	29.1	75	
13:42	121.15	24.00	8.42	0.314	4.88	136	28.0	75	
13:45	121.15	24.24	8.45	0.312	4.99	136	27.4	75	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010 OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere

Well ID: MW-42D Purging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): 123.22 Analytical Parameters: VOCs

Final Water Level (feet btoc): 123.22 QC Samples Collected: None

Purge Start Time: 9:50^{AM} 10:45 Sample Number: 5067-17

Sample Time: 12:09 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 psi

Samplers= Signatures: KJ, WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
10:48	123.22	18.66	7.02	0.384	11.93	148	109	50	
10:51	123.22	18.34	6.92	0.393	10.97	149	149	50	
10:54	123.22	18.05	6.87	0.418	10.00	149	144	50	
10:57	123.22	18.03	6.84	0.431	9.15	149	160	50	
11:00	123.22	17.88	6.81	0.441	8.25	147	158	50	
11:03	123.22	17.95	6.80	0.442	8.01	147	156	50	
11:06	123.22	18.00	6.80	0.445	7.77	146	154	50	
11:09	123.22	18.05	6.80	0.447	7.45	146	144	50	
11:12	123.22	18.15	6.81	0.447	7.28	146	138	50	
11:15	123.22	18.18	6.79	0.447	7.38	145	132	50	
11:18	123.22	18.30	6.81	0.448	7.17	144	120	50	
11:21	123.22	18.35	6.81	0.449	7.11	144	107	50	
11:24	123.22	18.41	6.81	0.449	7.15	144	101	50	
11:27	123.22	18.49	6.82	0.449	6.92	142	89.4	50	
11:30	123.22	18.61	6.82	0.449	6.75	142	80.9	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

11:33	123.22	18.64	6.82	0.449	6.82	143	78.8	50	
11:36	123.22	18.77	6.83	0.449	6.96	141	72.4	50	
11:39	123.22	18.83	6.82	0.449	6.69	141	69.8	50	
11:42	123.22	18.90	6.83	0.449	6.72	142	67.9	50	
11:45	123.22	19.31	6.83	0.449	7.00	140	57.0	50	

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

Continued on Back →

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-42EPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 123.33Analytical Parameters: VOCsFinal Water Level (feet btoc): 123.32QC Samples Collected: NonePurge Start Time: 8:20Sample Number: 5067-16Sample Time: 9:02Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psiSamplers= Signatures: KJ, WIMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:23	123.33	21.52	5.22	0.013	14.12	261	110	80	
8:26	123.33	21.63	6.68	0.446	9.59	206	37.4	80	
8:29	123.33	16.02	6.92	0.486	10.41	212	16.0	80	
8:32	123.33	16.60	7.10	0.457	11.29	210	15.5	80	
8:35	123.33	16.10	7.32	0.449	9.78	216	13.8	80	
8:38	123.33	16.13	7.39	0.429	9.71	208	14.4	80	
8:41	123.33	15.59	7.32	0.419	11.48	202	12.3	80	
8:44	123.33	15.93	7.23	0.407	11.51	196	12.7	80	
8:47	123.33	15.83	7.13	0.402	11.86	190	12.7	80	
8:50	123.33	15.55	7.06	0.400	10.49	185	12.3	80	
8:53	123.33	15.84	7.00	0.393	9.68	183	11.8	80	
8:56	123.33	15.84	6.95	0.388	9.09	180	13.8	80	
8:59	123.33	15.95	6.92	0.384	8.73	178	15.3	80	
9:02	123.33	15.70	6.89	0.383	8.89	175	14.3	80	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-43DPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 127.98Analytical Parameters: VOCsFinal Water Level (feet btoc): 127.98QC Samples Collected: NonePurge Start Time: 14:55Sample Number: 5067-19Sample Time: 15:16Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
14:58	127.98	31.26	8.11	0.355	8.27	118	3.8	50	
15:01	127.98	31.33	8.13	0.353	7.89	115	4.4	50	
15:04	127.98	31.43	8.15	0.349	8.20	114	6.4	50	
15:07	127.98	31.42	8.18	0.347	7.74	112	7.0	50	
15:10	127.98	31.36	8.20	0.344	8.00	111	8.2	50	
15:13	127.98	31.33	8.20	0.344	7.80	110	8.0	50	
15:16	127.98	31.39	8.22	0.341	7.36	110	8.8	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010 OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere

Well ID: MW-43E Purging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): 127.91 Analytical Parameters: VOCs

Final Water Level (feet btoc): 127.91 QC Samples Collected: None

Purge Start Time: 13:35 Sample Number: 5067-18

Sample Time: 14:14 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psi

Samplers= Signatures: KJ WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
13:38	127.91	26.60	7.46	0.000	12.42	144	57.8	50	
13:41	127.91	26.92	7.36	0.373	8.48	140	14.6	50	
13:44	127.91	28.26	7.62	0.363	7.82	138	14.6	50	
13:47	127.91	28.60	7.97	0.360	7.52	134	11.4	50	
13:50	127.91	29.06	8.25	0.356	7.42	129	8.1	50	
13:53	127.91	29.10	8.25	0.356	7.73	128	8.3	50	
13:56	127.91	29.19	8.26	0.356	7.79	127	7.7	50	
13:59	127.91	29.48	8.35	0.354	7.53	123	6.4	50	
14:02	127.91	29.58	8.37	0.354	6.72	123	6.6	50	
14:05	127.91	29.82	8.41	0.353	7.16	121	6.2	50	
14:08	127.91	30.02	8.43	0.353	7.88	119	5.7	50	
14:11	127.91	30.17	8.44	0.352	8.39	117	5.3	50	
14:14	127.91	30.38	8.45	0.352	7.83	117	5.6	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010OVM: FID G (PID G) In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-44EPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 111.63Analytical Parameters: VOCsFinal Water Level (feet btoc): 111.63QC Samples Collected: NonePurge Start Time: 9:47Sample Number: 5067-28Sample Time: 10:56Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:50	111.63	20.53	7.10	0.099	7.45	131	34.7	50	
9:53	111.63	19.73	7.23	0.292	5.34	130	20.1	50	
9:56	111.63	17.74	7.52	0.294	5.21	132	10.3	50	
9:59	111.63	17.71	7.69	0.292	5.13	133	7.6	50	
10:02	111.63	17.59	7.72	0.292	5.16	133	7.3	50	
10:05	111.63	17.57	7.82	0.291	5.23	132	6.6	50	
10:08	111.63	17.56	7.95	0.290	5.17	131	6.5	50	
10:11	111.63	17.16	8.06	0.290	6.32	130	6.8	50	
10:14	111.63	16.83	8.05	0.287	5.92	131	4.9	50	
10:17	111.63	16.72	7.89	0.286	5.89	135	4.5	50	
10:20	111.63	16.44	7.71	0.287	5.82	137	4.6	50	
10:23	111.63	16.57	7.58	0.285	5.44	139	5.8	50	
10:26	111.63	16.41	7.45	0.286	4.95	142	6.4	50	
10:29	111.63	16.49	7.36	0.286	4.42	146	6.2	50	
10:32	111.63	16.42	7.36	0.287	4.15	147	6.5	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

10:35 111.63 16.52 7.26 0.286 3.82 149 6.5 50

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10:38 111.63 16.58 7.23 0.287 3.57 152 8.3 50

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010OVM: FID ☐ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-44DPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 111.63Analytical Parameters: VOCsFinal Water Level (feet btoc): 111.63QC Samples Collected: NonePurge Start Time: 8:17Sample Number: 5067-27Sample Time: 9:05Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
8:20	111.63	22.79	5.15	0.205	7.10	269	3.8	150	
8:23	111.63	17.03	6.62	0.527	6.04	226	5.1	150	
8:26	111.63	16.47	6.72	0.480	6.23	224	4.6	150	
8:29	111.63	16.50	6.94	0.420	5.74	223	27.6	150	
8:32	111.63	16.10	6.95	0.406	5.72	216	99.7	150	
8:35	111.63	16.25	6.87	0.382	6.87	200	100	150	
8:38	111.63	15.93	6.80	0.364	6.30	190	94.3	150	
8:41	111.63	15.76	6.74	0.359	5.77	184	88.0	150	
8:44	111.63	15.84	6.70	0.355	5.01	177	76.5	150	
8:47	111.63	15.91	6.69	0.350	4.51	172	65.4	150	
8:50	111.63	15.98	6.68	0.346	4.16	168	59.2	150	
8:53	111.63	16.13	6.69	0.343	3.90	165	51.9	150	
8:56	111.63	16.10	6.70	0.343	3.81	161	47.5	150	
8:59	111.63	16.19	6.70	0.342	3.68	159	45.2	150	
9:02	111.63	16.16	6.72	0.342	3.62	157	46.2	150	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

9:05 111.63 16.06 6.71 0.342 3.46 155 47.4 150



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PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010 OVM: FID G (PID G) In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere
 Well ID: MW-45C Purging/Sampling Device: Bladder Pump
 Initial Static Water Level (feet btoc): 103.76 Analytical Parameters: VOCs
 Final Water Level (feet btoc): 103.76 QC Samples Collected: 5067-39 FD
 Purge Start Time: 12:00 Sample Number: 5067-39
 Sample Time: 12:27 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 75 psi
 Samplers= Signatures: KJ, WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:03	103.76	22.29	7.00	0.518	6.05	1167	21.2	100	
12:06	103.76	22.52	7.28	0.529	5.91	1162	22.6	100	
12:09	103.76	22.65	7.34	0.498	6.30	1165	25.4	100	
12:12	103.76	22.69	7.38	0.483	6.49	1166	29.1	100	
12:15	103.76	22.69	7.44	0.475	6.46	1168	30.4	100	
12:18	103.76	22.85	7.49	0.460	6.62	1168	26.2	100	
12:21	103.76	23.10	7.50	0.455	5.36	1170	24.7	100	
12:24	103.76	23.35	7.48	0.459	5.29	1170	23.2	100	
12:27	103.76	23.52	7.41	0.461	4.92	1171	24.5	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010

OVM: FID G ☒ FID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere

Well ID: MW-45D

Purging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): 103.39

Analytical Parameters: VOCs

Final Water Level (feet btoc): 103.39

QC Samples Collected: None

Purge Start Time: 12:57

Sample Number: 5067-41

Sample Time: 13:21

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 40 psi

Samplers= Signatures: KJ, WM

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
13:00	103.39	24.50	7.46	0.484	5.88	169	31.4	100	
13:03	103.39	24.34	7.53	0.469	5.83	169	45.4	100	
13:06	103.39	24.27	7.56	0.444	5.93	171	46.5	100	
13:09	103.39	24.28	7.67	0.433	6.43	169	45.6	100	
13:12	103.39	24.29	7.76	0.418	6.30	168	45.5	100	
13:15	103.39	24.41	7.83	0.408	6.31	167	44.5	100	
13:18	103.39	24.50	7.89	0.396	6.28	165	44.7	100	
13:21	103.39	24.55	7.87	0.393	5.86	167	43.6	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010OVM: FID G PID In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-46D1Purging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 115.95Analytical Parameters: VOCsFinal Water Level (feet btoc): 115.95QC Samples Collected: NonePurge Start Time: 9:47Sample Number: 5067-22Sample Time: 10:29Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 85 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
9:50	115.95	22.56	4.82	0.005	8.93	288	65.2	50	
9:53	115.95	22.67	4.85	0.005	8.89	288	68.1	50	
9:56	115.95	22.73	4.87	0.005	8.87	288	65.5	50	
9:59	115.95	22.78	4.87	0.303	8.84	287	0.0	50	
10:02	115.95	22.55	6.47	0.833	6.38	202	0.0	50	
10:05	115.95	22.11	7.53	0.773	6.51	185	0.0	50	
10:08	115.95	21.98	7.93	0.763	7.03	187	0.0	50	
10:11	115.95	21.92	8.20	0.757	7.08	189	0.0	50	
10:14	115.95	21.96	8.37	0.752	6.92	190	0.0	50	
10:17	115.95	21.94	8.51	0.750	7.05	190	0.0	50	
10:20	115.95	21.90	8.64	0.749	6.95	190	0.0	50	
10:23	115.95	21.83	8.74	0.749	7.10	191	0.0	50	
10:26	115.95	21.80	8.76	0.746	6.95	191	0.0	50	
10:29	115.95	21.70	8.78	0.732	7.21	191	0.0	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/24/2010OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 00 (Vented to) atmosphereWell ID: MW-46D2Purging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 116.17Analytical Parameters: VOCsFinal Water Level (feet btoc): 116.17QC Samples Collected: 5067-20 FDPurge Start Time: 16:10Sample Number: 5067-20Sample Time: 17:19Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
116:13	116.17	32.15	8.21	0.341	6.48	113	19.2	75	
116:16	116.17	31.99	8.27	0.348	6.56	112	76.7	75	
116:19	116.17	31.95	8.35	0.355	6.89	113	138	75	
116:22	116.17	31.51	8.39	0.358	6.56	113	150	75	
116:25	116.17	31.62	8.42	0.360	7.20	114	169	75	
116:28	116.17	31.31	8.45	0.366	7.18	115	195	75	
116:31	116.17	30.92	8.47	0.366	7.40	116	204	75	
116:34	116.17	30.55	8.43	0.369	8.03	117	213	75	Ran out of Nitrogen
116:40	116.17	30.98	8.27	0.372	6.79	122	146	75	Resume Pumping
116:43	116.17	31.09	7.94	0.383	7.42	126	112	75	
116:46	116.17	31.09	7.79	0.385	6.78	127	94.7	75	
116:49	116.17	31.09	7.66	0.387	6.65	129	87.9	75	
116:52	116.17	31.10	7.54	0.391	6.63	131	74.0	75	
116:55	116.17	31.00	7.42	0.399	6.77	132	61.8	75	
116:58	116.17	30.97	7.32	0.406	6.50	133	46.3	75	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

17:01	116.17	30.90	7.25	0.409	6.48	134	40.2	
17:04	116.17	30.76	7.16	0.413	6.48	136	35.6	
17:07	116.17	30.60	7.15	0.414	6.40	136	38.3	75
17:10	116.17	30.23	7.06	0.420	6.20	136	30.0	75

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

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Time	WL	Temp	pH	SC	DO	ORP	Turb	Flow
17:13	116.17	30.28	7.05	0.420	6.19	137	28.2	75
17:16	116.17	30.00	7.01	0.423	6.15	137	29.4	75
17:19	116.17	29.71	7.00	0.423	6.02	137	30.8	75

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010
 Well ID: MW-104A
 Initial Static Water Level (feet btoc): 105.27
 Final Water Level (feet btoc): 105.28
 Purge Start Time: 15:10
 Sample Time: 15:34
 Samplers= Signatures: KJ, WM

OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere
 Purging/Sampling Device: Bladder Pump
 Analytical Parameters: VOCs
 QC Samples Collected: None
 Sample Number: 5067-R¹⁵
 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psi
 Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
15:13	105.27	24.22	7.95	0.421	5.25	63	1.1	150	
15:16	105.27	23.87	7.70	0.482	5.22	76	0.0	150	
15:19	105.27	20.62	7.04	0.783	5.26	89	0.0	150	
15:22	105.27	19.94	6.88	0.853	5.09	95	0.0	150	
15:25	105.27	19.54	6.82	0.872	4.96	97	0.0	150	
15:28	105.27	18.82	6.75	0.888	4.66	101	0.0	150	
15:31	105.27	18.43	6.72	0.894	4.64	103	0.0	150	
15:34	105.27	18.36	6.70	0.894	4.56	105	0.0	150	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010 OVM: FID g PID g In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere
 Well ID: MW-104C Purging/Sampling Device: Bladder Pump
 Initial Static Water Level (feet btoc): 108.10 Analytical Parameters: VOCs
 Final Water Level (feet btoc): 108.12 QC Samples Collected: None
 Purge Start Time: 14:20 Sample Number: 5067-13th 14
 Sample Time: 14:41 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 75 psi
 Samplers= Signatures: KJ. WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
14:23	108.10	23.40	7.41	0.323	3.22	75	1.3	50	
14:26	108.10	23.70	7.59	0.332	3.65	72	1.3	50	
14:29	108.10	23.89	7.78	0.332	3.78	69	0.8	50	
14:32	108.10	24.16	7.89	0.338	4.05	66	0.9	50	
14:35	108.10	24.45	8.05	0.345	4.36	63	1.1	50	
14:38	108.10	24.72	8.13	0.342	4.04	60	0.8	50	
14:41	108.10	25.04	8.07	0.346	4.62	58	0.8	50	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/23/2010OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-104DPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 107.91Analytical Parameters: VOCsFinal Water Level (feet btoc): 107.91QC Samples Collected: NonePurge Start Time: 13:20Sample Number: 5067-13Sample Time: 13:47Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
13:23	107.91	23.53	7.08	0.395	3.82	106	7.1	150	
13:26	107.91	22.72	7.33	0.357	4.15	99	4.1	150	
13:29	107.91	21.88	7.66	0.315	4.75	96	1.5	150	
13:32	107.91	21.20	7.65	0.309	5.07	97	0.1	150	
13:35	107.91	20.51	7.40	0.296	5.21	97	0.0	150	
13:38	107.91	20.49	7.24	0.290	4.22	96	0.0	150	
13:41	107.91	20.38	7.19	0.288	3.78	95	0.0	150	
13:44	107.91	20.27	7.14	0.286	3.65	93	0.3	150	
13:47	107.91	20.32	7.13	0.286	3.44	92	0.4	150	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/27/2010

Well ID: MW 105 A

Initial Static Water Level (feet btoc): 120.32

Final Water Level (feet btoc): 120.17

Purge Start Time: 1040

Sample Time: 1113

Samplers= Signatures: [Signature]

OVM: FID G PID G In Casing (ppm): (Initial) _____ (Vented to) atmosphere

Purging/Sampling Device: Bladder Pump

Analytical Parameters: VOCs

QC Samples Collected: None

Sample Number: 5067-34

Controller Settings: Recharge: 15 secs Discharge: 150 secs Pressure: 110 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1048	120.16	12.26	7.22	0.897	5.65	122	9.4	125	
1051	120.15	12.06	7.20	0.908	6.07	122	9.2	125	
1054	120.16	12.21	7.14	0.913	5.71	122	8.4	125	
1057	120.16	12.48	7.14	0.911	6.06	123	8.6	125	
1100	120.17	12.55	7.16	0.910	6.01	125	8.3	125	
1103	120.17	12.62	7.12	0.906	5.68	126	8.1	125	
1106	120.17	12.67	7.17	0.904	5.70	127	7.7	125	
1110	120.17	12.84	7.15	0.915	5.42	127	7.8	125	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010

OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-105CPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 122.30Analytical Parameters: VOCsFinal Water Level (feet btoc): 122.30QC Samples Collected: 5067-32 FDPurge Start Time: 16:45Sample Number: 5067-32Sample Time: 17:18Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psiSamplers= Signatures: KJ, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
16:51	122.30	32.40	7.68	0.342	4.18	128	2.3	75	
16:54	122.30	23.70	7.69	0.398	5.23	139	1.8	75	
16:57	122.30	23.96	7.75	0.385	5.21	146	1.0	75	
17:00	122.30	22.57	7.57	0.403	5.32	150	0.0	75	
17:03	122.30	21.52	7.16	0.476	5.77	154	0.0	75	
17:06	122.30	21.22	6.86	0.528	5.36	157	0.0	75	
17:09	122.30	20.22	6.77	0.546	4.85	158	0.0	75	
17:12	122.30	19.90	6.68	0.556	4.55	159	0.0	75	
17:15	122.30	19.71	6.62	0.561	4.36	160	0.0	75	
17:18	122.30	20.14	6.59	0.566	4.29	161	0.0	75	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/26/2010OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-105DPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 122.20Analytical Parameters: VOCsFinal Water Level (feet btoc): 122.20QC Samples Collected: NonePurge Start Time: 15:20Sample Number: 5067-31Sample Time: 16:05Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiSamplers= Signatures: KS, WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
15:23		28.26	8.43	0.339	4.72	126	1.1	50	
15:26		27.87	8.50	0.340	4.76	127	0.6	50	
15:29		27.30	8.54	0.342	5.33	124	0.8	50	
15:32		27.27	8.57	0.338	5.34	124	2.2	50	
15:35		26.95	8.58	0.338	4.76	122	3.2	50	
15:38		26.81	8.33	0.338	4.70	124	1.6	50	
15:41		26.53	7.99	0.342	4.88	128	0.1	50	
15:44		26.44	7.66	0.342	4.82	130	0.0	50	
15:47		26.38	7.64	0.343	4.78	130	0.0	50	
15:50		26.04	7.51	0.344	4.54	131	0.0	50	
15:53		25.90	7.41	0.344	4.34	132	0.0	50	
15:56		25.70	7.33	0.345	4.32	133	0.0	50	
15:59		25.86	7.26	0.346	4.15	134	0.0	50	
16:02		25.33	7.21	0.344	3.95	134	0.0	50	

16:05 25.29 7.17 0.345 3.82 134 0.0 50

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010 OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere
 Well ID: MW-106A Purging/Sampling Device: Bladder Pump
 Initial Static Water Level (feet btoc): 121.28 Analytical Parameters: VOCs
 Final Water Level (feet btoc): 121.28 QC Samples Collected: None
 Purge Start Time: 13:40 Sample Number: 5067-25
 Sample Time: 14:10 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 65 psi
 Samplers= Signatures: KJ, WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
13:43	121.28	21.85	8.18	0.538	6.17	133	0.0	75	
13:46	121.28	21.05	8.59	0.556	6.20	133	0.5	75	
13:49	121.28	20.76	8.29	0.571	6.52	141	0.0	75	
13:52	121.28	20.43	7.73	0.598	6.58	147	0.0	75	
13:55	121.28	19.93	7.52	0.605	6.52	149	0.0	75	
13:58	121.28	19.80	7.36	0.611	6.13	150	0.0	75	
14:01	121.28	19.41	7.25	0.615	5.92	151	0.0	75	
14:04	121.28	19.36	7.20	0.617	5.86	152	0.0	75	
14:07	121.28	19.27	7.16	0.617	5.50	153	0.0	75	
14:10	121.28	19.19	7.13	0.620	5.60	155	0.0	75	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010 OVM: FID ☒ PID ☒ In Casing (ppm): (Initial) 0.0 (Vented to) atmosphere

Well ID: MW-106C Purging/Sampling Device: Bladder Pump

Initial Static Water Level (feet btoc): 124.77 Analytical Parameters: VOCs

Final Water Level (feet btoc): 124.77 QC Samples Collected: Extra Volume for MS/MSD

Purge Start Time: 12:35 Sample Number: 5067-24

Sample Time: 13:05 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 psi

Samplers= Signatures: KJ, WM Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
12:38	124.77	21.84	8.73	0.389	5.94	127	0.0	100	
12:41	124.77	20.83	8.06	0.413	7.27	141	0.0	100	
12:44	124.77	19.80	7.58	0.424	7.22	147	0.0	100	
12:47	124.77	19.21	7.34	0.428	6.25	151	0.0	100	
12:50	124.77	19.09	7.15	0.430	5.80	153	0.0	100	
12:53	124.77	19.09	7.05	0.432	5.52	155	0.0	100	
12:56	124.77	19.20	6.97	0.432	5.52	156	0.0	100	
12:59	124.77	19.22	6.91	0.432	5.48	156	0.0	100	
13:02	124.77	19.32	6.87	0.432	5.42	156	0.0	100	
13:05	124.77	19.40	6.84	0.433	5.08	156	0.0	100	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 9/25/2010OVM: FID G PID G In Casing (ppm): (Initial) 0.0 (Vented to) atmosphereWell ID: MW-106DPurging/Sampling Device: Bladder PumpInitial Static Water Level (feet btoc): 124.77Analytical Parameters: VOCsFinal Water Level (feet btoc): 124.77QC Samples Collected: NonePurge Start Time: 11:30Sample Number: 5067-23Sample Time: 11:51Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiSamplers= Signatures: KJ, WJMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
11:33	125.77	22.40	7.59	0.235	6.20	154	2.3	25	
11:36	125.77	24.08	8.49	0.281	5.33	135	2.3	25	
11:39	125.77	24.24	8.55	0.280	5.44	132	1.6	25	
11:42	125.77	24.28	8.64	0.281	5.65	129	1.8	25	
11:45	125.77	24.24	8.68	0.282	5.35	127	1.2	25	
11:48	125.77	24.16	8.72	0.283	5.13	126	0.8	25	
11:51	125.77	24.12	8.73	0.283	5.24	124	1.3	25	

Casing Volume Calculations:

Water Col. X Casing Factor = Gallons per Casing Volume

Casing Factors: 2" diameter well: 0.16 / 4" diameter well: 0.65 / 6" diameter well: 1.47



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

EPA FIELD SHEETS

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print) Brian Zurbuchen		NAME OF SURVEY OR ACTIVITY Garvey Eluvator		DATE OF COLLECTION 22-23 09 2010 DAY MONTH YEAR			SHEET 1 of 1				
CONTENTS OF SHIPMENT											
SAMPLE NUMBER	TYPE OF CONTAINERS					SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
5068-1					1	X					
5068-2					3	X					Extra Volume for ms/msd
5068-3					1	X					
5068-4					1	X					
5068-5					1	X					
5068-6					1	X					
5068-7					1	X					
5068-7D					1	X					Duplicate
5068-9					1	X					
5068-10					1	X					
5068-10D					1	X					Duplicate
5068-12					1	X					
5068-13					1	X					
5068-40-FB					1	X					Trip Blank
5068-40-FB					1	X					Trip Blank
Not Complete Sketches 9/23/10											
DESCRIPTION OF SHIPMENT						MODE OF SHIPMENT					
____ PIECE(S) CONSISTING OF ____ BOX(ES)						☒ COMMERCIAL CARRIER: UPS					
____ ICE CHEST(S); OTHER ____						____ COURIER					
						____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)					
PERSONNEL CUSTODY RECORD											
RELINQUISHED BY (SAMPLER)		DATE		TIME		RECEIVED BY				REASON FOR CHANGE OF CUSTODY	
☒ SEALED ☐ UNSEALED		9-23-10		1745		☐ SEALED ☐ UNSEALED					
RELINQUISHED BY		DATE		TIME		RECEIVED BY				REASON FOR CHANGE OF CUSTODY	
☐ SEALED ☐ UNSEALED						☐ SEALED ☐ UNSEALED					
RELINQUISHED BY		DATE		TIME		RECEIVED BY				REASON FOR CHANGE OF CUSTODY	
☐ SEALED ☐ UNSEALED						☐ SEALED ☐ UNSEALED					

CHAIN OF CUSTODY RECORD

ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print) <i>Brian Zurbuchen</i>	NAME OF SURVEY OR ACTIVITY <i>Garvey Elevator</i>	DATE OF COLLECTION 23 <i>21</i> <i>09</i> <i>2010</i>	SHEET 1 of 2
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CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS					SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	
5068-14					1	X					
5068-14 FD					1	X					Field Duplicate
5068-41 FB					1	X					Trip Blank
5068-16					1	X					
5068-17					1	X					
5068-18					1	X					
5068-19					1	X					
5068-20					1	X					
5068-20 FD					1	X					Field Duplicate
5068-22					1	X					
5068-23					1	X					
5068-24					1	X					
5068-25					1	X					Rinsate Blank
5068-26					1	X					
5068-27					1	X					
5068-28					3	X					Extra volume for MS/MSD
5068-29					1	X					
5068-30					1	X					
5068-31					1	X					Extra volume for MS/MSD
5068-32					1	X					
5068-33					1	X					
5068-34					1	X					
5068-35					1	X					
5068-36					1	X					

DESCRIPTION OF SHIPMENT

MODE OF SHIPMENT

____ PIECE(S) CONSISTING OF ____ BOX(ES)

☒ ICE CHEST(S): OTHER _____

____ COMMERCIAL CARRIER _____

____ COURIER

☒ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) _____

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER) <i>[Signature]</i>	DATE <i>9-28-10</i>	TIME <i>0900</i>	RECEIVED BY <i>[Signature]</i>	REASON FOR CHANGE OF CUSTODY <i>Rec'd at lab</i>
☐ SEALED ☒ UNSEALED			☐ SEALED ☒ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	

CHAIN OF CUSTODY RECORD ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print) <i>Brian Zurbuchen</i>		NAME OF SURVEY OR ACTIVITY <i>Garvey Elevator</i>		DATE OF COLLECTION 24 / 09 / 10 DAY MONTH YEAR			SHEET 2 of 2			
CONTENTS OF SHIPMENT										
SAMPLE NUMBER	TYPE OF CONTAINERS				VOA SET (2 VIALS EA)	SAMPLED MEDIA				RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE		water	soil	sediment	dust	
5068-37					1	X				
<i>ASR complete 9/27/10</i>										
DESCRIPTION OF SHIPMENT					MODE OF SHIPMENT					
_____ PIECE(S) CONSISTING OF _____ BOX(ES) ☒ ICE CHEST(S); OTHER _____					_____ COMMERCIAL CARRIER: _____ _____ COURIER ☒ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) _____					
PERSONNEL CUSTODY RECORD										
RELINQUISHED BY (SAMPLER)		DATE	TIME	RECEIVED BY		REASON FOR CHANGE OF CUSTODY				
<i>[Signature]</i>		9-28-10	0900	<i>R. Wiggan</i>		Rec'd at Lab				
☐ SEALED ☐ UNSEALED				☐ SEALED ☒ UNSEALED						
RELINQUISHED BY		DATE	TIME	RECEIVED BY		REASON FOR CHANGE OF CUSTODY				
☐ SEALED ☐ UNSEALED				☐ SEALED ☐ UNSEALED						
RELINQUISHED BY		DATE	TIME	RECEIVED BY		REASON FOR CHANGE OF CUSTODY				
☐ SEALED ☐ UNSEALED				☐ SEALED ☐ UNSEALED						

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 1 QC Code: __ Matrix: Water Tag ID: 5068-1-__

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW9A

External Sample Number: MW9A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ____

Sample Collection: Start: ____

Longitude: ____

End: 09/24/10 10:11

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

Sample method = Low Flow

temp °C = 16.50

Cond mS/cm = 0.946

DO = mg/L = 0.33

pH = 8.11

ORP = 175

turb NTU = 0.0

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 2 QC Code: Matrix: Water Tag ID: 5068-2-

Project ID: BZA72Z01

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER

Site ID: A72Z Site OU: 01

Location Desc: MW31C

External Sample Number: MW31C

Expected Conc: Low (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/22/10

12:15

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) Extra volume collected for MS/MSD

media = GW

sampling method = Low flow

temp °C = 20.92

cond mS/cm = 0.372

DO mg/L = 4.62

pH = 7.26

ORP = -23

turb NTU = 0.0

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 3 QC Code: Matrix: Water Tag ID: 5068-3-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-31A

External Sample Number: MW-31A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/22/10

12:55

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sampling method =

temp °C = 21.25

cond mS/cm = 0.898

DO mg/L = 0.57

pH = 6.91

ORP = -111

turb NTU = 0.1

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 4 QC Code: __ Matrix: Water Tag ID: 5068-4-__

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-30E

External Sample Number: MW-30E

Expected Conc: Low (or Circle One: ☒ Low Medium High) Date Time(24 hr)

Latitude: ____

Sample Collection: Start: ____/____/____

Longitude: ____

End: 09/22/10

13:53

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sample method = Low flow

temp °C = 19.50

cond ms/cm = 0.699

DO mg/L = 10.13

pH = 7.78

ORP = -200

turb Ntu = 0.0

Sample Collected By: HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5068 **Sample Number:** 5 **QC Code:** ____ **Matrix:** Water **Tag ID:** 5068-5-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW-300

External Sample Number: MW-300

Expected Conc: Low (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ____

Sample Collection: Start: ____

Longitude: ____

End: 09/22/10

15:08

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = low flow
temp = 17.01°C
cond = 0.743 ms/cm
DO = 2.50 mg/L
pH = 6.78
ORP = -214 mV
turb = 5.4 NTU

Sample Collected By: HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5068 Sample Number: 6 QC Code: ____ Matrix: Water Tag ID: 5068-6-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW-30C

External Sample Number: MW-30C

Expected Conc: Low (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 09/22/10 16:30

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
Sampling method = Low flow
temp = 18.79°C
cond = 0.715 mS/cm
DO = 10.12 mg/L
pH = 8.16
ORP = -70 mV
turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5068 Sample Number: 7 QC Code: ___ Matrix: Water Tag ID: 5068-7-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-30A

External Sample Number: MW-30A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/22/10 17:42

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = low flow
temp = 17.18 °C
cond = 0.811 mS/cm
DO = 4.40 mg/L
pH = 7.24
ORP = -115 mV
turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 8 QC Code: Matrix: Water Tag ID: 5068-⁷~~8~~-FD
AF 9/22/10
Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: Duplicate of MW-30A
External Sample Number: Duplicate of MW-30A
Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start:
Longitude: End: 09/22/10 17:42

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

See 5068-7 MW-30A

Sample Collected By: HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5068 Sample Number: 9 QC Code: Matrix: Water Tag ID: 5068-9-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-3E

External Sample Number: MW-3E

Expected Conc: Low (or Circle One: ☒ Low ☐ Medium ☐ High) Date 09/23/10 Time(24 hr) 09:28
Latitude: Sample Collection: Start: End: 09/23/10
Longitude:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = Low flow
temp = 13.40 °C
cond = 0.563
DO = 3.89 mg/L
pH = 7.75
ORP = 56 mV
turb = 0.0 Ntu

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 10 QC Code: ___ Matrix: Water Tag ID: 5068-10-___

Project ID: BZA72Z01

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND
GROUNDWATER

Site ID: A72Z Site OU: 01

Location Desc: MW-3B

External Sample Number: MW-3B

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/23/10

10:58

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

sampling media = GW

sampling method = low flow

temp = 11.26 °C

cond = 0.967 uS/cm

DO = 8.63 mg/L

pH = 9.09

ORP = 133 mV

turb 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 11 QC Code: Matrix: Water Tag ID: 5068-¹⁰~~11~~-FD

Project ID: BZA72Z01

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND
GROUNDWATER

Site ID: A72Z Site OU: 01

Location Desc: Duplicate of MW-3B

External Sample Number: Duplicate of MW-3B

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: / /

 :

Longitude:

End: 09/23/10

10:58

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

See field sheet for MW-3B

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 12 QC Code: __ Matrix: Water Tag ID: 5068-12-__

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-3A

External Sample Number: MW-3A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ____

Sample Collection: Start: ____

Longitude: ____

End: 09/23/10

12:05

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = low flow
temp = 13.95°C
Cond = 0.932 mS/cm
DO = 5.29 mg/L
pH = 7.15
ORP = 134 mV
turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 13 QC Code: __ Matrix: Water Tag ID: 5068-13-__

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-3D

External Sample Number: MW-3D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 09/23/10

13:20

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = 6 W
sampling method = Low Flow
temp = 12.59 °C
Cond = 0.767 mS/cm
DO = 8.10 mg/L
pH = 7.23
ORP = 134 mV
turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 40 QC Code: FB Matrix: Water Tag ID: 5068-40-FB

Project ID: BZA72Z01

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND
GROUNDWATER

Site ID: A72Z Site OU: 01

Location Desc: LDL VOA Trip Blank sample 1

External Sample Number:

Expected Conc: Low (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 09/22/10

13:53

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 14 QC Code: Matrix: Water Tag ID: 5068-14-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-5B

External Sample Number: MW-5B

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: End: 09/23/10 18:41
Longitude:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
Sample method = Low flow
temp = 11.54 °C
Cond = 0.906 mS/cm
DO = 4.09 mg/L
pH = 7.29
ORP = 147 mV
turb = 96 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 15 QC Code: Matrix: Water Tag ID: 5068-14-15-FD

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: Duplicate of MW-SB

External Sample Number: Duplicate of MW-SB

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/23/10

18:41

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

See fieldsheet 5068-14 MW-SB

Sample Collected By: HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5068 **Sample Number:** 41 **QC Code:** FB **Matrix:** Water **Tag ID:** 5068-41-FB

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: LDL VOA Trip Blank sample 2

External Sample Number: _____

Expected Conc: Low (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 09/23/10 14:00

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 16 QC Code: ___ Matrix: Water Tag ID: 5068-16-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-5A

External Sample Number: MW-5A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/24/10

08:20

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = 6W

sampling method = Low Flow

temp = 9.92

cond = 0.879

DO = 5.49

pH = 7.19

ORP = 169

turb = 0.0

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 17 QC Code: Matrix: Water Tag ID: 5068-17-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-5D

External Sample Number: MW-5D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/24/10

09:22

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sampling method = Low flow

temp = 10.60 °C

cond = 0.611 mS/cm

DO = 7.57

pH = 7.25

ORP = 153

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 18 QC Code: Matrix: Water Tag ID: 5068-18-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-6E

External Sample Number: MW-6E

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: End: 09/24/10 11:09
Longitude:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = 6W
Sampling method = Low flow
temp = 12.06°C
cond = 0.332 mS/cm
DO = 2.61 mg/L
pH = 7.39
ORP = 113 mV
turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5068 Sample Number: 19 QC Code: Matrix: Water Tag ID: 5068-19-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-6D

External Sample Number: MW-6D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/24/10

12:55

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sampling method = Low flow

temp = 14.79 °C

cond = 0.518

DO = 5.39

pH = 7.28

ORP = 143 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 20 QC Code: Matrix: Water Tag ID: 5068-20-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-6A

External Sample Number: MW-6A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/24/10

14:02

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sampling method = Low flow

temp = 13.47°C

cond = 0.841 mS/cm

DO = 2.87 mg/L

pH = 7.16

ORP = 155 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 21 QC Code: Matrix: Water Tag ID: 5068-21-FD ²⁰

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: Duplicate of MW-6A

External Sample Number: MW-6A Duplicate

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: / /

Longitude:

End: 09/24/10

14:02

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

See field sheet MW-6A

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 22 QC Code: ___ Matrix: Water Tag ID: 5068-22-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-7B

External Sample Number: MW-7B

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: / /

 :

Longitude: _____

End: 09/24/16

15:47

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = 6W

sampling method = Low flow

temp = 20.99 °C

cond = 0.650 mS/cm

DO = 4.28 mg/L

pH = 6.94

ORP = 163 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 23 QC Code: ___ Matrix: Water Tag ID: 5068-23-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-7A

External Sample Number: MW-7A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/24/10

16:52

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

Sampling method = low flow

temp = 13.93°C

cond = 0.745 ns/cm

DO = 2.25 mg/L

pH = 7.13

ORP = 162 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5068 Sample Number: 25 QC Code: Matrix: Water Tag ID: 5068-28-²⁴
~~AE 9/25/10~~

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-13E

External Sample Number: MW-13E

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: / /

Longitude:

End: 09/25/10

10:50

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

Sampling method = Low flow

temp = 13.75 °C

cond = 0.584 mS/cm

DO = 13.02 mg/L

pH = 7.42

ORP = 190 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 24 QC Code: Matrix: Water Tag ID: 5068-24-²⁵_{AF 9/25/10}

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: Rinsate Blank

External Sample Number: Rinsate Blank

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: / /

Longitude:

End: 09/25/10

11:15

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) Rinsate

Sample Collected By: HGL

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5068 Sample Number: 26 QC Code: Matrix: Water Tag ID: 5068-26-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW-13C

External Sample Number: MW-13C

Expected Conc: Low (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: **Sample Collection: Start:** **End:** **Time(24 hr)**
Longitude: **End:** 09/25/10 12:12

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = low flow
temp = 11.49°C
cond = 0.693 mS/cm
DO = 15.59 mg/L
pH = 7.51
ORP = 176 mV
turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 27 QC Code: ___ Matrix: Water Tag ID: 5068-27-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-2A

External Sample Number: MW-2A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/25/10

13:53

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = low flow
temp = 12.02 °C
cond = 0.734 mS/cm
DO = 7.14 mg/L
pH = 6.84
ORP = 178 mV
turb = 0.0 Ntu

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 28 QC Code: ___ Matrix: Water Tag ID: 5068-28-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-8A

External Sample Number: MW-8A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/25/10

15:24

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) Extra volume collected for ms/msd

media = GW

sampling method = Low Flow

temp = 13.73 °C

cond = 1.32 mS/cm

DO = 5.42 mg/L

pH = 7.37

ORP = 158 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 29 QC Code: Matrix: Water Tag ID: 5068-29-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-4B

External Sample Number: MW-4B

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/26/10

01:07

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

Sampling method = Low Flow

temp = 10.27 °C

cond = 0.936 mS/cm

DO = 9.60 mg/L

pH = 7.09

ORP = 179 mV

turb = 2.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 30 QC Code: Matrix: Water Tag ID: 5068-30-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-4A

External Sample Number: MW-4A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/26/10

10:30

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = BW

Sampling Method = Low flow

temp = 10.45°C

cond = 0.943 mS/cm

DO = 3.00 mg/L

pH = 7.41

ORP = 162 mV

turb = 22.2 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5068 Sample Number: 31 QC Code: Matrix: Water Tag ID: 5068-31-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-1A

External Sample Number: MW-1A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: End: 09/26/10 12:00
Longitude:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs In Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) Extra volume collected for MS/MSD

media = GW

sampling method = Low flow

temp = 10.60°C

Cond = 0.848 mS/cm

DO = 4.91 mg/L

pH = 7.11

ORP = 179 mV

turb = 0.2 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5068 Sample Number: 32 QC Code: Matrix: Water Tag ID: 5068-32-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-20E

External Sample Number: MW-20E

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/26/10

14:23

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sampling method = low flow

temp = 11.54 °C

cond = 0.571 mscm

DO = 6.42 mg/L

pH = 7.85

ORP = 86 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 33 QC Code: Matrix: Water Tag ID: 5068-33-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-20D

External Sample Number: MW-20D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/26/10

15:15

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs In Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = low flow
temp = 11.19 °C
cond = 0.639 mS/cm
DO = 0.61 mg/L
pH = 6.96
ORP = -193 mV
turb = 2.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 34 QC Code: ___ Matrix: Water Tag ID: 5068-34-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-20C

External Sample Number: MW-20C

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/26/10

15:55

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sampling method = Low flow

temp = 11.74°C

cond = 0.680 mS/cm

DO = 6.88 mg/L

pH = 7.26

ORP = 86 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 35 QC Code: Matrix: Water Tag ID: 5068-35-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-19C

External Sample Number: MW-19C

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start:

Longitude:

End: 09/27/10

09:25

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

Sampling method = low flow

temp = 9.55°C

cond = 0.799 mS/cm

DO = 3.18 mg/L

pH = 6.99

ORP = 92 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 36 QC Code: ___ Matrix: Water Tag ID: 5068-36-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-20A

External Sample Number: MW-20A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/27/10

15:57

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

sampling method = low flow

temp = 16.20 °C

cond = 0.816 mS/cm

DO = 0.35 mg/L

pH = 7.23

ORP = -135 mV

turb = 0.0 NTU

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5068 Sample Number: 37 QC Code: ___ Matrix: Water Tag ID: 5068-37-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-19A

External Sample Number: MW-19A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 09/27/10

16:51

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Media = GW
Sampling method - low-flow
temp = 19.50°C
cond = 1.06 mS/cm
DO = 5.57 mg/L
pH = 7.25
ORP = 80 mV
turb = 0.0 NTU

Sample Collected By: HGL

**CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

ACTIVITY LEADER(Print) <u>Zurburchen, Brian</u>	NAME OF SURVEY OR ACTIVITY <u>Garvey Elevator</u>	DATE OF COLLECTION <u>22</u> <u>09</u> <u>10</u> DAY MONTH YEAR	SHEET <u>1</u> of <u>1</u>
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CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS				VOA SET (# VIALS EA)	SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE		water	soil	sediment	sludg	other	
5067-1					3	X					Extra Vol for MS/MSD Trip Blank
5067-43FB					1	X					
5067-4					1	X					
5067-5					1	X					
5067-6					1	X					
5067-7					1	X					
5067-8					1	X					
5067-9					1	X					
5067-10					1	X					
5067-11					1	X					
5067-11 FD					1	X					Duplicate
5067-13					1	X					
5067-14					1	X					
5067-15					1	X					
5067-15					1	X					
ASR Not Complete 9/23/10 Chr. Temp. Rec'd bet. 0-39°C											

DESCRIPTION OF SHIPMENT <u>16</u> <u>in a bag</u> PIECE(S) CONSISTING OF _____ BOX(ES) <u>1</u> ICE CHEST(S); OTHER _____	MODE OF SHIPMENT ☒ COMMERCIAL CARRIER: <u>UPS</u> ☐ COURIER ☐ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) _____
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PERSONNEL CUSTODY RECORD			
RELINQUISHED BY (SAMPLER) <u>[Signature]</u>	DATE <u>9/23/10</u>	TIME <u>1745</u>	RECEIVED BY <u>[Signature]</u>
☒ SEALED ☐ UNSEALED			☒ SEALED ☐ UNSEALED
REASON FOR CHANGE OF CUSTODY	<u>Analyse</u>		
RELINQUISHED BY	DATE	TIME	RECEIVED BY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED
REASON FOR CHANGE OF CUSTODY			
RELINQUISHED BY	DATE	TIME	RECEIVED BY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED
REASON FOR CHANGE OF CUSTODY			

**CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

ACTIVITY LEADER(Print) <u>Zurbachen, Brian</u>	NAME OF SURVEY OR ACTIVITY <u>Garvey Elevator Quarterly</u>	DATE OF COLLECTION <u>24</u> <u>25</u> <u>09</u> DAY MONTH YEAR	SHEET <u>1</u> of <u>2</u>
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CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS					SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	
5067-16					1	X					
5067-45 FB					1	X					Trip blank
5067-17					1	X					
5067-18					1	X					
5067-19					1	X					
5067-20					1	X					
5067-20FD					1	X					Duplicate
5067-22					1	X					
5067-23					1	X					
5067-24					3	X					Extra V ₃ for MS/MSD
5067-25					1	X					
5067-26					1	X					
5067-27					1	X					
5067-28					1	X					
5067-29					1	X					
5067-44 FB					1	X					Trip Blank
5067-30					1	X					
5067-31					1	X					
5067-32					1	X					
5067-32FD					1	X					Duplicate
5067-37					3	X					Extra Volume for MS/MSD

ASR 5067
 NOT Complete
 9/28/10
 AS Complete
 9/28/10

9/27/10

DESCRIPTION OF SHIPMENT <u>32</u> PIECE(S) CONSISTING OF <u>14 ASR # 5068</u> BOX(ES) <u>2</u> ICE CHEST(S); OTHER	MODE OF SHIPMENT ☒ COMMERCIAL CARRIER: <u>FedEx (WM) 9/27/10</u> ☐ COURIER ☒ SAMPLER CONVEYED
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PERSONNEL CUSTODY RECORD			
RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY
<u>[Signature]</u>	<u>9/28/10</u>	<u>1415</u>	<u>RD Wiggan</u>
☐ SEALED ☐ UNSEALED			☐ SEALED ☒ UNSEALED
REASON FOR CHANGE OF CUSTODY	<u>Reid at lab</u>		
RELINQUISHED BY	DATE	TIME	RECEIVED BY
<u>[Signature]</u>			<u>[Signature]</u>
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED
REASON FOR CHANGE OF CUSTODY			
RELINQUISHED BY	DATE	TIME	RECEIVED BY
<u>[Signature]</u>			<u>[Signature]</u>
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED
REASON FOR CHANGE OF CUSTODY			

ACTIVITY LEADER(Print) Zurbuchen, Brian		NAME OF SURVEY OR ACTIVITY Garvey Elevator		DATE OF COLLECTION 27 09 10 DAY MONTH YEAR		SHEET 2 of 2						
CONTENTS OF SHIPMENT												
SAMPLE NUMBER	TYPE OF CONTAINERS					SAMPLED MEDIA				RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)		
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (# VIALS EA)	water	soil	sediment	dust		other	
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER											
5067-39					4	1	X					
5067-39 FD						1	X					Duplicate
5067-41						1	X					
5067-42						1	X					
5067-34						1	X					
5067-35						1	X					
5067-36						1	X					
						ASR 5067 COMPLETE						
DESCRIPTION OF SHIPMENT					MODE OF SHIPMENT							
32 PIECE(S) CONSISTING OF _____ BOX(ES)					_____ COMMERCIAL CARRIER: _____			9/28/10				
X 2 ICE CHEST(S); OTHER <u>W/ ASR #5068</u>					X SAMPLER CONVEYED			(SHIPPING DOCUMENT NUMBER)				
PERSONNEL CUSTODY RECORD												
RELINQUISHED BY (SAMPLER)		DATE	TIME	RECEIVED BY		REASON FOR CHANGE OF CUSTODY						
		9/28/10	1415			Reid at Lab						
☐ SEALED ☒ UNSEALED				☐ SEALED ☒ UNSEALED								
RELINQUISHED BY		DATE	TIME	RECEIVED BY		REASON FOR CHANGE OF CUSTODY						
☐ SEALED ☐ UNSEALED				☐ SEALED ☐ UNSEALED								
RELINQUISHED BY		DATE	TIME	RECEIVED BY		REASON FOR CHANGE OF CUSTODY						
☐ SEALED ☐ UNSEALED				☐ SEALED ☐ UNSEALED								

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 1 QC Code: Matrix: Water Tag ID: 5067-1-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-17D

External Sample Number: MW-17D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/22/0

10:40

Longitude:

End: 1/1/

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Extra Vol for MS/MSD

Temp°C = 22.50
cond ms/cm = 0.251
pH = 7.20
DO = 3.04
ORP = 90
Turb = 54.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: WM 4 QC Code: Matrix: Water Tag ID: 5067-4

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-17C
External Sample Number: MW-17C
Expected Conc: Low (or Circle One: Low Medium High) Date 9/22/10 Time(24 hr) 12:00
Latitude: Sample Collection: Start: 9/22/10 End: 1/1/10
Longitude:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 24.23 WM 22.15
PH = 7.24 6.86 6.96
COND ms/cm = 0.506
ORP mV = 105
DO mg/L = 4.35
Turb NTU = 5.1

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 5 QC Code: Matrix: Water Tag ID: 5067-5-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-17A
External Sample Number: MW-17A
Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 9/22/10 13:27
Longitude: End: 1/1/13

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 19.56
pH = 6.93
COND μmS/cm = 0.705
DO mg/L = 5.02
ORP mV = 120
Turb NTU = 2.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 6 QC Code: ___ Matrix: Water Tag ID: 5067-6-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-18D

External Sample Number: MW-18D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/24/0 15:28

Longitude: _____

End: 1/1/ :-

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 27.55
pH = 7.04
COND $\mu\text{S}/\text{cm}$ = 0.433
DO mg/L = 3.44
ORP mV = 102
Turb ntu = 11.5

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 7 QC Code: Matrix: Water Tag ID: 5067-7-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-18A
External Sample Number: MW-18A
Expected Conc: Low (or Circle One: Low Medium High) Date 9/24/10 Time(24 hr) 16:30
Latitude: Sample Collection: Start: 1/1/ End: 1/1/
Longitude: End: 1/1/

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 23.86
pH = 6.32
Cond ms/cm = 0.381
DO mg/L = 4.51
ORP mV = 143
Turbidity = 4.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 8 QC Code: Matrix: Water Tag ID: 5067-8-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc:

9-23-10
MW-17C MW-18C

External Sample Number:

9-23-10
MW-17C MW-18C

Expected Conc: Low (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start:

9/22/10

17:21

Longitude: _____

End: 1/1/

1:1

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 30.98
pH = 6.89
cond. ms/cm = 0.572
DO mg/L = 2.19
ORP mV = -38
Turbidity = 3.6

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 9 QC Code: ___ Matrix: Water Tag ID: 5067-9-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-12C

External Sample Number: MW-12C

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: 9/23/10

9:10

Longitude: ___

End: 1/1/

:_

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp $\varnothing$ = 20.92
pH = 6.61
cond μ scm = 0.586
DO mg/L = 4.23
ORP mV = 157
Turb NTU = 4.1

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 10 QC Code: Matrix: Water Tag ID: 5067-10-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-12A

External Sample Number: MW-12A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: 9/23/10 10:49

Longitude: End: : :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 22.07
pH = 6.87
mg/cm cond = 0.844
DO mg/L = 4.93
ORP mV = 112
Turbidity = 5.1

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 11 QC Code: ___ Matrix: Water Tag ID: 5067-11-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-12DExternal Sample Number: MW-12DExpected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/23/10 11:50

Longitude: _____

End: 1/1/ :-

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 20.80
pH = 6.95
Cond. µS/cm = 0.409
DO mg/L = 3.90
ORP mV = 110
Turb. NTU = 22.2

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 11 QC Code: 42410 Matrix: Water Tag ID: 5067-11-ED

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc: MW-12D Duplicate

External Sample Number: MW-12D Duplicate

Expected Conc: Low (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/23/10

11:50

Longitude: _____

End: 1/1/

:-

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 20.80
pH = 6.95
Cond μ S/cm = 0.409
DO mg/L = 3.90
ORP mV = 110
Turb NTU = 22.2

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 12 QC Code: 13 Matrix: Water Tag ID: 5067-12

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site 00: 02

Location Desc: MW-104C MW-104AExternal Sample Number: MW-104CExpected Conc: Low (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/23/1013:47

Longitude: _____

End: 1/1/:-

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 20.32
pH = 7.13
cond $\mu\text{S}/\text{cm}$ = 0.286
DO mg/L = 3.44
ORP mV = 92
Turb NTU = 0.4

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 13 QC Code: Matrix: Water Tag ID: 5067-13

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc:

MW-104E Duplicate

External Sample Number:

MW-104C Duplicate

Expected Conc: Low (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/23/10

14:41

Longitude: _____

End: ____/____/____

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Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 25.04
pH = 8.07
cond mg/cm = 0.346
DO mg/L = 4.62
ORP mV = 58
Turb NTU = 0.8

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 14 QC Code: 15 Matrix: Water Tag ID: 5067-14-15

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-104 A

External Sample Number: MW-104 A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____ Sample Collection: Start: 9/23/10 15:34
Longitude: _____ End: 1/1/ :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 18.36
pH = 6.70
cond ms/cm = 0.894
DO mg/L = 4.56
ORP mV = 105
Turb NTU = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 16 QC Code: ___ Matrix: Water Tag ID: 5067-16-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-42 E

External Sample Number: MW-42 E

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: 9/24/10 09:02

Longitude: ___

End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 15.70
pH = 6.89
cond ms/cm = 0.383
DO mg/L = 8.89
ORP mV = 175
Turb NTU = 14.3

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 17 QC Code: ___ Matrix: Water Tag ID: 5067-17-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-42D
External Sample Number: MW-42D
Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 09/24/07 12:09
Longitude: _____ End: 1/1/ —:—

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 20.81
pH = 6.84
COND ms/cm = 0.451
DO mg/L = 6.85
ORP mV = 137
Turb ntu = 37.9

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 18 QC Code: Matrix: Water Tag ID: 5067-18-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-43E

External Sample Number: MW-43E

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/24/10 14:14

Longitude:

End: 1/1/11 14:14

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 30.38
pH = 8.45
COND $\mu\text{S}/\text{cm}$ = 0.352
DO mg/L = 7.83
ORP mV = 117
Turbidity = 5.6

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 19 QC Code: ___ Matrix: Water Tag ID: 5067-19-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-43D
External Sample Number: MW-43D
Expected Conc: Low (or Circle One: Low Medium High) Date 9/24/10 Time(24 hr) 15:16
Latitude: _____ Sample Collection: Start: 9/24/10 End: 15:16
Longitude: _____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 31.39
pH = 8.22
Cond ms/cm = 0.341
DO mg/L = 7.36
ORP mV = 110
Turb NTU = 8.8

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 20 QC Code: ___ Matrix: Water Tag ID: 5067-20-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-46DZ

External Sample Number: _____

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/24/1017:19

Longitude: _____

End: 1/1/17:19

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 29.71
pH = 7.00
COND/ms/cm = 0.423
DO mg/L = 6.02
ORP mV = 137
Turbidity = 30.8

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067

Sample Number: 21

QC Code: FD

Matrix: Water

Tag ID: 5067-21

WM 20 FD

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc:

Duplicate of MW-46D2

External Sample Number:

Duplicate of MW-46D2

Expected Conc: Low

(or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start:

9/24/10

17:19

Longitude: _____

End: ____/____/____

____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 29.71
pH = 7.00
Cond µS/cm = 0.423
DO mg/L = 6.02
ORP mV = 137
Turb NTU = 30.8

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 22 QC Code: ___ Matrix: Water Tag ID: 5067-22-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-46D1

External Sample Number: MW-46D1

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: 9/25/10 10:29

Longitude: ___

End: 1/1/___ :__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 21.70
pH = 8.78
cond ms/cm = 0.732
DO mg/L = 7.21
ORP mV = 191
Turb NTU = 0.0 (out of range for meter)

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 23 QC Code: ___ Matrix: Water Tag ID: 5067-23-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-106D

External Sample Number: MW-106D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: 9/25/10 11:51

Longitude: ___

End: 1/1/ :-

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 24.12
pH = 8.73
cond µS/cm = 0.283
DO mg/L = 5.24
ORP mV = 124
Turb NTU = 1.3

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 24 QC Code: Matrix: Water Tag ID: 5067-24-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-106C

External Sample Number: MW-106C

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/25/10

13:05

Longitude:

End: / /

:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Extra Volume for MS/MSD

Temp °C = 19.40
pH = 6.84
Cond mscm = 0.433
DO mg/L = 5.08
ORP mV = 156
Turbidity = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 25 QC Code: ___ Matrix: Water Tag ID: 5067-25-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-106A

External Sample Number: MW-106A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: 9/25/10 14:10

Longitude: ___

End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 19.19
pH = 7.13
Cond ms/cm = 0.620
DO mg/L = 5.60
ORP mV = 155
Turb mu = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 26 QC Code: Matrix: Water Tag ID: 5067-26-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-11A

External Sample Number: MW-11A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: 9/25/10 16:03

Longitude: End: 1/1/

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 24.89
pH = 8.17
Cond ms/cm = 0.441
DO mg/L = 3.86
ORP mV = 149
Turb mU = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 27 QC Code: Matrix: Water Tag ID: 5067-27-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-44D

External Sample Number: MW-44D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/26/10

09:05

Longitude:

End: 1/1/

:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 16.06
pH = 6.17
Cond ms/cm = 0.342
DO mg/L = 3.62
ORP mV = 157
Turb ntu = 47.4

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 28 QC Code: ___ Matrix: Water Tag ID: 5067-28-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-44 EExternal Sample Number: MW-44 EExpected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/26/10 10:56

Longitude: _____

End: 1/1/ :_

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 17.22
pH = 7.17
Cond ms/cm = 0.286
DO mg/L = 2.93
ORP mV = 158
Turbidity = 7.4

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 29 QC Code: Matrix: Water Tag ID: 5067-29-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-41D1

External Sample Number: MW-41D1

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: 9/26/10 12:45

Longitude: End: : :

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 22.58
pH = 7.99
Cond ms/cm = 0.737
DO mg/L = 4.06
ORP mV = 152
Turb mu = 6.2

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 30 QC Code: ___ Matrix: Water Tag ID: 5067-30-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: _____

MW-41D2

External Sample Number: _____

MW-41D2

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/26/10

13:45

Longitude: _____

End: 1/1/

:_:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 24.24
pH = 8.45
COND μ S/cm = 0.312
DO mg/L = 4.99
ORP mV = 136
Turbidity = 27.4

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 31 QC Code: ___ Matrix: Water Tag ID: 5067-31-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-105 D

External Sample Number: MW-105 D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: 9/26/10 16:05

Longitude: ___

End: 1/1/ :-

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 25.29
pH = 7.17
Cond mscm = 0.345
DO mg/L = 3.82
ORP mV = 134
Turb NTU = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 32 QC Code: ___ Matrix: Water Tag ID: 5067-32-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-105C

External Sample Number: MW-105C

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___ Sample Collection: Start: 9/26/10 17:18

Longitude: ___ End: 1/1/ :-

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 20.14
pH = 6.59
Cond as/cm = 0.566
DO mg/L = 4.29
ORP mV = 161
Turb NTU = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KSASR Number: 5067 Sample Number: ³²33 ^{LDH} QC Code: ³²FD Matrix: Water Tag ID: 5067-³²33-FD

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc:

Duplicate of MW-105C

External Sample Number:

Duplicate of MW-105C

Expected Conc: Low (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _ _ _

Sample Collection: Start: 9/26/10

17:58

Longitude: _ _ _

End: _/_/_

_: _

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp = 20.14
pH = 6.59
cond = 0.566
DO = 4.29
ORP = 161
Turb = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 34 QC Code: ___ Matrix: Water Tag ID: 5067-34-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-105A

External Sample Number: MW-105A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: ___/___/___

Longitude: ___

End: 09/27/10 11:13

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = 6W
low flow sample method
temp = 12.84°C
cond = 0.915 ns/cm
DO = 5.42 mg/L
pH = 7.15
ORP = 127 mV
turb = 7.8 NTU

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 35 QC Code: ___ Matrix: Water Tag ID: 5067-35-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-10B

External Sample Number: MW-10B

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___ Sample Collection: Start: ___/___/___ End: ___:___
Longitude: ___ End: 09/27/10 12:31

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
Sampling method = Low flow
temp = 11.08°C
cond = 0.856 mS/cm
DO = 8.75 mg/L
pH = 7.18
ORP = 145 mV
turb = 0.0 NTU

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 36 QC Code: _____ Matrix: Water Tag ID: 5067-36-____

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-10AExternal Sample Number: MW-10A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: ____/____/____

Longitude: _____

End: 09/27/10 14:46

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
sampling method = low flow
temp = 12.47 °C
cond = 0.973 mS/cm
DO = 8.29 mg/L
pH = 7.17
ORP = 167 mV
turb = 0.0 NTU

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 37 QC Code: ___ Matrix: Water Tag ID: 5067-37-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-16C

External Sample Number: MW-16C

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ___

Sample Collection: Start: 9/27/10 09:08

Longitude: ___

End: 1/1/ :-

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Extra Volume For MS/MSD

Temp °C = 18.27
pH = 7.22
cond_{ms/cm} = 0.651
DO mg/L = 5.82
ORP mV = 177
Turb_{ntu} = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 38 QC Code: Matrix: Water Tag ID: 5067-38-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-16A

External Sample Number: MW-16A

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/27/10 11:24

Longitude:

End: 1/1/ 1:1

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 19.74
pH = 6.77
Cond ms/cm = 0.753
DO mg/L = 4.50
ORP mV = 182
Turb NTU = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5067 Sample Number: 39 QC Code: ____ Matrix: Water Tag ID: 5067-39-____

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-45C

External Sample Number: MW-45C

Expected Conc: Low (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ____

Sample Collection: Start: 9/27/10

12:27

Longitude: ____

End: 1/1/

__:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 23.52
pH = 7.46
Cond ms/cm = 0.461
DO mg/L = 4.92
ORP mV = 171
Turb NTU = 24.5

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5067

Sample Number: ³⁹~~40~~QC Code: ~~ED~~

Matrix: Water

Tag ID: 5067-³⁹~~40~~ ^{FD}

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc: Duplicate of MW-45CExternal Sample Number: Duplicate of MW-45C

Expected Conc: Low (or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/27/1012:27

Longitude: _____

End: 1/1/112:27

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 23.52
pH = 7.46
Cond ms/cm = 0.461
TD mg/L = 4.92
ORP mV = 171
Turb NTU = 245

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 41 QC Code: ___ Matrix: Water Tag ID: 5067-41-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW 45D (WM) MW 45DExternal Sample Number: MW-45D

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/27/1013:21

Longitude: _____

End: 1/1/1:1

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 24.55
pH = 7.87
COND ms/cm = 0.393
DO mg/L = 5.86
ORP mV = 167
Turbidity = 43.6

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 42 QC Code: Matrix: Water Tag ID: 5067-42-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc:

MW-14A

External Sample Number:

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 9/27/10

4:30

Longitude:

End: 1/1/

:

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Temp °C = 29.19
pH = 6.86
Cond μ S/cm = 0.598
DO mg/L = 4.38
ORP mV = 171
Turbidity = 0.0

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 43 QC Code: FB Matrix: Water Tag ID: 5067-43-FB

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: LDL VOA Trip Blank sample 1

External Sample Number: Trip blank

Expected Conc: Low (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 9/23/10 10:00

Longitude: _____

End: ___/___/___ ___:___

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 **Sample Number:** 44 **QC Code:** FB **Matrix:** Water **Tag ID:** 5067-44-FB

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: LDL VOA Trip Blank sample 2**External Sample Number:**

Trip Blank

Expected Conc: Low (or Circle One: Low Medium High) **Date** **Time(24 hr)****Latitude:** _____**Sample Collection: Start:** 7/26/10

13:30

Longitude: _____**End:** ____/____/____

____:____

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: BZ

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5067 Sample Number: 45 QC Code: FB Matrix: Water Tag ID: 5067-45-FB

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: LDL VOA Trip Blank sample 3

External Sample Number:

Trip Blank

Expected Conc: Low (or Circle One: ☒ Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start:

9/24/10

10:40

Longitude: _____

End:

___/___/___

__:__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Trip blank #2 has not been submitted.

Sample Collected By: BZ

DECEMBER 2010

WATER LEVEL DATA

50

Location Hastings, NE Date 12/13/10
 Project / Client Garry Elevator / EPA R7

Well	Date	Time	DTW BTDC
9A	12/13/10	1455	111.42
7A	12/13/10	1506	108.49
7B	12/13/10	1515	109.16
2A	12/13/10	1534	115.59
6E	12/13/10	1550	119.25
6D	12/13/10	1555	118.32
6A	12/13/10	1558	118.19
13C	12/13/10	1605	116.89
13E	12/13/10	1610	117.53
3B	12/13/10	1616	118.51 120.05
3A	12/13/10	1620	121.35
3E	12/13/10	1623	118.86
3D	12/13/10	1627	119.96
4A	12/13/10	1633	118.93
4B	12/13/10	1640	118.74
8A	12/13/10	1545	126.02
1A	12/13/10	1558	112.33
5A	12/13/10	1610	117.54
5B	12/13/10	1615	118.64
5D	12/13/10	1620	118.61

1700 Work complete for day.

Fletcher departs site.

~ AS Fletcher 12/13/10 ~

Location Hastings, NE

Date 12/14/10 51

Project / Client Garry Elevator / EPA E7

0830 Fletcher arrives at MW-31 after safety meeting and loading supplies and equipment. MW-31 is a geokon well so no water levels will be collected during sampling. 31-C will be sampled first.
 1015 Setup complete, begin pumping.
 1035 Begin collecting parameters
 1115 Sample 5.88-1 collected from MW-31C. Final parameters are listed below:
 Temp: 10.18 pH: 6.59
 Cond: 0.710 turb 1.6
 ORP: 25 DO: 5.45
 1135 Connect to MW-31A.
 Problems encountered with flow
 1158 Water is flowing but at a slow rate ~50 ml/min
 1207 Flow rate increased to 400 ml/min begin collecting parameters.

~ AS Fletcher
 12/14/10 ~

48

Location Hastings, NE Date 9/27/10
 Project / Client Garvey Elevator / EPA R7

parameters are listed below:

temp: 19.50 pH: 7.25
 Cond: 1.06 DO: 5.57
 ORP: 80 turb: 0.0

1705 Return to field office to
 clean equipment and vehicle
 as sampling is now complete
 1730 Depart site for day

A Fletcher 9/27/10

49

Location Hastings, NE Date 12/13/10
 Project / Client Garvey Elevator / EPA R7

1250 Fletcher arrives on site and
 begins unloading equipment
 and supplies.

1335 After a safety meeting
 Fletcher departs to begin
 collecting water level measure-
 ments at the on-site well loca-
 tions.

On-Site Wells

Well	Date	Time	Digits	Temp
31-C	12/13/10	1349	7627.2	12.4
31-A	12/13/10	1353	8450.0	12.2
30-E	12/13/10	1402	7214.5	12.7
30-D	12/13/10	1407	6651.2	12.5
30-C	12/13/10	1411	7510.0	12.1
30-A	12/13/10	1414	8425.0	12.4
20-E	12/13/10	1427	7262.9	12.4
20-D	12/13/10	1430	6832.3	12.7
20-C	12/13/10	1433	7706.2	12.2
20-A	12/13/10	1435	8056.8	12.2
19-C	12/13/10	1442	7749.3	12.4
19-A	12/13/10	1445	8472.3	12.1

A Fletcher 12/13/10

PAGE

DATE _____

Location

Hastings, N.E.

Date _____

12/13/10

Project / Client

Garvey Elevator Site

Quantity Sampling 24h 2d

Author: Bo Moreland CDM
Team 1: Bo Moreland, Justiz Nielsen
Team 2: Jeff Galt, Andrea Fletcher
Equipment: WLMeter SR

Activities: Arrive onsite at 12:45.
Will meet w/ Team 2 & start
water levels.

1359 MW-106A 120.68

Date	Well ID	DTW	Time	Comments
12/13/10	MW-106A	120.68	1339	
	MW-106C	123.50	1341	
	MW-106D	123.52	1343	
	42D	121.72	1347	
	42E	121.86	1349	
	45D	102.80	1414	
	45C	103.17	1416	
	17A	94.55	1425	
	17D	93.96	1427	
	17C	91.02	1429	
	16C	109.18	1434	
	16A	108.91	1436	

(WTR)

Location Hastings, NE Date 12/13/10
 Project / Client Garvey Elevator Site
Quarterly Groundwater sampling

Date	Well ID	DTW	Time	Comments
12/13/10	14 A	101.30	1443	
	12 A	112.99	1447	
	12 C	114.25	1444	
	12 D	113.44	1451	
	18 A	107.33	1454	
	18 D	107.44	1501	
	18 C	107.31	1503	
	104 D	107.31	1510	
	104 A	104.85	1512	
	104 C	107.31	1514	
	105 A	119.73	1520	
	105 C	121.48	1522	
	105 D	121.30	1524	
	46 D2	115.11	1530	
	46 D1	114.92	1532	
	41 D2	120.12	1537	
	41 D1	120.36	1539	
	43 D	126.44	1552	
	43 D	126.45	1554	
	44 D	110.58	1554	
	44 E	110.57	1601	
	10 T	108.55	1625	
	10 B	109.45	1627	

WAL
43E

WAL

Location Hastings, NE Date 12/17/10
 Project / Client Garvey Elevator Site
Quarterly Groundwater sampling

Well ID	DTW	Time	Comments
	119.95		
11 A	98.36	1631	
9 A	111.42	1637	

1730 Head back to Garvey. Done for day

WAL

12/13/10

PURGE SHEETS

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-15-10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-1APurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 112.33Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 112.28QC Samples Collected: NonePurge Start Time: 1152Sample Number: 5188-9Sample Time: 1222Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 30 psiSamplers= Signatures: JG/AFCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1200	112.28	9.30	7.61	0.803	4.29	106	24.7	150	
1203	112.28	9.98	7.27	0.812	4.84	110	22.2	150	
1206	112.28	10.06	7.16	0.811	4.63	115	20.2	150	
1209	112.28	10.28	7.08	0.814	4.49	117	15.9	150	
1212	112.28	10.33	7.08	0.816	4.11	120	12.6	150	
1215	112.28	10.35	7.12	0.817	4.22	121	10.1	150	
1218	112.28	10.38	7.11	0.818	4.21	123	9.6	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-15-10OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-2APurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 115.59Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 115.65QC Samples Collected: NonePurge Start Time: 1600Sample Number: 5188-Sample Time: 1627Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiSamplers= Signatures: AF/JCCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1605	115.65	10.00	7.47	1.04	5.85	141	1.9	125	
1608	115.65	10.20	7.17	0.851	4.55	147	1.9	125	
1611	115.65	10.34	7.07	0.795	4.01	150	1.7	125	
1614	115.65	10.38	7.00	0.771	3.81	153	1.4	125	
1617	115.65	10.42	6.95	0.758	3.28	155	1.5	125	
1620	115.65	10.43	6.92	0.756	3.53	156	1.1	125	
1623	115.65	10.40	6.89	0.753	3.22	154	0.9	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-18-10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-3APurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 121.35Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 121.46QC Samples Collected: NonePurge Start Time: 1218Sample Number: 5188-29Sample Time: 1249Controller Settings: Recharge: 19 secs Discharge: 11 secs Pressure: 80 psiSamplers= Signatures: AF/JCCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1227	121.45	7.74	7.26	0.940	4.76	161	0.0	125	
1230	121.45	7.90	7.32	0.941	4.66	151	0.0	125	
1233	121.46	8.04	7.31	0.941	4.62	150	0.0	125	
1236	121.45	8.11	7.31	0.939	4.56	151	0.0	125	
1239	121.46	8.19	7.29	0.937	4.35	148	0.0	125	
1242	121.46	8.18	7.29	0.937	4.29	150	0.0	125	
1245	121.46	8.19	7.28	0.937	4.29	148	0.0	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-13-10Well ID: mw-3BInitial Static Water Level (feet btoc): 120.05Final Water Level (feet btoc): 120.38Purge Start Time: 1108Sample Time: 1140Samplers= Signatures: AP/JGOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-28Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1118	120.32	9.98	7.56	0.882	8.80	142	0.0	100	
1121	120.37	10.47	7.33	0.907	7.90	139	0.0	100	
1124	120.35	10.57	7.30	0.912	7.88	136	0.0	100	
1127	120.37	10.60	7.25	0.917	7.82	136	0.0	100	
1130	120.37	10.56	7.21	0.921	7.83	136	0.0	100	
1133	120.38	10.52	7.19	0.923	7.79	136	0.0	100	
1136	120.38	10.55	7.18	0.923	7.72	136	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-18-10OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-3DPurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 119.96Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 119.72QC Samples Collected: MS/MSDPurge Start Time: 1356Sample Number: 5188-30Sample Time: 1430Controller Settings: Recharge: 14 secs Discharge: 14 secs Pressure: 100 psiSamplers= Signatures: AF/JGCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1402	119.66	10.10	7.55	0.664	13.05	165	0.0	200	
1405	119.72	10.66	7.38	0.711	5.82	164	0.0	200	
1408	119.72	10.79	7.21	0.711	5.03	157	0.0	200	
1411	119.72	10.85	7.30	0.710	4.45	160	0.0	200	
1414	119.72	10.84	7.29	0.708	4.00	153	0.0	200	
1417	119.72	10.77	7.29	0.705	3.55	159	0.0	200	
1420	119.72	10.78	7.29	0.705	2.88	161	0.0	200	
1423	119.72	10.78	7.29	0.702	2.75	157	0.0	200	
1426	119.72	10.67	7.29	0.704	2.82	156	0.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

55' x 18 mL = 990 mL

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-12-10Well ID: mw-3EInitial Static Water Level (feet btoc): 118.86Final Water Level (feet btoc): 118.85Purge Start Time: 0840Sample Time: 1010Samplers= Signatures: AF/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-27Controller Settings: Recharge: 9 secs Discharge: 21 secs Pressure: 115 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0937	118.85	6.75	7.76	0.695	10.40	153	0.0	75	
0940	118.85	7.71	7.75	0.703	7.22	131	0.0	75	
0944	118.85	8.48	7.74	0.711	7.12	108	0.0	90	
0947	118.85	8.81	7.76	0.716	7.27	92	0.0	90	
0950	118.85	8.96	7.76	0.717	7.39	84	0.0	90	
0954	118.85	8.92	7.77	0.720	7.71	73	0.0	90	
0958	118.85	9.10	7.83	0.721	7.31	70	0.0	90	
1001	118.85	9.09	7.82	0.722	7.69	66	0.0	90	
1004	118.85	9.15	7.87	0.724	7.65	65	0.0	90	
1007	118.85	9.18	7.88	0.723	7.54	65	0.0	90	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

$$\begin{aligned}
 119' \times 18 \text{ mL} &= 2,142 \text{ mL} \div 75 \\
 &= 28.6 \text{ min} \\
 &\div 70 \\
 &= 24 \text{ min}
 \end{aligned}$$

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-19-10Well ID: MW-4AInitial Static Water Level (feet btoc): 119.93Final Water Level (feet btoc): 119.02Purge Start Time: 0925Sample Time: 1000Samplers= Signatures: AF/JGOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-35Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 75 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0938	119.02	8.00	7.99	0.928	12.40	173	0.0	125	
0942	119.02	9.10	7.09	0.926	7.75	170	0.0	125	
0943	119.02	9.16	7.09	0.928	7.36	168	0.0	125	
0947	119.02	9.33	7.09	0.927	6.85	169	0.0	125	
0950	119.02	9.23	7.09	0.929	6.89	166	0.0	125	
0953	119.02	9.24	7.01	0.929	6.80	164	0.0	125	
0956	119.02	9.27	7.09	0.930	6.62	164	0.0	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-19-10 OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphere

Well ID: MW-4B Purging/Sampling Device: QED Bladder Pump/compressed nitrogen

Initial Static Water Level (feet btoc): 118.74 Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): 118.87 QC Samples Collected: Duplicate

Purge Start Time: 0754 Sample Number: 5188-33/5188-33 FD

Sample Time: 0845 Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 80 psi

Samplers= Signatures: AF/JG Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0756									
0808	118.86	11.12	6.72	2.922	10.85	183	83.1	200	
0811	118.87	11.16	6.76	0.925	9.43	175	89.9	200	
0815	118.87	10.98	6.67	0.927	9.68	166	85.5	200	
0820	118.87	11.00	6.75	0.926	9.46	163	97.8	200	
0824	118.87	11.03	6.84	0.926	9.37	160	49.4	200	
0828	118.87	10.92	6.84	0.925	9.28	158	23.2	200	
0831	118.87	10.88	6.85	0.925	9.15	157	8.7	200	
0834	118.87	10.89	6.82	0.925	9.00	155	2.0	200	
0837	118.87	10.88	6.83	0.928	9.07	154	0.0	200	
0840	118.87	10.89	6.83	0.926	8.95	156	0.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-17-10Well ID: MW-58AInitial Static Water Level (feet btoc): 118.44 117.54Final Water Level (feet btoc): 117.62Purge Start Time: 1058Sample Time: 1130Samplers= Signatures: AF/56OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-23

Controller Settings: Recharge: _____ secs Discharge: _____ secs Pressure: _____ psi

Cycles Per Minute: _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1111	117.62	8.94	7.39	0.819	9.56	153	8.6	125	
1115	117.62	8.93	7.35	0.842	6.20	152	8.5	125	
1118	117.62	8.88	7.35	0.846	6.17	151	8.5	125	
1121	117.62	8.77	7.33	0.853	5.78	154	8.5	125	
1124	117.62	8.70	7.31	0.861	5.84	152	8.5	125	
1127	117.62	8.68	7.30	0.866	5.82	152	8.2	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-17-10Well ID: MW-5ABInitial Static Water Level (feet btoc): 117.54 ^{AF} 118.64Final Water Level (feet btoc): 118.71Purge Start Time: 0940Sample Time: 1020Samplers= Signatures: AF/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: DuplicateSample Number: 5188-21/AF 5188-21FPController Settings: Recharge: 16 secs Discharge: 14 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1000	118.71	8.64	7.22	0.783	5.01	194	12.3	125	
1003	118.71	9.87	7.21	0.872	5.25	188	12.7	125	
1006	118.71	10.13	7.14	0.898	5.27	180	11.8	125	
1010	118.71	10.08	7.16	0.912	5.23	174	10.3	125	
1013	118.71	10.08	7.11	0.916	5.23	172	9.4	125	
1016	118.71	10.08	7.15	0.919	5.23	171	8.9	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

$$14 \times 19.2 = 252 \text{ mL}$$

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-17-10

Well ID: MW-50

Initial Static Water Level (feet btoc): 118.61

Final Water Level (feet btoc): 118.66

Purge Start Time: 0818

Sample Time: 0900

Samplers- Signatures: JG/AF

OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphere

Purging/Sampling Device: QED Bladder Pump/compressed nitrogen

Analytical Parameters: LDL VOCs

QC Samples Collected: None

Sample Number: 5188-20

Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 90 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0835	118.56	8.67	6.99	0.633	7.62	213	4.9	100	
0838	118.56	9.10	7.00	0.618	7.65	211	4.3	100	
0841	118.66	9.31	6.93	0.609	7.71	207	4.3	100	
0845	118.66	9.27	6.98	0.602	7.16	202	4.6	100	
0848	118.66	9.21	6.98	0.600	7.18	202	4.6	100	
0851	118.66	9.10	6.99	0.599	7.19	201	3.9	100	
0854	118.66	8.98	6.97	0.597	7.23	195	4.1	100	
0857	118.66	9.02	7.02	0.596	7.17	195	4.3	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

$$47.9' \times 18 \text{ mL} = 862.2 \text{ L}$$

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-17-10Well ID: MW-6AInitial Static Water Level (feet btoc): 118.19Final Water Level (feet btoc): 118.19Purge Start Time: 1517Sample Time: 1552Samplers= Signatures: AF/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-24Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 85 psiCycles Per Minute: 852

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1528	118.20	9.58	7.14	0.843	8.61	139	18.2	150	
1531	118.19	9.82	7.19	0.893	5.90	139	18.2	150	
1534	118.19	10.04	7.16	0.904	4.98	143	18.0	150	
1538	118.19	10.13	7.15	0.908	5.03	142	19.6	150	
1542	118.19	10.08	7.11	0.906	5.07	141	18.8	150	
1545	118.19	10.09	7.15	0.908	5.09	140	18.0	150	
1548	118.19	9.98	7.14	0.911	5.09	142	17.4	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-17-10Well ID: MW-6DInitial Static Water Level (feet btoc): 118.32Final Water Level (feet btoc): 118.43Purge Start Time: 1405Sample Time: 1440Samplers= Signatures: AF/IGOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-25Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 890 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1419	118.39	9.89	7.64	0.557	10.05	136	30	125	
1421	118.41	9.91	7.52	0.560	8.15	137	14.6	125	
1424	118.43	9.86	7.45	0.562	7.63	138	14.4	125	
1427	118.43	9.73	7.44	0.563	7.42	143	15.8	125	
1430	118.43	9.49	7.41	0.563	7.20	139	15.6	125	
1433	118.43	9.10	7.38	0.563	7.10	139	14.8	125	
1434	118.43	8.92	7.36	0.563	6.96	141	13.8	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

$$52 \times 18 \text{ mL} = 936 \div 125 \\ = 7.5 \text{ min}$$

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-17-10Well ID: MW-9EInitial Static Water Level (feet btoc): 119.25Final Water Level (feet btoc): 119.45Purge Start Time: 1227Sample Time: 1310Samplers= Signatures: AF/IGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-24Controller Settings: Recharge: 15 secs Discharge: 16 secs Pressure: 115 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1239	119.45	9.94	7.68	0.785	14.01	137	3.9	100	
1242	119.45	9.71	7.93	0.423	10.09	135	5.1	100	
1245	119.45	9.74	7.88	0.378	9.13	136	6.2	100	
1248	119.45	9.63	7.80	0.362	8.98	137	7.0	100	
1251	119.45	9.52	7.76	0.356	8.80	138	8.1	100	
1254	119.45	9.37	7.69	0.350	8.61	137	8.8	100	
1258	119.45	9.12	7.64	0.347	8.11	139	10.1	100	
1301	119.45	9.13	7.58	0.347	7.93	137	10.6	100	
1304	119.45	9.11	7.56	0.347	7.84	136	10.4	100	
1307	119.45	9.01	7.56	0.347	7.72	136	10.2	100	
1315									

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

$$114' \times 18 \text{ mL} = 2052 \div 100 \text{ mL} \\ 20 \text{ min}$$

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-16-10Well ID: mw-7AInitial Static Water Level (feet btoc): 108.49Final Water Level (feet btoc): 108.53Purge Start Time: 1045Sample Time: 1110Samplers= Signatures: AF/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-14Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1052	108.55	9.93	7.06	0.858	5.17	163	2.3	150	
1055	108.53	10.22	7.17	0.852	4.59	168	2.3	150	
1058	108.53	10.51	7.20	0.851	3.32	162	2.3	150	
1101	108.53	10.60	7.14	0.851	3.05	162	2.1	150	
1104	108.53	10.63	7.22	0.850	2.94	162	1.8	150	
1107	108.53	10.66	7.20	0.850	2.87	162	1.6	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 10-16-10Well ID: MW-7BInitial Static Water Level (feet btoc): 109.16Final Water Level (feet btoc): 109.12Purge Start Time: 1005 ^{2nd attempt}Sample Time: 1025Samplers= Signatures: JG/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-13Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1008	109.12	10.87	7.16	0.892	6.50	166	0.1	100	
1011	109.12	10.32	7.09	0.885	5.87	166	0.0	100	
1015	109.12	10.33	7.10	0.885	5.58	164	0.2	100	
1018	109.12	10.35	7.05	0.886	5.65	163	0.3	100	
1021	109.12	10.39	7.06	0.883	5.59	161	0.8	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

*Note: purged for 10 min @ 100 mL/min before air line froze

$$26' \times 18 = 468 \text{ mL}$$

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-15-10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: mw-8APurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 126.02Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 125.98QC Samples Collected: ms/msdPurge Start Time: 1430Sample Number: 5188-Sample Time: 1505Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiSamplers= Signatures: JG/AFCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1438	125.98	11.05	7.56	1.11	6.38	122	7.9	100	
1441	125.98	11.17	7.48	1.23	5.72	126	5.2	100	
1444	125.98	11.15	7.41	1.30	5.23	128	3.5	150	
1447	125.98	11.29	7.35	1.33	4.14	130	2.5	100	
1450	125.98	11.34	7.34	1.35	3.48	132	1.5	100	
1453	125.98	11.29	7.33	1.36	3.50	133	1.3	100	
1457	125.98	11.23	7.31	1.37	3.52	135	1.2	100	
1500	125.98	11.23	7.30	1.37	3.48	134	1.2	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-15-10Well ID: mw-9AInitial Static Water Level (feet btoc): 111.42Final Water Level (feet btoc): 111.45Purge Start Time: 1310Sample Time: 1344Samplers- Signatures: JG/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-10Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1318	111.42	8.92	7.52	0.729	12.05	120	2.8	100	
1321	111.42	9.68	7.35	0.785	5.51	124	1.6	100	
1324	111.42	9.87	7.31	0.817	5.67	124	1.4	100	
1327	111.45	9.99	7.31	0.836	5.65	125	1.2	100	
1330	111.45	10.10	7.32	0.874	5.10	126	1.0	100	
1333	111.45	10.16	7.37	0.897	4.75	126	1.0	100	
1336	111.45	10.24	7.37	0.921	4.41	128	1.4	100	
1339	111.45	10.19	7.38	0.931	4.55	128	1.2	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-19-10Well ID: MW-10AInitial Static Water Level (feet btoc): 108.58Final Water Level (feet btoc): 108.55Purge Start Time: 1559Sample Time: 1637Samplers= Signatures: AF/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5187-42Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1610	108.55	10.10	7.12	0.921	11.17	157	80.1	150	
1613	108.55	10.08	7.11	0.930	8.40	159	66.5	150	
1616	108.55	9.86	7.11	0.939	7.52	157	41.9	150	
1619	108.55	9.58	7.11	0.943	7.65	161	24.9	150	
1624	108.55	9.66	7.11	0.945	7.45	158	10.3	150	
1627	108.55	9.46	7.11	0.947	7.28	158	4.9	150	
1630	108.55	9.33	7.10	0.946	7.20	161	1.4	150	
1633	108.55	9.29	7.11	0.947	7.23	158	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-19-10Well ID: MW-10BInitial Static Water Level (feet btoc): 109.95Final Water Level (feet btoc): 109.90Purge Start Time: 1448Sample Time: 1515Samplers= Signatures: AF/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5187-41Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1453	109.91	9.17	7.34	0.773	9.68	154	0.0	150	
1456	109.90	9.93	7.14	0.812	8.45	154	0.0	150	
1459	109.90	10.27	7.18	0.817	7.83	158	0.0	150	
1502	109.90	10.47	7.16	0.822	7.60	156	0.0	150	
1505	109.90	10.50	7.13	0.825	7.61	155	0.0	150	
1508	109.90	10.58	7.13	0.826	7.33	155	0.0	150	
1511	109.90	10.59	7.12	0.827	7.15	155	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/19/10Well ID: MW-11AInitial Static Water Level (feet btoc): 98.40Final Water Level (feet btoc): 98.41Purge Start Time: 1610Sample Time: 1710Samplers= Signatures: JN/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-35Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 55 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1615	98.41	10.36	6.72	0.415	8.88	175	38.8	100	
1620	98.41	10.05	7.13	0.713	8.52	193	11.0	100	
1625	98.41	10.45	6.86	0.740	8.18	191	7.5	100	
1630	98.41	10.51	6.90	0.742	6.99	192	12.7	100	
1635	98.41	10.56	6.93	0.744	5.21	196	17.8	100	
1640	98.41	10.93	6.81	0.744	5.40	192	13.3	100	
1645	98.41	11.09	6.91	0.743	5.14	197	8.3	100	
1650	98.41	11.17	6.87	0.740	5.33	193	5.1	100	
1655	98.41	11.20	6.86	0.735	5.12	196	3.5	100	
1700	98.41	11.24	6.85	0.732	5.10	197	0.8	100	
1705	98.41	11.26	6.86	0.730	4.99	197	0.1	100	
1710	98.41	11.31	6.80	0.729	5.03	195	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/17/10Well ID: MW-12AInitial Static Water Level (feet btoc): 113.15Final Water Level (feet btoc): 113.15Purge Start Time: 1010Sample Time: 1100Samplers= Signatures: JN/wmOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: —Sample Number: 5187-20Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1025	113.15	7.64	7.23	0.912	7.85	193	0.0	100	
1030	113.15	8.50	7.19	1.03	6.02	187	0.0	100	
1035	113.15	9.22	7.27	1.10	4.73	181	0.0	100	
1040	113.15	9.55	7.27	1.11	5.28	178	0.0	100	
1045	113.15	9.53	7.29	1.11	5.15	178	0.0	100	
1050	113.15	9.59	7.25	1.14	5.02	175	0.0	100	
1055	113.15	10.26	7.25	1.15	4.94	173	0.0	100	
1100	113.15	10.31	7.29	1.15	4.88	174	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/17/10Well ID: MW-12CInitial Static Water Level (feet btoc): 114.41Final Water Level (feet btoc): 114.41Purge Start Time: 0830Sample Time: 0935Samplers= Signatures: JN/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: 5187-18FDSample Number: 5187-18Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0850	114.41	5.09	6.90	0.783	7.01	209	1.5	80	
0855	114.41	5.79	6.53	0.792	7.03	229	0.0	80	
0900	114.41	6.18	6.24	0.794	7.08	232	0.0	80	
0905	114.41	7.07	6.23	0.792	7.80	228	0.0	80	
0910	114.41	7.64	6.44	0.790	6.95	214	0.0	80	
0915	114.41	7.99	6.52	0.788	6.92	202	0.0	80	
0920	114.41	8.37	6.72	0.786	6.70	199	0.0	80	
0925	114.41	8.81	6.83	0.784	6.77	190	0.0	80	
0930	114.41	9.12	6.83	0.783	6.76	188	0.0	80	
0935	114.41	9.22	6.82	0.781	6.72	186	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/17/10Well ID: MW-12DInitial Static Water Level (feet btoc): 113.61Final Water Level (feet btoc): 113.61Purge Start Time: 1120Sample Time: 1205Samplers= Signatures: JN/wmOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-20 5187-21Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1130	113.61	8.65	7.67	0.788	6.12	177	7.3	80	
1135	113.61	8.54	7.78	0.723	6.21	181	9.0	80	
1140	113.61	9.54	7.65	0.583	6.93	184	4.3	80	
1145	113.61	9.92	7.27	0.566	5.91	180	0.0	80	
1150	113.61	10.44	7.10	0.553	4.78	178	0.0	80	
1155	113.61	10.75	7.11	0.544	3.74	181	0.0	80	
1200	113.61	11.14	7.00	0.542	3.52	178	0.0	80	
1205	113.61	11.16	6.99	0.539	3.49	178	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-19-10Well ID: MW-13CInitial Static Water Level (feet btoc): 114.89Final Water Level (feet btoc): 118.36Purge Start Time: 1222Sample Time: 1255Samplers= Signatures: AP/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: DuplicateSample Number: 5188-37/5188.37PBController Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 75 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1231	118.36	8.54	7.40	0.641	15.09	162	0.0	100	
1236	118.36	8.91	7.37	0.655	11.49	158	0.0	100	
1239	118.36	8.87	7.27	0.654	11.03	158	0.0	100	
1242	118.36	9.04	7.36	0.650	10.55	161	0.0	100	
1245	118.36	8.93	7.36	0.646	9.85	166	0.0	100	
1248	118.36	8.89	7.36	0.644	9.63	159	0.0	100	
1251	118.36	8.85	7.36	0.644	9.44	159	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

$$19 \times 18 = 342$$

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-19-10Well ID: mw-13EInitial Static Water Level (feet btoc): 117.53Final Water Level (feet btoc): 117.65Purge Start Time: 1045Sample Time: 1135Samplers= Signatures: AF/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-36Controller Settings: Recharge: 12 secs Discharge: 18 secs Pressure: 115 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1105	117.65	7.24	7.51	0.716	13.13	157	0.0	100	
1108	117.65	8.19	7.88	0.637	11.22	152	0.0	100	
1111	117.65	8.72	8.06	0.603	10.94	151	0.0	100	
1114	117.65	8.87	8.93	0.603	11.82	153	0.0	100	
1118	117.65	9.05	7.66	0.605	11.69	158	0.0	100	
1121	117.65	9.08	7.58	0.606	11.97	155	0.0	100	
1125	117.65	9.12	7.50	0.600	12.00	156	0.0	100	
1128	117.65	9.19	7.48	0.610	11.43	157	0.0	100	
1131	117.65	9.17	7.43	0.613	11.64	158	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

234.8

$$118' \times 18 \text{ mL} = 2124'$$



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/18/10Well ID: MW-14 AInitial Static Water Level (feet btoc): 101.21Final Water Level (feet btoc): 101.20Purge Start Time: 1620Sample Time: 1705Samplers= Signatures: JN/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-28Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 55 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1625	101.21	6.13	6.70	0.851	5.05	216	NA	80	cleaned out horiba cyp.
1635	101.20	5.82	6.99	0.899	4.99	202	31.4	80	
1640	101.20	5.51	6.48	0.910	5.01	211	17.3	80	
1645	101.20	5.50	6.49	0.910	5.04	209	7.1	80	
1650	101.20	5.50	6.56	0.911	4.96	204	4.5	80	
1655	101.20	5.65	6.67	0.910	5.12	199	0.0	80	
1700	101.20	5.63	6.79	0.908	4.95	198	0.0	80	
1705	101.20	5.72	6.82	0.909	4.97	196	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-20Well ID: mw-16AInitial Static Water Level (feet btoc): 108.91Final Water Level (feet btoc): 108.95Purge Start Time: 0938

Sample Time: _____

Samplers= Signatures: AP/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5187-Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0943	108.95	8.46	6.88	0.923	11.89	196	0.0	150	
0947	108.95	8.68	6.85	1.00	8.32	186	0.0	150	
0951	108.95	8.90	6.88	1.01	8.03	186	0.0	150	
0954	108.95	9.12	6.88	1.02	7.97	186	0.0	150	
0957	108.95	9.13	6.87	1.02	7.96	190	0.0	150	
1000	108.95	9.67	6.87	1.02	7.98	184	0.0	150	
1003	108.95	9.12	6.89	1.02	7.90	182	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-20-10Well ID: mw-16CInitial Static Water Level (feet btoc): 109.10Final Water Level (feet btoc): 109.10Purge Start Time: 0824Sample Time: 0900Samplers= Signatures: AF/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: ms/msDSample Number: 5187-36Controller Settings: Recharge: 14 secs Discharge: 16 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0826	109.10	8.74	6.85	0.832	6.98	210	0.0	150	
0833	109.10	8.74	6.85	0.832	6.98	210	0.0	150	
0837	109.10	9.01	6.75	0.853	6.33	202	0.0	150	
0840	109.10	9.37	6.74	0.855	6.07	194	0.0	150	
0844	109.10	9.36	6.69	0.864	5.64	191	0.0	150	
0847	109.10	9.35	6.73	0.863	5.76	187	0.0	150	
0850	109.10	9.31	6.71	0.864	5.70	184	0.0	150	
0853	109.10	9.27	6.73	0.864	5.53	186	0.0	150	
0856	109.10	9.20	6.74	0.864	5.68	182	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

$$340 \times 18 =$$



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/15/10Well ID: MW-17AInitial Static Water Level (feet btoc): 94.55Final Water Level (feet btoc): 94.55Purge Start Time: 810Sample Time: 0900Samplers= Signatures: WMTNOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Sample Number: 5187-5Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 55 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0820	94.55	8.21	6.71	0.680	7.38	241	5.6	100	
0825	94.55	7.35	6.78	0.733	7.77	251	14.1	100	
0830	94.55	8.43	6.94	0.758	7.45	258	10.1	100	
0835	94.55	8.67	6.98	0.769	7.68	251	8.2	100	
0840	94.55	8.71	7.02	0.803	8.01	245	3.0	100	
0845	94.55	8.80	7.18	0.818	7.90	232	0.0	100	
0850	94.55	8.82	7.18	0.864	7.96	226	0.0	100	
0855	94.55	8.91	7.25	0.870	7.94	221	0.0	100	
0900	94.55	8.91	7.26	0.874	7.94	219	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/15/10Well ID: MW-17CInitial Static Water Level (feet btoc): 9402Final Water Level (feet btoc): 94.02Purge Start Time: 1045Sample Time: 1125Samplers= Signatures: JN/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: —Sample Number: 5187-7Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 75 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1050	94.05	7.12	8.16	0.513	104 9.72	194	0.2	80	
1055		8.30	7.53	0.615	8.23	201	0.0	80	
1100		8.64	7.36	0.649	8.10	204	0.0	80	
1105		9.15	7.35	0.667	7.91	198	0.0	80	
1110		9.35	7.42	0.670	7.34	198	0.0	80	
1115		9.56	7.34	0.675	7.85	200	0.0	80	
1120		9.66	7.38	0.675	7.47	202	0.0	80	
1125		9.81	7.34	0.676	7.52	199	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/15/10Well ID: MW-17DInitial Static Water Level (feet btoc): 93.96Final Water Level (feet btoc): 93.96Purge Start Time: 0930Sample Time: 1015Samplers= Signatures: JN/WMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Sample Number: 5187-6Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0940	93.96	7.73	7.59	0.361	5.49	205	3.7	80	
0945		8.20	7.44	0.315	4.52	200	2.2	80	
0950		8.28	7.36	0.301	3.94	204	0.8	80	
0955		8.25	7.37	0.298	3.80	202	0.2	80	
1000		8.43	7.41	0.297	3.74	197	0.0	80	
1005		8.86	7.43	0.297	3.76	200	0.0	80	
1010		8.90	7.39	0.296	3.78	200	0.0	80	
1015		8.94	7.45	0.296	3.72	198	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/15/10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-18APurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 107.41Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 107.41QC Samples Collected: —Purge Start Time: 1400Sample Number: 5187-9Sample Time: 1440Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 55 psiSamplers= Signatures: JN/wmCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1405	107.41	11.00	7.46	0.519	10.99	201	0.0	120	
1410	107.41	9.81	7.47	0.433	8.73	203	0.0	120	
1415	107.41	10.01	6.83	0.404	8.21	207	0.0	120	
1420	107.41	10.25	6.60	0.398	7.54	209	0.0	120	
1425	107.41	10.35	6.65	0.398	7.48	209	0.0	120	
1430	107.41	10.56	6.48	0.401	7.60	204	0.0	120	
1435	107.41	10.46	6.51	0.404	7.52	210	0.0	120	
1440	107.41	10.49	6.53	0.4107	7.45	208	0.0	120	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/15/10Well ID: MW-18CInitial Static Water Level (feet btoc): 109.33Final Water Level (feet btoc): 109.33Purge Start Time: 1505Sample Time: 1620Samplers= Signatures: JN/MWOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: —Sample Number: 5187-10Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

1510 12-15-10
1515
600 JN-MW

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1510	109.33	11.11	6.06	0.596	8.90	199	0.0	80	
1520	109.33	9.86	8.69	0.642	9.31	182	0.0	80	
1525	109.33	8.63	8.92	0.679	9.69	21	0.0	80	
1530	109.33	9.20	7.68	0.718	7.98	-1	0.0	80	
1535	109.33	9.68	7.25	0.731	7.01	2	0.0	80	
1540	109.33	9.86	7.13	0.735	7.04	27	0.0	80	
1545	109.33	10.00	7.13	0.736	7.20	28	0.0	80	
1550	109.33	10.19	7.11	0.738	6.42	55	0.0	80	
1555	109.33	10.48	7.09	0.738	6.58	70	0.0	80	
1560	109.33	10.51	7.20	0.736	6.28	77	0.0	80	
1605	109.33	10.52	7.17	0.735	6.35	89	0.0	80	
1610	109.33	10.28	7.18	0.732	6.38	100	0.0	80	
1615	109.33	10.15	7.14	0.729	6.37	101	0.0	80	
1620	109.33	10.31	7.13	0.729	6.30	105	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/15/10OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-187Purging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 109.44Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 109.44QC Samples Collected: —Purge Start Time: 1300Sample Number: 5187-8Sample Time: 1335Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiSamplers= Signatures: JN/WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1300	109.44	9.91	8.42	0.511	10.63	180	7.0	100	
1305	109.44	10.01	7.94	0.531	8.96	186	6.5	100	
1310	109.44	10.22	7.74	0.536	7.97	190	5.1	100	
1315	109.44	10.49	7.50	0.539	6.82	189	3.1	100	
1320	109.44	10.67	7.41	0.540	6.90	191	1.5	100	
1325	109.44	10.88	7.35	0.539	6.71	193	1.2	100	
1330	109.44	10.95	7.45	0.538	6.41	196	1.2	100	
1335	109.44	11.06	7.31	0.538	6.59	191	1.2	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-16-10OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: mw-19APurging/Sampling Device: QED Bladder Pump/compressed nitrogen

Initial Static Water Level (feet btoc): _____

Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: NonePurge Start Time: 1420Sample Number: 5188-19Sample Time: 1455

Controller Settings: Recharge: _____ secs Discharge: _____ secs Pressure: _____ psi

Samplers= Signatures: AF/JG

Cycles Per Minute: _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1431		10.07	7.70	1.03	4.11	-16	4.0	75	
1434		10.08	7.63	1.04	0.76	-4	3.4	75	
1437		10.00	7.56	1.05	1.44	9	2.8	75	
1440		9.80	7.53	1.06	2.09	22	2.6	75	
1443		9.58	7.50	1.06	3.69	37	2.3	75	
1446		9.54	7.50	1.07	3.85	45	2.2	75	
1449		9.47	7.48	1.07	4.10	52	2.2	75	
1452		9.45	7.47	1.08	4.21	55	2.2	75	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-14-10Well ID: mw-19c

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1610Sample Time: 1648Samplers- Signatures: JG/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NASample Number: 5188-7Controller Settings: Recharge: 12 secs Discharge: 12 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1620		9.69	7.45	0.745	0.00	-93	5.6	100	
1623		9.76	7.43	0.750	0.00	-45	2.2	100	
1626		9.76	7.39	0.752	0.00	-33	1.3	100	
1629		9.77	7.34	0.752	0.00	-11	1.1	100	
1632		9.78	7.32	0.752	0.00	0	1.2	100	
1635		9.71	7.28	0.752	0.00	4	1.2	100	
1638		9.62	7.29	0.753	0.00	14	1.3	100	
1641		9.57	7.28	0.754	0.00	19	1.4	100	
1644		9.60	7.28	0.753	0.00	21	1.5	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-16-10Well ID: mw-20AInitial Static Water Level (feet btoc): NAFinal Water Level (feet btoc): NAPurge Start Time: 1315Sample Time: 1400Samplers- Signatures: AF/JCOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5188-18Controller Settings: Recharge: 7 secs Discharge: 3 secs Pressure: 70 psiCycles Per Minute: 6

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1346		9.22	7.49	0.770	0.00	-179	11.1	100	
1339		9.47	7.73	0.792	0.00	-190	9.3	100	
1342		9.69	8.03	0.821	0.00	-205	8.2	100	
1345		9.83	8.16	0.831	0.00	-216	7.5	100	
1348		9.91	8.36	0.833	0.00	-219	6.4	100	
1351		9.95	8.38	0.834	0.00	-221	6.1	100	
1354		9.99	8.43	0.832	0.00	-223	6.3	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-16-10OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: mw-20 DCPurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): NAAnalytical Parameters: LDL VOCsFinal Water Level (feet btoc): NAQC Samples Collected: NonePurge Start Time: 0940 1150Sample Number: 5188-15Sample Time: 1229Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiSamplers- Signatures: JG/AFCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1201		10.17	7.07	0.693	3.11	-41	3.5	150	
1204		10.12	7.16	0.693	3.41	-19	2.6	150	
1207		10.17	7.12	0.692	4.14	8	2.3	150	
1210		10.01	7.21	0.693	4.49	35	2.2	150	
1213		10.01	7.26	0.696	4.27	45	2.2	150	
1216		10.04	7.32	0.693	4.53	61	2.1	150	
1219		10.12	7.32	0.690	4.35	79	2.2	150	
1222		10.12	7.33	0.690	4.65	83	2.1	150	
1225		10.12	7.35	0.690	4.62	87	2.1	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



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$$1314 \text{ mL} / 150 = 8.76 \text{ min}$$

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-16-10Well ID: MW-20A/D

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1005 1238Sample Time: 1310Samplers= Signatures: JG/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Field DuplicateSample Number: 5188-16Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1247		9.38	6.96	0.644	5.25	-79	13.7	100	
1250		9.57	6.84	0.651	0.00	-119	13.4	100	
1253		9.89	6.77	0.651	0.00	-142	14.3	100	
1256		9.96	6.89	0.652	0.00	-148	15.1	100	
1259		10.01	6.87	0.652	0.00	-157	16.1	100	
1302		9.97	6.91	0.652	0.00	-160	15.1	100	
1305		10.04	6.91	0.649	0.00	-164	14.5	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-15-10

Well ID: MW-208E

Initial Static Water Level (feet btoc):

Final Water Level (feet btoc):

Purge Start Time: 0850

Sample Time: 0935

Samplers- Signatures: JG/AF

OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphere

Purging/Sampling Device: QED Bladder Pump/compressed nitrogen

Analytical Parameters: LDL VOCs

QC Samples Collected: None

Sample Number: 5128-8

Controller Settings: Recharge: 13 secs Discharge: 13 secs Pressure: 90 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0905		8.37	6.67	0.621	2.40	33	2.5	100	
0908		8.53	6.78	0.625	3.63	31	3.4	100	
0911		8.53	6.99	0.623	4.39	38	3.9	100	
0914		8.31	7.06	0.626	4.70	43	3.6	100	
0917		8.00	7.25	0.621	4.38	50	1.6	100	
0920		7.70	7.33	0.619	4.48	57	1.2	100	
0923		7.05	7.34	0.627	4.13	61	1.2	100	
0926		6.71	7.41	0.627	4.02	66	1.4	100	
0929		6.78	7.49	0.620	4.08	71	1.5	100	
0931		6.77	7.48	0.621	4.07	71	1.4	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

1998-L

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-17-10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-30APurging/Sampling Device: QED Bladder Pump/compressed nitrogen

Initial Static Water Level (feet btoc): _____

Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: NAPurge Start Time: 1510Sample Number: 5188-6Sample Time: 1550Controller Settings: Recharge: 915 secs Discharge: 9 secs Pressure: 70 psiSamplers- Signatures: JG/AFCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1527		10.19	7.75	0.732	12.93	-103	2.2	75	
1530		10.13	7.69	0.737	10.46	-116	2.0	75	
1533		10.27	7.60	0.738	1.75	-116	2.8	75	
1536		10.31	7.58	0.739	0.29	-114	3.8	75	
1539		10.36	7.54	0.735	0.00	-111	2.8	75	
1542		10.36	7.50	0.737	0.00	-109	3.1	75	
1545		10.41	7.52	0.735	0.00	-108	2.9	75	
1548		10.43	7.50	0.734	0.00	-105	2.9	75	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

270-6

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-14-10Well ID: mw-30C

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1414Sample Time: 1505Samplers- Signatures: JG/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NASample Number: 5188-5Controller Settings: Recharge: 13 secs Discharge: 13 secs Pressure: 80 psi

Cycles Per Minute: _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1435		10.37	6.76	0.746	7.26	-167	2.8	100	
1439		10.36	7.33	0.740	12.49	-143	1.1	100	
1442		10.46	7.59	0.729	12.31	-137	1.1	100	
1445		10.49	7.81	0.720	11.95	-123	0.7	100	
1449		10.48	7.89	0.715	11.57	-114	1.1	100	
1452		10.49	7.99	0.712	11.51	-100	0.7	100	
1455		10.49	8.11	0.712	12.03	+94	0.7	100	
1458		10.49	8.05	0.713	11.78	-89	0.7	100	
1501		10.47	8.03	0.714	11.94	-84	0.7	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

$$43 \times 18 \text{ mL} = 774 \text{ mL}$$



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-14-10Well ID: mw-30D

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1327Sample Time: 1410Samplers= Signatures: JG/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NASample Number: 5188-4Controller Settings: Recharge: 12 secs Discharge: 13 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1345		9.92	6.52	0.811	1.02	-152	19.4	100	
1348		10.15	6.50	0.797	0.00	-177	17.1	100	
1351		10.18	6.54	0.791	0.00	-185	16.8	100	
1354		10.32	6.46	0.778	0.00	-187	16.1	100	
1357		10.37	6.61	0.774	0.00	-194	17.3	100	
1400		10.36	6.63	0.765	0.00	-192	17.1	100	
1403		10.37	6.62	0.763	0.00	-191	13.9	100	
1406		10.36	6.63	0.764	0.00	-190	13.7	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

$$73' \times 18 \text{ mL} = 1314 \text{ mL}$$



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-14-10Well ID: MW-30E

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1255Sample Time: 1324Samplers= Signatures: SG/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NASample Number: 5193-3Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1300		9.64	6.59	0.758	0.00	-132	5.7	125	
1305		9.91	6.94	0.719	8.72	-102	5.2	125	
1308		10.13	7.16	0.711	9.06	-80	2.2	125	
1311		9.90	7.37	0.705	9.41	-74	1.9	125	
1314		10.15	7.51	0.702	9.76	-70	1.9	125	
1317		10.06	7.56	0.698	9.80	-68	1.7	125	
1320		10.10	7.65	0.696	9.91	-66	1.7	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing



CDM

111' x 18 = 1998 ~ 2000
 16 min @ 125 ~ 4/min

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-14-10Well ID: mw-31A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1135Sample Time: 1225Samplers= Signatures: JG/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NASample Number: 5188-2Controller Settings: Recharge: 12 secs Discharge: 10 secs Pressure: 75 psiCycles Per Minute: ~2.5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1207		8.77	6.85	0.987	5.46	-90	8.2	100	
1210		8.95	6.87	0.977	0.00	-91	7.4	100	
1214		9.20	6.79	0.979	0.00	-90	7.3	100	
1217		9.40	6.86	0.969	0.00	-93	6.6	100	
1220		9.48	6.84	0.967	0.00	-93	6.7	100	
1223		9.50	6.85	0.964	0.00	-94	6.3	100	
1226		9.43	6.91	0.958	0.00	-96	6.1	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

$$\sim 15' \times 18 \text{ mL} = 270 \text{ mL}$$



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12-14-10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-31CPurging/Sampling Device: QED Bladder Pump/compressed nitrogen

Initial Static Water Level (feet btoc): _____

Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: MS / MSDPurge Start Time: 1030Sample Number: 5188-1Sample Time: 1115Controller Settings: Recharge: 13 secs Discharge: 14 secs Pressure: 80 psiSamplers= Signatures: SG/AFCycles Per Minute: ~2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1035		7.77	6.51	0.696	8.09	-25	3.6	100	
1040		7.44	6.63	0.703	5.70	-25	2.3	100	
1043		7.09	6.70	0.714	5.16	-23	2.4	100	
1048		6.82	6.76	0.716	4.97	-22	2.4	75	
1053		6.66	6.84	0.714	4.96	-13	2.0	100	
1056		8.45	6.83	0.713	4.94	-6	1.8	100	
1059		9.14	6.85	0.716	5.06	7	1.5	100	
1102		9.81	6.90	0.711	5.34	18	0.4	100	
1105		10.07	6.87	0.710	5.39	27	1.1	100	
1108		10.18	6.89	0.710	5.45	25	1.6	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

$$43' \times 18 = 774 \text{ mL}$$



CDM

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/19/10Well ID: MW-41D1Initial Static Water Level (feet btoc): 121.31Final Water Level (feet btoc): 121.32Purge Start Time: 1255Sample Time: 1355Samplers= Signatures: JN/wmOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-33Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1300	121.32	8.65	8.26	0.565	10.94	182	26.4	100	
1305	121.32	8.92	7.23	0.6811	8.38	185	21.3	100	
1310	121.32	9.17	6.96	0.700	10.01	189	15.3	100	
1315	121.32	9.44	6.95	0.709	7.16	188	14.9	100	
1320	121.32	9.59	6.86	0.712	7.25	186	13.0	100	
1325	121.32	9.65	6.89	0.713	7.03	188	13.1	100	
1330	121.32	9.73	6.88	0.713	7.05	182	13.0	100	
1335	121.32	9.79	6.89	0.713	7.00	185	12.7	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/19/10Well ID: MW-4102Initial Static Water Level (feet btoc): 120.36Final Water Level (feet btoc): 120.36Purge Start Time: 1405Sample Time: 1515Samplers= Signatures: JN/WMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-34Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1410	120.36	10.20	7.63	0.463	9.37	182	100	100	
1415	120.36	7.95	7.44	0.403	6.85	179	139	100	
1420	120.36	8.36	7.22	0.385	5.47	183	95.1	100	
1425	120.36	8.41	7.19	0.383	5.32	177	94.0	100	
1430	120.36	8.54	7.12	0.380	4.81	178	60.7	100	
1435	120.36	8.55	7.09	0.378	4.35	182	46.7	100	
1440	120.36	8.78	7.12	0.377	4.33	179	33.1	100	
1445	120.36	8.77	7.05	0.375	4.31	176	33.5	100	
1450	120.36	8.91	7.16	0.374	2.87	179	32.9	100	
1455	120.36	9.02	7.03	0.374	2.75	175	26.7	100	
1500	120.36	9.04	7.04	0.372	2.64	176	24.8	100	
1505	120.36	9.09	7.14	0.372	2.64	181	19.1	100	
1510	120.36	9.32	7.07	0.371	2.79	174	18.2	100	
1515	120.36	9.43	7.08	0.371	2.99	176	18.4	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/14/10Well ID: MW-42DInitial Static Water Level (feet btoc): 121.60Final Water Level (feet btoc): 121.60Purge Start Time: 1415Sample Time: 1520Samplers= Signatures: JN/wmOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: —Sample Number: 5187-3Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiCycles Per Minute: 2

12-14-10
415 (JN)

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1415	121.60	10.01	7.70	0.398	13.89	195	32.7	100	
1420	121.60	9.86	8.39	0.475	9.29	190	27.8	100	
1425	121.60	10.18	8.89	0.506	8.79	191	35.1	100	
1430	121.60	10.47	7.62	0.528	8.43	203	45.8	100	
1435	121.60	10.51	7.31	0.531	8.48	205	46.2	100	
1440	121.60	10.51	7.23	0.529	8.31	202	44.5	100	
1445	121.60	10.39	7.16	0.533	8.24	202	41.5	100	
1450	121.60	10.59	7.18	0.529	8.22	206	31.9	100	
1455	121.60	10.63	7.21	0.528	8.07	202	11.1	100	
1500	121.60	10.54	7.17	0.524	7.76	199 ¹²⁻¹⁸⁻¹⁰	6.0	100	
1505	121.60	10.59	7.05	0.519	6.64	223 ²⁰¹	4.7	100	
1510	121.60	10.59	7.08	0.517	6.41	216	2.0	100	
1515	121.60	10.70	7.12	0.511	5.98	205	0.9	100	
1520	121.60	10.92	7.00	0.505	5.96	199	2.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/14/10Well ID: MW-42EInitial Static Water Level (feet btoc): 117.00Final Water Level (feet btoc): 121.84Purge Start Time: 1550Sample Time: 1710Samplers= Signatures: JN/NMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Sample Number: 5187-4Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 115 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1555	121.80	9.97	8.25	0.421	9.75	186	648	150	
1600	121.80	10.31	7.44	0.427	4.36	196	393	150	
1605	121.84	10.36	7.21	0.429	3.90	192	321	150	
1610	121.84	10.46	7.34	0.428	3.46	192	259	150	
1615	121.84	10.33	7.30	0.426	3.30	194	208	150	
1620	121.84	10.23	7.29	0.425	3.21	194	166	150	
1625	121.84	10.04	7.18	0.428	3.24	190	151	150	
1630	121.84	10.09	7.22	0.426	3.43	194	104	150	
1635	121.84	10.09	7.26	0.426	3.30	197	79.1	150	
1640	121.84	10.11	7.28	0.426	3.10	194	68.1	150	
1645	121.84	10.16	7.27	0.426	3.02	196	56.5	150	
1650	121.84	10.03	7.27	0.426	3.01	194	43.5	150	
1655	121.84	9.96	7.24	0.427	3.02	195	37.9	150	
1700	121.84	9.88	7.17	0.427	3.02	195	34.1	150	
1705	121.84	9.83	7.19	0.427	3.12	199	33.8	150	
1710	121.84	9.85	7.20	0.427	3.21	199	32.6	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/20/10
 Well ID: MW-43D
 Initial Static Water Level (feet btoc): 126.34
 Final Water Level (feet btoc): 123.12
 Purge Start Time: 0955
 Sample Time: 1035
 Samplers= Signatures: JN/wm

OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphere
 Purging/Sampling Device: QED Bladder Pump/compressed nitrogen
 Analytical Parameters: LDL VOCs
 QC Samples Collected: _____
 Sample Number: 5187-39
 Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psi
 Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1000	123.12	5.92	7.46	0.424	5.41	171	9.7	100	
1005	123.12	5.32	8.01	0.461	7.18	165	5.5	100	
1010	123.12	5.45	8.09	0.507	8.09	161	6.0	100	
1015	123.12	5.78	8.06	0.573	8.20	164	5.7	100	
1020	123.12	5.96	7.46	0.583	7.15	169	5.6	100	
1025	123.12	6.25	7.23	0.587	6.93	166	5.5	100	
1030	123.12	6.31	7.10	0.586	7.12	168	4.9	100	
1035	123.12	6.40	7.12	0.585	7.00	167	5.1	100	

Tubing Volume Calculations:
 0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/20/10

Well ID: MW-43E

Initial Static Water Level (feet btoc): 126.32

Final Water Level (feet btoc): 122.32

Purge Start Time: 0825

Sample Time: 0925

Samplers= Signatures: JN/Wm

OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphere

Purging/Sampling Device: QED Bladder Pump/compressed nitrogen

Analytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-38

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0830	122.33	13.38	4.78	6.272	9.53	257	18.0	100	
0835	122.33	5.80	7.62	0.501	10.71	214	12.7	100	
0840	122.33	5.78	7.90	0.505	10.72	213	12.8	100	
0845	122.33	5.54	8.46	0.459	10.66	219	13.5	100	
0850	122.33	6.09	8.08	0.452	10.41	194	50.4	100	
0855	122.33	6.10	7.70	0.431	10.08	183	33.3	100	
0900	122.33	6.43	7.44	0.423	9.75	177	19.1	100	
0905	122.33	6.71	7.29	0.421	9.52	175	14.9	100	
0910	122.33	6.86	7.19	0.421	9.23	174	9.3	100	
0915	122.32	7.07	7.17	0.414	8.83	171	5.9	100	
0920	122.32	7.10	7.18	0.419	8.52	168	5.7	100	
0925	122.32	7.17	7.19	0.419	8.49	167	5.6	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/14/10

Well ID: MW-44D

Initial Static Water Level (feet btoc): 110.58

Final Water Level (feet btoc): 110.58

Purge Start Time: 1020

Sample Time: 1120

Samplers= Signatures: JN/WM

OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphere

Purging/Sampling Device: QED Bladder Pump/compressed nitrogen

Analytical Parameters: LDL VOCs

QC Samples Collected: —

Sample Number: 5187-1

Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1020	110.58	5.31	7.25	0.488	8.05	227	69.4	80	
1025	110.58	6.23	7.77	0.460	7.68	211	50.5	80	
1030	110.58	6.76	7.54	0.440	6.74	208	37.0	80	
1035	110.58	7.12	7.45	0.424	5.68	203	28.4	80	
1040	110.58	7.34	7.22	0.413	4.90	195	21.4	80	
1045	110.58	7.53	7.30	0.411	6.51	197	19.2	80	
1050	110.58	7.62	7.26	0.408	4.62	193	17.8	80	
1055	110.58	7.73	7.21	0.406	4.76	192	14.7	80	
1100	110.58	7.90	7.28	0.403	4.77	191	14.9	80	
1105	110.58	8.38	7.10	0.399	4.59	189	12.2	80	
1110	110.58	8.58	7.19	0.399	4.46	189	17.2	80	
1115	110.58	8.73	7.22	0.398	4.48	186	18.9	80	
1120	110.58	8.75	7.25	0.397	4.44	187	19.1	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/14/10Well ID: MW-44 EInitial Static Water Level (feet btoc): 110.55Final Water Level (feet btoc): 110.55Purge Start Time: 1215Sample Time: 1300Samplers= Signatures: JN/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Sample Number: 5187-2Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 120 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1220	110.55	9.23	7.47	0.357	6.68	206	1.8	60	
1225	110.55	8.69	7.44	0.358	4.42	201	2.3	60	
1230	110.55	8.65	7.37	0.353	5.89	200	9.7	60	
1235	110.55	8.88	7.46	0.347	5.08	202	9.6	60	
1240	110.55	9.34	7.16	0.344	4.04	195	5.4	60	
1245	110.55	9.54	7.45	0.341	3.18	195	3.12	60	
1250	110.55	9.71	7.46	0.339	4.06	199	1.6	60	
1255	110.55	9.83	7.46	0.340	3.94	195	1.3	60	
1300	110.55	9.95	7.48	0.337	3.76	196	1.6	60	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/16/10Well ID: MW-45 CInitial Static Water Level (feet btoc): 102.21

Final Water Level (feet btoc): _____

Purge Start Time: 1415Sample Time: 1510Samplers= Signatures: JN/WMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-14Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 75 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1420	102.21	10.76	7.76	0.507	9.88	174	48.5	80	
1425	102.21	10.79	8.12	0.539	10.40	180	96.5	80	
1430	102.21	10.66	7.67	0.625	11.57	185	92.3	80	
1435	102.21	10.93	7.40	0.677	12.07	186	86.1	80	
1440	102.21	11.07	7.30	0.688	11.56	181	82.5	80	
1445	102.21	11.12	7.40	0.694	10.69	180	77.2	80	
1455	102.21	10.55	7.41	0.692	10.58	186	23.0	80	
1500	102.21	10.81	7.41	0.695	9.10	182	24.3	80	
1505	102.21	10.92	7.43	0.694	9.06	181	23.3	80	
1510	102.21	11.07	7.33	0.693	9.07	179	25.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/16/10Well ID: MW-45DInitial Static Water Level (feet btoc): 101.10Final Water Level (feet btoc): 101.10Purge Start Time: 1605Sample Time: 1700Samplers= Signatures: JN/WMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Sample Number: 5187-16Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1615	101.10	8.40	9.00	0.546	10.65	164	30.3	80	
1620	101.10	8.67	8.87	0.549	11.19	172	28.9	80	
1625	101.10	8.95	8.19	0.558	9.77	172	25.7	80	
1630	101.10	9.18	7.61	0.562	7.03	175	22.0	80	
1635	101.10	9.67	7.52	0.560	6.05	176	10.0	80	
1640	101.10	9.70	7.40	0.558	5.59	175	8.9	80	
1645	101.10	10.04	7.48	0.563	4.78	171	1.6	80	
1650	101.10	9.69	7.36	0.565	4.19	180	0.4	80	
1655	101.10	9.69	7.35	0.564	4.37	173	0.6	80	
1700	101.10	9.68	7.38	0.562	4.21	177	0.5	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

P.1 of 2

Site Name: Garvey Elevator Site Date: 12/18/10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-46D1Purging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 104.90Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 104.90

QC Samples Collected: _____

Purge Start Time: 1240Sample Number: 5187-27Sample Time: 1415Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 85 psiSamplers= Signatures: JN/WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1250	104.90	7.25	7.52	0.619	1.56	189	> 800	80	
1255	104.90	7.20	7.02	0.661	1.12	202	> 800	80	
1300	104.90	7.47	6.99	0.679	0.89	202	489	80	
1305	104.90	7.79	7.06	0.682	0.83	199	425	80	
1310	104.90	8.45	7.09	0.678	0.85	194	298	80	
1315	104.90	9.06	7.11	0.675	0.97	187	258	80	
1320	104.90	9.43	7.13	0.674	1.10	187	212	80	
1325	104.90	10.21	7.10	0.666	1.09	187	165	80	
1330	104.90	10.72	7.06	0.661	1.19	188	141	80	
1335	104.90	11.22	7.03	0.658	1.32	188	117	80	
1340	104.90	11.65	6.98	0.655	1.35	186	104	80	
1345	104.90	12.05	6.97	0.652	1.44	186	94	80	
1350	104.90	12.48	6.99	0.641	1.78	184	78.6	80	
1355	104.90	12.62	7.07	0.636	1.84	183	74	80	

SEE NEXT SHEET

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

p. 2 of 2

Site Name: Garvey Elevator Site Date: 12/18/10OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-46D1Purging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 104.90Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 104.90

QC Samples Collected: _____

Purge Start Time: 1240Sample Number: 5787-27Sample Time: 1415Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 85 psiSamplers= Signatures: JN/WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
Continued from previous sheet									
1400	104.90	12.76	7.06	0.634	1.89	180	66.1	80	
1405	104.90	12.91	7.10	0.629	1.78	181	61.0	80	
1410	104.90	12.03	7.10	0.629	1.79	179	54.6	80	
1415	104.90	12.93	7.11	0.627	1.82	180	49.1	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/18/10Well ID: MW-4612Initial Static Water Level (feet btoc): 115.19Final Water Level (feet btoc): 115.19Purge Start Time: 1030Sample Time: 1135Samplers= Signatures: JN/KWMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-26Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1035	115.19	7.90	8.35	0.499	8.65	161	35.9	80	
1040	115.19	7.75	8.63	0.495	8.88	172	31.3	80	
1045	115.19	7.98	8.60	0.495	9.83	175	23.0	80	
1050	109.85	8.27	8.08	0.502	8.59	173	33.0	80	
1055	106.70	8.65	7.44	0.508	6.86	169	18.5	80	
1100	103.26	8.73	7.34	0.507	6.82	164	19.5	80	
1105	99.60	8.98	7.36	0.504	6.22	159	19.3	80	
1110	99.51	9.13	7.34	0.504	4.94	156	18.6	80	
1115	99.40	9.32	7.34	0.503	5.00	153	15.5	80	
1120	99.41	9.46	7.31	0.504	5.21	152	16.0	80	
1125	99.42	9.69	7.32	0.505	5.79	152	13.6	80	
1130	99.40	9.64	7.30	0.504	5.96	154	12.5	80	
1135	99.40	9.60	7.28	0.503	5.79	151	12.5	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/19/10Well ID: MW-104AInitial Static Water Level (feet btoc): 104.97Final Water Level (feet btoc): 104.92Purge Start Time: 1055Sample Time: 1140Samplers= Signatures: JN/WMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-32Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 55 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1100	104.92	10.00	7.18	0.721	6.25	179	0.0	80	
1105	104.92	10.27	7.09	0.782	6.52	182	0.0	80	
1110	104.92	10.54	7.06	0.802	6.58	181	0.0	80	
1115	104.92	10.72	7.03	0.827	6.39	184	0.0	80	
1120	104.92	10.87	7.03	0.840	6.41	184	0.0	80	
1125	104.92	11.10	6.96	0.859	6.61	186	0.0	80	
1130	104.92	11.31	6.93	0.862	6.53	186	0.0	80	
1135	104.92	11.35	6.90	0.870	6.47	188	0.0	80	
1140	104.92	11.38	6.87	0.876	6.39	189	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/19/10Well ID: MW-104 CInitial Static Water Level (feet btoc): 104.21Final Water Level (feet btoc): 104.22Purge Start Time: 0940Sample Time: 1025Samplers= Signatures: JN/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: 5187-30FDSample Number: 5187-30Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 98 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0945	104.22	8.44	6.93	0.435	3.13	210	2.4	80	
0950	104.22	10.26	6.96	0.436	2.50	203	0.4	80	
0955	104.22	10.78	6.90	0.435	2.57	199	0.0	80	
1000	104.22	10.87	6.97	0.435	2.54	189	0.0	80	
1005	104.22	11.07	7.03	0.435	2.51	187	0.0	80	
1010	104.22	11.00	7.12	0.435	2.44	189	0.0	80	
1015	104.22	11.31	7.14	0.436	2.86	189	0.0	80	
1020	104.22	11.50	7.09	0.435	2.79	186	0.0	80	
1025	104.22	11.55	7.09	0.435	2.82	181	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/19/10Well ID: MW-104DInitial Static Water Level (feet btoc): 107.21Final Water Level (feet btoc): 107.22Purge Start Time: 0805Sample Time: 0850Samplers= Signatures: JNYWMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-29Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0810	107.22	11.80	4.09	0.136	5.78	287	6.7	80	
0815	107.22	11.08	6.00	0.398	4.23	186	7.4	80	
0820	107.22	8.60	6.65	0.391	4.05	203	1.6	80	
0825	107.22	8.30	6.83	0.371	4.37	206	0.0	80	
0830	107.22	8.20	6.75	0.359	3.99	220	0.0	80	
0835	107.22	8.19	6.66	0.356	4.01	226	0.0	80	
0840	107.22	8.26	6.46	0.351	4.08	238	0.0	80	
0845	107.22	8.48	6.45	0.348	4.04	242	0.0	80	
0850	107.22	8.67	6.48	0.347	4.02	241	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/18/10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-105APurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 120.21Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: _____

Purge Start Time: 0855Sample Number: 5187-25Sample Time: 0955Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 65 psiSamplers= Signatures: JN/LMMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0906	120.21	9.24	6.37	0.923	11.00	236	235	80	
0905	120.21	9.13	6.36	0.892	7.08	256	78.9	80	
0910	120.21	9.29	6.28	0.890	6.65	251	47.2	80	
0915	120.21	9.55	6.54	0.899	6.55	235	38.6	80	
0920	120.21	9.58	6.72	0.887	6.39	212	36.0	80	
0925	120.21	9.68	6.94	0.886	6.13	202	35.0	80	
0930	120.21	9.78	7.09	0.884	6.17	194	31.5	80	
0935	120.21	9.84	7.11	0.883	6.07	190	29.4	80	
0940	120.21	9.79	7.10	0.882	6.20	186	27.6	80	
0945	120.21	9.90	7.13	0.882	6.30	180	24.6	80	
0950	120.21	9.96	7.09	0.881	6.24	180	23.2	80	
0955	120.21	9.96	7.08	0.879	6.24	179	22.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/17/10Well ID: MW-105CInitial Static Water Level (feet btoc): 122.01

Final Water Level (feet btoc): _____

Purge Start Time: 1555Sample Time: 1630Samplers= Signatures: JN/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5187-24Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1555	122.01	9.66	7.50	0.752	13.81	185	3.8	100	
1600	122.01	8.46	6.90	0.790	9.70	193	4.8	100	
1605	122.01	9.17	6.86	0.803	6.66	181	1.8	100	
1610	122.01	9.75	6.79	0.806	6.77	181	0.0	100	
1615	122.01	9.91	6.78	0.806	6.48	178	0.0	100	
1620	122.01	10.14	6.81	0.805	6.11	181	0.0	100	
1625	122.06	10.18	6.91	0.804	6.08	179	0.0	100	
1630	122.01	10.19	6.88	0.803	6.06	177	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/17/10OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-105 DPurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 122.77Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 122.77QC Samples Collected: 5187-22 FDPurge Start Time: 1315Sample Number: 5187-22Sample Time: 1355 1400Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psiSamplers= Signatures: JN/WMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1325	122.77	9.50	7.88	0.489	7.91	181	0.0	80	
1330	122.77	9.28	8.08	0.474	8.21	185	0.0	80	
1335	122.77	9.84	7.36	0.469	4.66	186	0.0	80	
1340	122.77	9.99	7.09	0.468	4.32	184	0.0	80	
1345	122.77	10.22	7.08	0.468	3.90	186	0.0	80	
1350	122.77	10.57	7.18	0.467	4.92	185	0.0	80	
1355	122.77	10.73	7.09	0.466	4.66	179	0.0	80	
1400	122.77	10.71	7.16	0.465	4.99	177	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/16/10Well ID: MW-106AInitial Static Water Level (feet btoc): 120.90Final Water Level (feet btoc): 120.90Purge Start Time: 0825Sample Time: 0920Samplers= Signatures: JN/DVMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: —Sample Number: 5187-11Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 65 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0835	120.90	9.20	7.30	0.867	9.30	270	2.7	80	
0840	120.90	7.90	8.13	0.861	9.32	268	0.8	80	
0845	120.90	9.03	6.93	0.835	7.82	260	0.0	80	
0850	120.90	9.10	6.86	0.835	7.89	256	0.0	80	
0855	120.90	9.26	6.92	0.835	9.85	232	0.0	80	
0900	120.90	9.39	7.09	0.836	7.82	229	0.0	80	
0905	120.90	9.54	7.04	0.840	8.02	220	0.0	80	
0910	120.90	9.70	7.10	0.841	7.99	218	0.0	80	
0915	120.90	9.84	7.21	0.842	7.56	215	0.0	80	
0920	120.90	10.00	7.11	0.844	7.94	214	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/15/10Well ID: MW-106CInitial Static Water Level (feet btoc): 123.70Final Water Level (feet btoc): 123.70Purge Start Time: 1255Sample Time: 1335Samplers= Signatures: JN/wmOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: ~~5187-13-FD~~ JN 12-16-10Sample Number: 5187-13Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1300	123.70	11.59	7.22	0.564	8.06	168	0.0	100	
1305	123.70	11.70	7.17	0.567	7.40	170	0.0	100	
1310	123.70	11.76	7.02	0.570	7.55	171	0.0	100	
1315	123.70	11.90	6.92	0.570	7.36	174	0.0	100	
1320	123.70	12.15	6.92	0.570	7.22	178	0.0	100	
1325	123.70	12.27	7.00	0.567	6.93	179	0.0	100	
1330	123.70	12.25	7.01	0.567	7.01	178	0.0	100	
1335	123.70	12.33	7.04	0.564	6.92	175	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 12/16/10Well ID: MW-106DInitial Static Water Level (feet btoc): 123.76Final Water Level (feet btoc): 123.76Purge Start Time: 1055Sample Time: 1135Samplers= Signatures: JN/NMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: —Sample Number: 5187-12Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1100	123.76	7.08	8.77	0.383	12.73	184	0.0	80	
1105	123.76	7.74	8.39	0.387	12.10	181	0.0	80	
1110	123.76	8.19	7.81	0.389	8.64	188	0.0	80	
1115	123.76	8.71	7.42	0.386	6.29	179	0.0	80	
1120	123.76	8.78	7.34	0.385	5.95	180	0.0	80	
1125	123.76	9.08	7.24	0.385	5.54	183	0.0	80	
1130	123.76	9.52	7.35	0.385	5.62	179	0.0	80	
1135	123.76	9.80	7.31	0.383	5.70	181	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

EPA FIELD SHEETS

CHAIN OF CUSTODY RECORD ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print) <i>Brian Zurbuchen</i>	NAME OF SURVEY OR ACTIVITY <i>Garvey Elevator</i>	DATE OF COLLECTION <i>14-16</i> DAY <i>12</i> MONTH <i>10</i> YEAR	SHEET <i>1</i> of <i>1</i>
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CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS				F VOA SET (2 VIALS EA)	SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE		water	soil	sediment	dust	other	
	NUMBERS OF CONTAINERS PER SAMPLE NUMBER										
5188-1					3	x					MS/MSD Analysis
5188-2					1	x					
5188-3					1	x					
5188-4					1	x					
5188-5					1	x					
5188-6					1	x					
5188-7					1	x					
5188-8					1	x					
5188-9					1	x					
5188-10					1	x					
5188-11					3	x					MS/MSD Analysis
5188-12					1	x					
5188-13					1	x					
5188-14					1	x					
5188-15					1	x					
5188-16					1	x					
5188-16 FD					1	x					Field Duplicate
5188-18					1	x					
5188-19					1	x					
5188-43 FB					1	x					Field/Trip Blank
<i>ASR NOT Complete</i> <i>12/16/10</i>											

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
_____ PIECE(S) CONSISTING OF _____ BOX(ES) <u>2</u> ICE CHEST(S); OTHER _____	_____ COMMERCIAL CARRIER: _____ _____ COURIER _____ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD				
RELINQUISHED BY (SAMPLER) <i>[Signature]</i>	DATE <i>12/16/10</i>	TIME <i>17:20</i>	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☒ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	

**CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

ACTIVITY LEADER(Print) Brian Furber	NAME OF SURVEY OR ACTIVITY Garvey Elevator	DATE OF COLLECTION 12-19 12 10 DAY MONTH YEAR	SHEET 1 of 1
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CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS					SAMPLED MEDIA					RECEIVING LABORATORY REMARKS-OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2 VIALS EA)	water	soil	sediment	dust	other	
5188-20					1	X					
5188-21					1	X					
5188-21FD					1	X					Field Duplicate
5188-23					1	X					
5188-24					1	X					
5188-25					1	X					
5188-26					1	X					
5188-27					1	X					
5188-28					1	X					
5188-29					1	X					
5188-30					3	X					ms/msd Analysis
5188-31					1	X					
5188-32					1	X					
5188-33					1	X					
5188-33FD					1	X					Field Duplicate
5188-35					1	X					
5188-36					1	X					
5188-37					1	X					
5188-37FD					1	X					Field Duplicate
5188-44FB					1	X					Trip Blank
5188-45FB					1	X					Trip Blank
Asp Complete											

DESCRIPTION OF SHIPMENT _____ PIECE(S) CONSISTING OF _____ BOX(ES) ☒ ICE CHEST(S): OTHER _____	MODE OF SHIPMENT _____ COMMERCIAL CARRIER: _____ _____ COURIER ☒ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) _____
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PERSONNEL CUSTODY RECORD			
RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY
	12-21-10	0915	R. Wiggan
☐ SEALED ☒ UNSEALED			☐ SEALED ☒ UNSEALED
REASON FOR CHANGE OF CUSTODY	Rec'd at lab		
RELINQUISHED BY	DATE	TIME	RECEIVED BY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED
REASON FOR CHANGE OF CUSTODY			
RELINQUISHED BY	DATE	TIME	RECEIVED BY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED
REASON FOR CHANGE OF CUSTODY			

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 1 QC Code: Matrix: Water Tag ID: 5188-1-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-31C

External Sample Number: MW-31C

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/14/10 11:15
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.710	MS/cm
Dissolved Oxygen :	5.45	mg/L
Temperature :	10.18	Deg C
Turbidity :	1.6	NTU
pH :	6.89	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) media = GW
method = Low flow
ORP = 25 mV
MS/MSD collected

Sample Collected By: AK/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 2 QC Code: Matrix: Water Tag ID: 5188-2-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-31A

External Sample Number: MW-31A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/14/10 12:25
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.958	ms/cm
Dissolved Oxygen :	0.00	mg/L
Temperature :	9.43	Deg C
Turbidity :	6.1	NTU
pH :	6.91	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = -96 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 3 QC Code: Matrix: Water Tag ID: 5188-3-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-30E

External Sample Number: MW-30E

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/14/10 13:24
Longitude: End: 1/1/1

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.696	ms/cm
Dissolved Oxygen:	9.91	mg/L
Temperature:	10.10	Deg C
Turbidity:	1.7	NTU
pH:	7.65	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = -66 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 4 QC Code: ___ Matrix: Water Tag ID: 5188-4-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-300

External Sample Number: MW-300

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: ___ Sample Collection: Start: 12/14/10 14:10
Longitude: ___ End: 1/1/___

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.764	$\mu\text{mhos/cm}$
Dissolved Oxygen:	0.00	mg/L
Temperature:	10.36	Deg C
Turbidity:	13.7	NTU
pH:	6.63	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs In Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low Flow
ORP = -190 mV

Sample Collected By: AFJG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 5 QC Code: ___ Matrix: Water Tag ID: 5188-5-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-30CExternal Sample Number: MW-30C

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 12/14/10 15:05
Longitude: _____ End: 1/1 _____

Field Measurement

Parameter	Value	Units
Conductance, Specific:	<u>0.714</u>	<u>µmhos/cm</u>
Dissolved Oxygen:	<u>11.94</u>	mg/L
Temperature:	<u>10.47</u>	Deg C
Turbidity:	<u>0.7</u>	NTU
pH:	<u>8.03</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = -84 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 6 QC Code: Matrix: Water Tag ID: 5188-6-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-30A

External Sample Number: MW-30A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/14/10 15:50
Longitude: End: 1 1 :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.734	$\frac{mS}{cm}$ ^{MS AF}
Dissolved Oxygen :	0.00	mg/L
Temperature :	10.43	Deg C
Turbidity :	2.9	NTU
pH :	4.50	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) media = GW
method = low flow
ORP = ~105 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 7 QC Code: Matrix: Water Tag ID: 5188-7-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-19C

External Sample Number: MW-19C

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/14/10 16:48
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.753	$\mu\text{mhos/cm}$
Dissolved Oxygen:	0.00	mg/L
Temperature:	9.60	Deg C
Turbidity:	1.5	NTU
pH:	7.28	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low Flow
ORP = 21 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5188 **Sample Number:** 8 **QC Code:** ____ **Matrix:** Water **Tag ID:** 5188-8-__

Project ID: BZA72Z01 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER **Site ID:** A72Z **Site OU:** 01

Location Desc: MW-20E

External Sample Number: MW-20E

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: _____ **Sample Collection: Start:** 12/15/10 09:35
Longitude: _____ **End:** 1/1/ :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.621</u>	$\frac{\mu\text{mhos}}{\text{cm}}$
Dissolved Oxygen :	<u>4.07</u>	mg/L
Temperature :	<u>16.77</u>	Deg C
Turbidity :	<u>1.4</u>	NTU
pH :	<u>7.48</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low Flow
ORP = 71 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 9 QC Code: Matrix: Water Tag ID: 5188-9-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-1A

External Sample Number: MW-1A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/15/10 12:22
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.818	$\mu\text{mhos/cm}$
Dissolved Oxygen:	4.21	mg/L
Temperature:	10.38	Deg C
Turbidity:	9.6	NTU
pH:	7.11	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = 123 mV

Sample Collected By:

AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 10 QC Code: Matrix: Water Tag ID: 5188-10-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-9A

External Sample Number: MW-9A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/15/10 13:44
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.931	µmhos/cm
Dissolved Oxygen:	4.55	mg/L
Temperature:	10.19	Deg C
Turbidity:	1.2	NTU
pH:	7.38	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = 128 mV

Sample Collected By: AF/JS

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 11 QC Code: Matrix: Water Tag ID: 5188-11-__

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-8A

External Sample Number: MW-8A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/15/10 15:05
Longitude: End: 1/1/1 :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	1.37	$\mu\text{mhos/cm}$
Dissolved Oxygen :	3.48	mg/L
Temperature :	11.23	Deg C
Turbidity :	1.2	NTU
pH :	7.30	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = 134 mV

MS/MSD Analysis

Sample Collected By: AF/JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 12 QC Code: Matrix: Water Tag ID: 5188-12-__

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-2A

External Sample Number: MW-2A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/15/10 16:27
Longitude: End: 1/1 :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.753</u>	<u>ms/cm</u>
Dissolved Oxygen :	<u>3.22</u>	<u>mg/L</u>
Temperature :	<u>10.40</u>	<u>Deg C</u>
Turbidity :	<u>0.9</u>	<u>NTU</u>
pH :	<u>6.89</u>	<u>SU</u>

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs In Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = 154 mV

Sample Collected By: AP/J6

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 13 QC Code: Matrix: Water Tag ID: 5188-13-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-7B

External Sample Number: MW-7B

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 10:25
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.883	$\mu\text{mhos}/\text{cm}$
Dissolved Oxygen:	5.59	mg/L AP
Temperature:	10.39	Deg C
Turbidity:	0.8	NTU
pH:	7.06	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW

method = Low Flow

ORP = 161 mV

Sample Collected By:

AF/JC

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 14 QC Code: Matrix: Water Tag ID: 5188-14-__

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-7A

External Sample Number: MW-7A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 11:10
Longitude: End: 1/1 :

Field Measurement

Parameter	Value	Units
Conductance, Specific:	<u>0.850</u>	<u>umhos/cm</u>
Dissolved Oxygen:	<u>2.87</u>	<u>mg/L</u>
Temperature:	<u>10.66</u>	<u>Deg C</u>
Turbidity:	<u>1.6</u>	<u>NTU</u>
pH:	<u>7.70</u>	<u>SU</u>

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP: 162 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 15 QC Code: Matrix: Water Tag ID: 5188-15-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-20PC
AF 12/16/10
External Sample Number: MW-20PC
AF 12/16/10
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 12:29
Longitude: End: 1/1/12

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.090	mS/cm AF
Dissolved Oxygen :	4.62	mg/L
Temperature :	10.12	Deg C
Turbidity :	2.1	NTU
pH :	7.35	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low Flow
ORP = 87 mV

Sample Collected By:

AF/JLG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 16 QC Code: Matrix: Water Tag ID: 5188-16-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-20D

External Sample Number: MW-20D

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 13:10
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.649	$\mu\text{S}/\text{cm}$
Dissolved Oxygen :	0.00	mg/L
Temperature :	10.84	Deg C
Turbidity :	14.5	NTU
pH :	6.91	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low Flow
ORP = -164 mV

Sample Collected By:

AF/JC

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 17 QC Code: Matrix: Water Tag ID: 5188-17-16 FD

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-20D Duplicate

External Sample Number: MW-20D Duplicate

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 13:10
Longitude: End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u> </u>	umhos/cm
Dissolved Oxygen :	<u> </u>	mg/L
Temperature :	<u> </u>	Deg C
Turbidity :	<u> </u>	NTU
pH :	<u> </u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) See fieldsheet 5188-16

Sample Collected By: AF/SL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 18 QC Code: Matrix: Water Tag ID: 5188-18-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-20A

External Sample Number: MW-20A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 14:00
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.832	$\mu\text{S}/\text{cm}$
Dissolved Oxygen :	0.00	mg/L
Temperature :	9.99	Deg C
Turbidity :	6.3	NTU
pH :	8.43	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = -223 mV

Sample Collected By:

AE/JC

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 19 QC Code: Matrix: Water Tag ID: 5188-19-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-19A

External Sample Number: MW-19A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 14:55
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific:	1.08	mS/cm
Dissolved Oxygen:	4.21	mg/L
Temperature:	9.45	Deg C
Turbidity:	2.2	NTU
pH:	7.47	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = 55 mV

Sample Collected By:

AF/JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 43 QC Code: FB Matrix: Water Tag ID: 5188-43-FB

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: LDL VOA Trip Blank sample

External Sample Number: Trip Blank

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 12/16/10 08:45
Longitude: _____ End: 1/1 :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>NA</u>	umhos/cm
Dissolved Oxygen :	<u>NA</u>	mg/L
Temperature :	<u>NA</u>	Deg C
Turbidity :	<u>NA</u>	NTU
pH :	<u>NA</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 20 QC Code: Matrix: Water Tag ID: 5188-20-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-50

External Sample Number: MW-50

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/17/10 09:00
Longitude: End: 1/1/11 :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.596	$\mu\text{S}/\text{cm}$
Dissolved Oxygen :	7.17	mg/L
Temperature :	9.02	Deg C
Turbidity :	4.3	NTU
pH :	7.02	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = 195 mV

Sample Collected By: AF/56

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 21 QC Code: Matrix: Water Tag ID: 5188-21-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-5B

External Sample Number: MW-5B

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/17/10 10:20
Longitude: End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.919	$\mu\text{mhos/cm}$
Dissolved Oxygen :	5.23	mg/L
Temperature :	10.08	Deg C
Turbidity :	8.9	NTU
pH :	7.15	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = 171 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 22 QC Code: Matrix: Water Tag ID: 5188-22-²¹FD
AF

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-21 Duplicate
External Sample Number: MW-21 Duplicate
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/17/10 10:20
Longitude: End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u> </u>	umhos/cm
Dissolved Oxygen :	<u> </u>	mg/L
Temperature :	<u> </u>	Deg C
Turbidity :	<u> </u>	NTU
pH :	<u> </u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

See fieldsheet 5188-21

Sample Collected By: AP/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 23 QC Code: Matrix: Water Tag ID: 5188-23-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-5A

External Sample Number: MW-5A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/17/10 11:30
Longitude: End: 1/1/11

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.866	$\mu\text{mhos/cm}$
Dissolved Oxygen :	5.82	mg/L
Temperature :	8.68	Deg C
Turbidity :	8.2	NTU
pH :	7.30	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = 152 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 24 QC Code: Matrix: Water Tag ID: 5188-24-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-6E

External Sample Number: MW-6E

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: / / :

Longitude: End: 12/17/10 :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.347	$\mu\text{mhos/cm}$
Dissolved Oxygen :	7.72	mg/L
Temperature :	9.01	Deg C
Turbidity :	10.2	NTU
pH :	7.56	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = 136 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 25 QC Code: Matrix: Water Tag ID: 5188-25-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-6D

External Sample Number: MW-6D

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/17/10 14:40

Longitude:

End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.563	$\mu\text{mhos/cm}$
Dissolved Oxygen :	6.96	mg/L
Temperature :	8.92	Deg C
Turbidity :	13.8	NTU
pH :	7.36	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) media = GW
method = low flow
ORP = 141 mV

Sample Collected By: AP/JL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 26 QC Code: Matrix: Water Tag ID: 5188-26-__

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-6A

External Sample Number: MW-6A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/17/10 15:52

Longitude: _____

End: 1/1/11 :_

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.911	$\mu\text{mhos}/\text{cm}$
Dissolved Oxygen :	5.09	mg/L
Temperature :	9.98	Deg C
Turbidity :	17.4	NTU
pH :	7.14	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = 142 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 27 QC Code: Matrix: Water Tag ID: 5188-27-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
 Project Desc: Garvey Elevator - RI/FS sampling
 City: Hastings State: Nebraska
 Program: Superfund
 Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-3E

External Sample Number: MW-3E

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/18/10 10:10

Longitude:

End: 1/1/11 :

Field Measurement

Parameter

Value

Units

Conductance, Specific :	0.723	umhos/cm
Dissolved Oxygen :	7.54	mg/L
Temperature :	9.18	Deg C
Turbidity :	0.0	NTU
pH :	7.88	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
 method = Low flow
 ORP = ~~65mV~~ 65mV

Sample Collected By: AF/JL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 28 QC Code: Matrix: Water Tag ID: 5188-28-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-3B

External Sample Number: MW-3B

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/18/10 11:40

Longitude:

End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.923	umhos/cm
Dissolved Oxygen :	7.72	mg/L
Temperature :	10.55	Deg C
Turbidity :	0.0	NTU
pH :	7.18	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) media = GW
method = Low flow
ORP = 136 mV

Sample Collected By: AP/JB

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 29 QC Code: Matrix: Water Tag ID: 5188-29-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-3A

External Sample Number: MW-3A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/18/10 12:49
Longitude: End: 1/1/12

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.937	umhos/cm
Dissolved Oxygen :	4.29	mg/L
Temperature :	8.19	Deg C
Turbidity :	0.0	NTU
pH :	7.28	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = 148 mV

Sample Collected By: AF/56

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 30 QC Code: ___ Matrix: Water Tag ID: 5188-30-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-30

External Sample Number: MW-30

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 12/18/10 14:30
Longitude: _____ End: 1/1/ :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.704</u>	$\mu\text{mhos/cm}$
Dissolved Oxygen :	<u>2.82</u>	mg/L
Temperature :	<u>10.67</u>	Deg C
Turbidity :	<u>0.0</u>	NTU
pH :	<u>7.29</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method: low flow
ORP: 156 mV

MS/MSD Analysis

Sample Collected By: AP/JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 31 QC Code: Matrix: Water Tag ID: 5188-31-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: Rolls Old Well

External Sample Number: Rolls Old Well

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/18/10 15:38

Longitude: _____

End: 1/1/ :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>NA</u>	umhos/cm
Dissolved Oxygen :	<u>NA</u>	mg/L
Temperature :	<u>NA</u>	Deg C
Turbidity :	<u>NA</u>	NTU
pH :	<u>NA</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: AP/JS

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 32 QC Code: Matrix: Water Tag ID: 5188-32-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: Rolls New well
External Sample Number: Rolls New well
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/18/10 15:45
Longitude: End: 1/1/ :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>NA</u>	umhos/cm
Dissolved Oxygen :	<u>NA</u>	mg/L
Temperature :	<u>NA</u>	Deg C
Turbidity :	<u>NA</u>	NTU
pH :	<u>NA</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By:

AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 33 QC Code: ___ Matrix: Water Tag ID: 5188-33-___

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: mw-4BExternal Sample Number: MW-4B

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 12/19/10 08:45
Longitude: _____ End: ___/___/___ ___:___

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.926</u>	<u>µmhos/cm</u>
Dissolved Oxygen :	<u>8.95</u>	<u>mg/L</u>
Temperature :	<u>10.89</u>	<u>Deg C</u>
Turbidity :	<u>0.0</u>	<u>NTU</u>
pH :	<u>6.83</u>	<u>SU</u>

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = 156 mV

Sample Collected By: AF/JB

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 34 QC Code: Matrix: Water Tag ID: 5188-34³³_{AP}^{FD}

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-4B Duplicate

External Sample Number: MW-4B Duplicate

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/19/10 08:45

Longitude:

End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u> </u>	umhos/cm
Dissolved Oxygen :	<u> </u>	mg/L
Temperature :	<u> </u>	Deg C
Turbidity :	<u> </u>	NTU
pH :	<u> </u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs In Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

See fieldsheet 5188-33

Sample Collected By: AF/JO

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 35 QC Code: Matrix: Water Tag ID: 5188-35-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-4A
External Sample Number: MW-4A
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/19/10 10:00
Longitude: End: 1/1/10 :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.930	umhos/cm
Dissolved Oxygen :	6.62	mg/L
Temperature :	9.27	Deg C
Turbidity :	0.0	NTU
pH :	7.09	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = BW
method = low flow
ORP = 164 mV

Sample Collected By: AF/JC

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 36 QC Code: Matrix: Water Tag ID: 5188-36-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-13E

External Sample Number: MW-13E

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/19/10 11:35
Longitude: End: : :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.613	umhos/cm
Dissolved Oxygen :	11.64	mg/L AP
Temperature :	9.17	Deg C
Turbidity :	0.0	NTU
pH :	7.43	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = 158 mV

Sample Collected By:

AP/JB

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 37 QC Code: Matrix: Water Tag ID: 5188-37-

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-13C

External Sample Number: MW-13C

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/19/10 12:55

Longitude:

End: 1/1/11

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.644	umhos/cm
Dissolved Oxygen :	9.44	mg/L
Temperature :	8.85	Deg C
Turbidity :	0.0	NTU
pH :	7.36	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = 159 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5188 Sample Number: 38 QC Code: Matrix: Water Tag ID: 5188-38-³⁷FD
_{AP}

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: MW-13C Duplicate
External Sample Number: MW-13C Duplicate
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/19/10 12:55
Longitude: End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u> </u>	umhos/cm
Dissolved Oxygen :	<u> </u>	mg/L
Temperature :	<u> </u>	Deg C
Turbidity :	<u> </u>	NTU
pH :	<u> </u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A) see fieldsheet 5188-37

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 44 QC Code: FB Matrix: Water Tag ID: 5188-44-FB

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: LDL VOA Trip Blank sample

External Sample Number:

Trip Blank

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/19/10 14:50
Longitude: End: 1/1/11

Field Measurement

Parameter	Value	Units
Conductance, Specific :		umhos/cm
Dissolved Oxygen :		mg/L
Temperature :		Deg C
Turbidity :		NTU
pH :		SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5188 Sample Number: 45 QC Code: FB Matrix: Water Tag ID: 5188-45-FB

Project ID: BZA72Z01 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - ON-SITE SOILS AND GROUNDWATER Site ID: A72Z Site OU: 01

Location Desc: LDL VOA Trip Blank sample

External Sample Number:

Trip Blank

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: *12/19/10* _____

Longitude: _____

End: *1/1/11* _____

Field Measurement

Parameter

Value

Units

Conductance, Specific : _____ umhos/cm

Dissolved Oxygen : _____ mg/L

Temperature : _____ Deg C

Turbidity : _____ NTU

pH : _____ SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: HGL

(wm) 12/18/10
12

US EPA ARCHIVE DOCUMENT

7-EPA-9262(Revised 5/85)

**CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII**

ACTIVITY LEADER(Print) Brian Zurbuchen	NAME OF SURVEY OR ACTIVITY Garvey Elementary Site	DATE OF COLLECTION 12-20 10 2010 DAY MONTH YEAR	SHEET 1 of 2
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CONTENTS OF SHIPMENT

SAMPLE NUMBER	TYPE OF CONTAINERS					SAMPLED MEDIA					RECEIVING LABORATORY REMARKS/OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	CUBITAINER	BOTTLE	BOTTLE	BOTTLE	VOA SET (2-VIALS EA)	water	soil	sediment	dust	other	
5187-16					1	X					
5187-17					1	X					Rinsate
5187-18					1	X					
5187-18 FD					1	X					Duplicate
5187-20					1	X					
5187-21					1	X					
5187-22					1	X					Duplicate
5187-22 FD					1	X					
5187-24					1	X					
5187-25					1	X					
5187-26					1	X					
5187-27					1	X					
5187-28					1	X					
5187-29					1	X					
5187-30					1	X					
5187-30 FD					1	X					Duplicate
5187-32					3	X					Extra Volume for MS/MSD
5187-33					1	X					
5187-34					1	X					
5187-44 PB					1	X					Trip Blank
5187-35					3	X					Extra Volume for MS/MSD
5187-38					1	X					
5187-39					1	X					

DESCRIPTION OF SHIPMENT _____ PIECE(S) CONSISTING OF _____ BOX(ES) ☒ ICE CHEST(S): OTHER _____	MODE OF SHIPMENT _____ COMMERCIAL CARRIER: _____ _____ COURIER ☒ SAMPLER CONVEYED (SHIPPING DOCUMENT NUMBER) _____
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PERSONNEL CUSTODY RECORD					
RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY	
<i>[Signature]</i>	12-21-10	0915	<i>RD Wiggan</i>	Rec'd at lab	
☐ SEALED ☒ UNSEALED			☐ SEALED ☒ UNSEALED		
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY	
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED		
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY	
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED		

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

ACTIVITY LEADER(Print) <u>Brian</u>	NAME OF SURVEY OR ACTIVITY <u>Garvey Elevator Site</u>	DATE OF COLLECTION <u>19-20</u> <u>12</u> <u>10</u> DAY MONTH YEAR	SHEET <u>2</u> of <u>2</u>
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CONTENTS OF SHIPMENT

[illegible]

DESCRIPTION OF SHIPMENT	MODE OF SHIPMENT
_____ PIECE(S) CONSISTING OF _____ BOX(ES) X ICE CHEST(S): OTHER _____	_____ COMMERCIAL CARRIER: _____ _____ COURIER X SAMPLER CONVEYED _____ (SHIPPING DOCUMENT NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (SAMPLER)	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☒ SEALED ☒ UNSEALED	12-21-10	0915	<i>Row Wiggins</i>	<i>Rec'd at lab</i>
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	
RELINQUISHED BY	DATE	TIME	RECEIVED BY	REASON FOR CHANGE OF CUSTODY
☐ SEALED ☐ UNSEALED			☐ SEALED ☐ UNSEALED	

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 1 QC Code: Matrix: Water Tag ID: 5187-1-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-44D
External Sample Number: MW-44D
Expected Conc: (or Circle One: Low Medium High) Date 12/14/10 Time(24 hr) 11:20
Latitude: Sample Collection: Start: End: 11:20
Longitude: End: 11:20

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.397	umhos/cm
Dissolved Oxygen:	4.44	mg/L
Temperature:	8.75	Deg C
Turbidity:	19.1	NTU
pH:	7.25	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WY/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 2 QC Code: __ Matrix: Water Tag ID: 5187-2-__

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc: MW-44E

External Sample Number: MW-44E

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: ____

Sample Collection: Start: 12/14/10 13:00

Longitude: ____

End: 1/1/ :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.337</u>	umhos/cm
Dissolved Oxygen :	<u>3.76</u>	mg/L
Temperature :	<u>9.95</u>	Deg C
Turbidity :	<u>1.6</u>	NTU
pH :	<u>7.48</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WJBN

US EPA ARCHIVE DOCUMENT

Project ID:	BZA72Z02	Project Manager:	Brian Zurbuchen
Project Desc:	Garvey Elevator - RI/FS sampling		
City:	Hastings	State:	Nebraska
Program:	Superfund		
Site Name:	GARVEY ELEVATOR - OFF-SITE GROUNDWATER	Site ID:	A72Z
		Site OU:	02

Field Measurement

Laboratory Analyses:

Sample Comments:

Sample Collected By: SAM

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 4 QC Code: ___ Matrix: Water Tag ID: 5187-4-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-42EExternal Sample Number: MW-42E

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/11/10 17:10

Longitude: _____

End: 1/1/ ::

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.427</u>	umhos/cm
Dissolved Oxygen :	<u>3.21</u>	mg/L
Temperature :	<u>9.85</u>	Deg C
Turbidity :	<u>32.6</u>	NTU
pH :	<u>7.20</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WJ/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 5 QC Code: Matrix: Water Tag ID: 5187-5-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-17A
External Sample Number: MW-17A
Expected Conc: (or Circle One: Low Medium High) Date: 12/15/10 Time(24 hr): 09:00
Latitude: Sample Collection: Start: 12/15/10 End: 1/1/10
Longitude: : :

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.874	umhos/cm
Dissolved Oxygen:	7.94	mg/L
Temperature:	8.91	Deg C
Turbidity:	0.0	NTU
pH:	7.26	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WJF JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 6 QC Code: Matrix: Water Tag ID: 5187-6-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-17D
External Sample Number: MW-17D
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/15/10 10:15
Longitude: End: : :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.296	umhos/cm
Dissolved Oxygen :	3.72	mg/L
Temperature :	8.94	Deg C
Turbidity :	0.0	NTU
pH :	7.45	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs In Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: Wm/Jan

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 7 QC Code: Matrix: Water Tag ID: 5187-7-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-17C

External Sample Number: MW-17C

Expected Conc: (or Circle One: ☒ Low ☐ Medium ☐ High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/15/10 11:25

Longitude:

End: 1/1/11

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.676	umhos/cm
Dissolved Oxygen:	7.52	mg/L
Temperature:	9.81	Deg C
Turbidity:	0.0	NTU
pH:	7.34	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WMT/IN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 8 QC Code: Matrix: Water Tag ID: 5187-8-

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc:

MW-18D

External Sample Number:

MW-18D

Expected Conc:

(or Circle One: ☒ Low ☐ Medium ☐ High)

Date

Time(24 hr)

Latitude:

Sample Collection: Start: 12/15/10

13:35

Longitude:

End: 1/1/11

:

Field Measurement

Parameter

Value

Units

Conductance, Specific:

0.538

umhos/cm

Dissolved Oxygen:

6.59

mg/L

Temperature:

11.06

Deg C

Turbidity:

1.2

NTU

pH:

7.31

SU

Laboratory Analyses:

Container

Preservative

Holding Time

Analysis

4 - 40mL VOA vial

4 Deg C, HCL to pH<2

14 Days

1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By:

WJ/TN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 9 QC Code: Matrix: Water Tag ID: 5187-9-

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc: MW-18A

External Sample Number: MW-18A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/15/10 14:40

Longitude:

End: 1/1/11

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.407	umhos/cm
Dissolved Oxygen :	7.45	mg/L
Temperature :	10.49	Deg C
Turbidity :	0.0	NTU
pH :	6.53	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: [Signature]

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 10 QC Code: Matrix: Water Tag ID: 5187-10-

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc: MW-18C

External Sample Number: MW-18C

Expected Conc: (or Circle One: ☒ Low ☐ Medium ☐ High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/15/10 16:20

Longitude:

End: 1/1/ :

Field Measurement

Parameter

Value

Units

Conductance, Specific: 0.729 umhos/cm

Dissolved Oxygen: 0.30 mg/L

Temperature: 10.31 Deg C

Turbidity: 0.0 NTU

pH: 7.13 SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WM/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 11 QC Code: Matrix: Water Tag ID: 5187-11-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-106A
External Sample Number: MW-106A
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 09:20
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.844	umhos/cm
Dissolved Oxygen :	7.94	mg/L
Temperature :	10.00	Deg C
Turbidity :	0.0	NTU
pH :	7.11	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WJ/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 12 QC Code: Matrix: Water Tag ID: 5187-12-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-106D

External Sample Number: MW-106D

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/16/10 11:35
Longitude: End: 1/1/11

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.383	umhos/cm
Dissolved Oxygen :	5.70	mg/L
Temperature :	9.80	Deg C
Turbidity :	0.0	NTU
pH :	7.31	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By:

WM/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 43 QC Code: FB Matrix: Water Tag ID: 5187-43-FB

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: LDL VOA Trip Blank sample

External Sample Number: TripBlank

Expected Conc: (or Circle One: ☒ Low ☐ Medium ☐ High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/15/10 13:10

Longitude: _____

End: __/__/__ :__

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: HGL

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 13 QC Code: Matrix: Water Tag ID: 5187-13-

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc:

MW-106C

External Sample Number:

MW-106C

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/15/10

13:35

Longitude:

End: 1/1/

:

Field Measurement

Parameter

Value

Units

Conductance, Specific: 0.564 umhos/cm

Dissolved Oxygen: 6.92 mg/L

Temperature: 12.33 Deg C

Turbidity: 0.0 NTU

pH: 7.04 SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By:

WM/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 14 QC Code: Matrix: Water Tag ID: 5187-14-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-45C
External Sample Number: MW-45C
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/15/10 15:10
Longitude: End: 1/1/15

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.693	umhos/cm
Dissolved Oxygen:	9.07	mg/L
Temperature:	11.07	Deg C
Turbidity:	25.0	NTU
pH:	7.33	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: Wm/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: ¹⁴15 QC Code: ^{WMM}FD Matrix: Water Tag ID: ¹⁴5187-15

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc: ^{WMM}12/15/10 Duplicate of 5187-14

External Sample Number: Duplicate of 518714

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/15/10 15:10

Longitude: _____

End: 1/1/10

Field Measurement

Parameter

Value

Units

Conductance, Specific: 0.693 umhos/cm

Dissolved Oxygen: 9.07 mg/L

Temperature: 11.07 Deg C

Turbidity: 25.0 NTU

pH: 7.33 SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: 

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 16 QC Code: Matrix: Water Tag ID: 5187-16-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-45D

External Sample Number: MW-45D

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/16/10 17:00

Longitude:

End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.562	umhos/cm
Dissolved Oxygen:	4.21	mg/L
Temperature:	9.68	Deg C
Turbidity:	0.5	NTU
pH:	7.39	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: 

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 17 QC Code: Matrix: Water Tag ID: 5187-17-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: Rinstate
External Sample Number: Rinstate
Expected Conc: (or Circle One: ☒ Low ☐ Medium ☐ High) Date 12/16/10 Time(24 hr) 17:25
Latitude: Sample Collection: Start: 12/16/10 End: 17:25
Longitude: End: 17:25

Field Measurement

Parameter	Value	Units
Conductance, Specific :		umhos/cm
Dissolved Oxygen :		mg/L
Temperature :		Deg C
Turbidity :		NTU
pH :		SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: Wm/5N

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 18 QC Code: ____ Matrix: Water Tag ID: 5187-18-__

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-12C
External Sample Number: MW-12C
Expected Conc: (or Circle One: Low Medium High) Date: 12/17/10 Time(24 hr): 09:35
Latitude: ____ Sample Collection: Start: 12/17/10 End: 12/17/10
Longitude: ____ End: 12/17/10

Field Measurement

Parameter	Value	Units
Conductance, Specific:	<u>0.781</u>	umhos/cm
Dissolved Oxygen:	<u>6.72</u>	mg/L
Temperature:	<u>9.22</u>	Deg C
Turbidity:	<u>0.0</u>	NTU
pH:	<u>6.82</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WM/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 18 QC Code: ED Matrix: Water Tag ID: 5187-18

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: Duplicate of 5187-18

External Sample Number: _____

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: _____ Sample Collection: Start: 12/17/10 09:35
Longitude: _____ End: 1/1/ :

Field Measurement

Parameter	Value	Units
Conductance, Specific:	<u>0.781</u>	umhos/cm
Dissolved Oxygen:	<u>6.72</u>	mg/L
Temperature:	<u>9.22</u>	Deg C
Turbidity:	<u>0.0</u>	NTU
pH:	<u>6.82</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WM/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 20 QC Code: Matrix: Water Tag ID: 5187-20-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-12A

External Sample Number: MW-12A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/17/10 11:00

Longitude:

End: / / :

Field Measurement

Parameter

Value

Units

Conductance, Specific: 1.15 umhos/cm

Dissolved Oxygen: 4.88 mg/L

Temperature: 10.31 Deg C

Turbidity: 0.0 NTU

pH: 7.29 SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WM/JN

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 21 QC Code: ___ Matrix: Water Tag ID: 5187-21-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-12DExternal Sample Number: MW-12D

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/17/1012:05

Longitude: _____

End: 1/1/11

:_____

Field Measurement

Parameter

(WM) 12/17/10
Value
Conductance, Specific: 0.788 0.539 umhos/cm
Dissolved Oxygen: 3.49 mg/L
Temperature: 11.16 Deg C
Turbidity: 0.0 NTU
pH: 6.99 SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WM/JN

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 22 QC Code: Matrix: Water Tag ID: 5187-22-__

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-105 D

External Sample Number: MW-105 D

Expected Conc: (or Circle One: Low Medium High) Date Time (24 hr)
Latitude: Sample Collection: Start: 12/17/10 12:55 14:00
Longitude: End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.465</u>	umhos/cm
Dissolved Oxygen :	<u>4.59</u>	mg/L
Temperature :	<u>10.71</u>	Deg C
Turbidity :	<u>0.0</u>	NTU
pH :	<u>7.16</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WM/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187

Sample Number: ²²28QC Code: ^{Wm}ED

Matrix: Water

Tag ID: 5187-²²28

Project ID: BZA72Z02

Project Manager: Brian Zurbuchen

Project Desc: Garvey Elevator - RI/FS sampling

City: Hastings

State: Nebraska

Program: Superfund

Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER

Site ID: A72Z Site OU: 02

Location Desc:

MW/105-D

External Sample Number:

MW-105 D

Expected Conc:

(or Circle One: Low Medium High)

Date

Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/17/10

14:00

Longitude: _____

End: 1/1/11

: _

Field Measurement

Parameter

Value

Units

Conductance, Specific: 0.465 umhos/cm

Dissolved Oxygen: 4.59 mg/L

Temperature: 10.71 Deg C

Turbidity: 0.0 NTU

pH: 7.16 SU

Laboratory Analyses:

Container

Preservative

Holding Time

Analysis

4 - 40mL VOA vial

4 Deg C, HCL to pH<2

14 Days

1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By:

Wm

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 24 QC Code: Matrix: Water Tag ID: 5187-24-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-105C

External Sample Number: MW-105C

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/17/10 16:30

Longitude:

End: 1/1/11

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.803	umhos/cm
Dissolved Oxygen:	6.06	mg/L
Temperature:	10.19	Deg C
Turbidity:	0.0	NTU
pH:	6.88	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WM/JSN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 25 QC Code: Matrix: Water Tag ID: 5187-25-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-105A

External Sample Number: MW-105A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/18/10

09:55

Longitude:

End: 1/1/

:-

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.879	umhos/cm
Dissolved Oxygen:	6.24	mg/L
Temperature:	9.96	Deg C
Turbidity:	2.2	NTU
pH:	7.08	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: Wm/JN

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 26 QC Code: ____ Matrix: Water Tag ID: 5187-26-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-46D2
External Sample Number: MW-46D2
Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: ____ **Sample Collection: Start:** 12/18/10 11:35
Longitude: ____ **End:** 1/1/11 12:00

Field Measurement

Parameter	Value	Units
Conductance, Specific:	<u>0.503</u>	umhos/cm
Dissolved Oxygen:	<u>5.79</u>	mg/L
Temperature:	<u>9.60</u>	Deg C
Turbidity:	<u>12.5</u>	NTU
pH:	<u>7.28</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: nm/sn

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 27 QC Code: ___ Matrix: Water Tag ID: 5187-27-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-46D1

External Sample Number: MW-46D1

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/18/10

14:15

Longitude: _____

End: ___/___/___

___:___

Field Measurement

Parameter

Value

Units

Conductance, Specific: 0.627 umhos/cm

Dissolved Oxygen: 1.82 mg/L

Temperature: 12.93 Deg C

Turbidity: 49.1 NTU

pH: 7.11 SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WM/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 28 QC Code: Matrix: Water Tag ID: 5187-28-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc:

MW-14A

External Sample Number:

MW-14A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/18/10

17:05

Longitude:

End: 1/1/

:-

Field Measurement

Parameter

Value

Units

Conductance, Specific: 0.909 umhos/cm
Dissolved Oxygen: 4.97 mg/L
Temperature: 5.72 Deg C
Turbidity: 0.0 NTU
pH: 6.82 SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By:

WM/JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 29 QC Code: __ Matrix: Water Tag ID: 5187-29-__

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-104DExternal Sample Number: MW-104D

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/19/10 08:50

Longitude: _____

End: 1/1/11 12:00

Field Measurement

Parameter	Value	Units
Conductance, Specific:	<u>0.347</u>	umhos/cm
Dissolved Oxygen:	<u>4.02</u>	mg/L
Temperature:	<u>8.67</u>	Deg C
Turbidity:	<u>0.0</u>	NTU
pH:	<u>6.46</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: [Signature]

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 30 QC Code: Matrix: Water Tag ID: 5187-30-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-104 C
External Sample Number: MW-104 C
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/19/00 10:35
Longitude: End: : : :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.435	umhos/cm
Dissolved Oxygen :	2.82	mg/L
Temperature :	11.55	Deg C
Turbidity :	0.0	NTU
pH :	2.09	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs In Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: WJF

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KSASR Number: 5187 Sample Number: ³⁰31 QC Code: FD Matrix: Water Tag ID: 5187-³⁰31-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: Duplicate of 5187-30External Sample Number: mw-104C

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: 12/19/10 10:25Longitude: End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific:	<u>0.735</u>	umhos/cm
Dissolved Oxygen:	<u>2.82</u>	mg/L
Temperature:	<u>11.55</u>	Deg C
Turbidity:	<u>0.0</u>	NTU
pH:	<u>7.09</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: wm / JN

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 32 QC Code: ____ Matrix: Water Tag ID: 5187-32-__

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-104 A
External Sample Number: MW-104 A
Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: ____ Sample Collection: Start: 12/19/10 11:40
Longitude: ____ End: 1/1/11 ____

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.876</u>	umhos/cm
Dissolved Oxygen :	<u>6.39</u>	mg/L
Temperature :	<u>11.38</u>	Deg C
Turbidity :	<u>0.0</u>	NTU
pH :	<u>6.87</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Extra Vol for MS/MSD

Sample Collected By: Wm JN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 33 QC Code: Matrix: Water Tag ID: 5187-33-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc:

MW-41D1

External Sample Number:

MW-41D1

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude:

Sample Collection: Start: 12/19/10

13:35

Longitude:

End: / /

: :

Field Measurement

Parameter

Value

Units

Conductance, Specific: 0.713 umhos/cm
Dissolved Oxygen: 7.00 mg/L
Temperature: 9.79 Deg C
Turbidity: 12.7 NTU
pH: 6.89 SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs In Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By:

WMTN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 34 QC Code: Matrix: Water Tag ID: 5187-34-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-41 D2

External Sample Number: MW-41 D2

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/19/10 5:15
Longitude: End: :/ / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.371	umhos/cm
Dissolved Oxygen :	2.99	mg/L
Temperature :	9.43	Deg C
Turbidity :	18.4	NTU
pH :	7.08	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: Wm J. N.

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 35 QC Code: ___ Matrix: Water Tag ID: 5187-35-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-11AExternal Sample Number: MW-11A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: _____

Sample Collection: Start: 12/19/10 17:10

Longitude: _____

End: 1/1/ ::

Field Measurement

Parameter	Value	Units
Conductance, Specific:	<u>0.729</u>	umhos/cm
Dissolved Oxygen:	<u>5.03</u>	mg/L
Temperature:	<u>11.31</u>	Deg C
Turbidity:	<u>0.0</u>	NTU
pH:	<u>6.80</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Extra Vol MS/MSD

Sample Collected By: WM/JN

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5187 **Sample Number:** 36 **QC Code:** ____ **Matrix:** Water **Tag ID:** 5187-36-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-16C

External Sample Number: MW-16C

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**

Latitude: ____

Sample Collection: Start: 12/20/10

09:00

Longitude: ____

End: ____

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.864</u>	<u>µS/cm</u>
Dissolved Oxygen :	<u>5.68</u>	<u>mg/L</u>
Temperature :	<u>9.20</u>	Deg C
Turbidity :	<u>0.0</u>	NTU
pH :	<u>6.74</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
ORP = 182 mV

MS/MSD Analysis

Sample Collected By: AF/JG

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5187 **Sample Number:** 37 **QC Code:** **Matrix:** Water **Tag ID:** 5187-37-__

Project ID: BZA72Z02 **Project Manager:** Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings **State:** Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER **Site ID:** A72Z **Site OU:** 02

Location Desc: MW-16A

External Sample Number: MW-16A

Expected Conc: (or Circle One: Low Medium High) **Date** **Time(24 hr)**
Latitude: **Sample Collection: Start:** 12/20/10 10:07
Longitude: **End:** 1/1/ :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>1.02</u>	$\mu\text{mhos/cm}$ ^{DS}
Dissolved Oxygen :	<u>7.90</u>	mg/L ^{AF}
Temperature :	<u>9.12</u>	Deg C
Turbidity :	<u>0.0</u>	NTU
pH :	<u>6.89</u>	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = BW
method = Low flow
ORP = 182 mV

Sample Collected By: AF/JG

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 38 QC Code: Matrix: Water Tag ID: 5187-38-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-43 E

External Sample Number: MW-43 E

Expected Conc: (or Circle One: Low Medium High) Date 12/20/10 Time(24 hr) 09:25
Latitude: Sample Collection: Start: 12/20/10 End: 09:25
Longitude: End: 09:25

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.419	umhos/cm
Dissolved Oxygen :	8.49	mg/L
Temperature :	7.17	Deg C
Turbidity :	5.6	NTU
pH :	7.19	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: Wm/TN

Sample Collection Field Sheet

US EPA Region 7

Kansas City, KS

ASR Number: 5187 Sample Number: 39 QC Code: Matrix: Water Tag ID: 5187-39-

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-43 D

External Sample Number: MW-43 D

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)

Latitude: Sample Collection: Start: 12/20/19 10:35
Longitude: End: 1/1/

Field Measurement

Parameter	Value	Units
Conductance, Specific:	0.585	umhos/cm
Dissolved Oxygen:	7.00	mg/L
Temperature:	6.40	Deg C
Turbidity:	5.1	NTU
pH:	7.2	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

Sample Collected By: Wm/JN

Sample Collection Field Sheet
US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 41 QC Code: Matrix: Water Tag ID: 5187-41-__

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-10B

External Sample Number: MW-10B

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: Sample Collection: Start: 12/19/10 15:15
Longitude: End: / / :

Field Measurement

Parameter	Value	Units
Conductance, Specific :	<u>0.827</u>	<u>umhos/cm</u>
Dissolved Oxygen :	<u>7.15</u>	<u>mg/L</u>
Temperature :	<u>10.59</u>	<u>Deg C</u>
Turbidity :	<u>0.0</u>	<u>NTU</u>
pH :	<u>7.12</u>	<u>SU</u>

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = low flow
ORP = 155 mV

Sample Collected By: AR/JG

Sample Collection Field Sheet

US EPA Region 7
Kansas City, KS

ASR Number: 5187 Sample Number: 42 QC Code: ___ Matrix: Water Tag ID: 5187-42-___

Project ID: BZA72Z02 Project Manager: Brian Zurbuchen
Project Desc: Garvey Elevator - RI/FS sampling
City: Hastings State: Nebraska
Program: Superfund
Site Name: GARVEY ELEVATOR - OFF-SITE GROUNDWATER Site ID: A72Z Site OU: 02

Location Desc: MW-10A

External Sample Number: MW-10A

Expected Conc: (or Circle One: Low Medium High) Date Time(24 hr)
Latitude: ___ Sample Collection: Start: 12/19/10 16:37
Longitude: ___ End: ___/___/___ :___

Field Measurement

Parameter	Value	Units
Conductance, Specific :	0.947	$\mu\text{mhos}/\text{cm}$
Dissolved Oxygen :	7.23	mg/L ^{AP}
Temperature :	9.29	Deg C
Turbidity :	0.0	NTU
pH :	7.11	SU

Laboratory Analyses:

Container	Preservative	Holding Time	Analysis
4 - 40mL VOA vial	4 Deg C, HCL to pH<2	14 Days	1 VOCs in Water by GC/MS for Low Detection Limits

Sample Comments:

(N/A)

media = GW
method = Low flow
bcp = 158 mV

Sample Collected By:

AP/JG

MARCH 2011

WATER LEVEL DATA

72

Location Hastings, NE Date 12/20/10
 Project / Client Gannett Elevator / EPA R7

0750 Arrive at MW-16C and begin Setup.

0824 Begin purging MW-16C.

0833 Begin collecting parameters

0900 Sample 5187-36 collected from MW-16C. An MS/MSD sample was also collected. Final parameters are listed below:

temp: 9.20 pH: 6.74

cond: 0.864 DO: 5.68

ORP: 182 turb: 0.0

0925 Relocate to MW-16A.

0938 Begin purging MW-16A

~~0943~~ ^{12/20/10} Sample 5187-37 collected at MW-16A. Final parameters are listed below:

temp: 9.12 pH: 6.89

cond: 1.02 DO: 7.90

ORP: 182 turb: 0.0

note Begin collecting parameters at 0943.

1030 Work complete on this task.

ASL/tklee

12/20/10
12/20/10

73

Location Hastings, NE Date 3/22/11
 Project / Client Gannett Elevator / EPA R7

1506 Arrive at MW-31 to begin collecting water levels.
 Geokon Wells

Well	Date	Time	Digits	Temp
(1) 31C	3/22/11	1512	7638.1	12.5
(2) 31A	3/22/11	1514	8457.2	12.2
(1) 30E	3/22/11	1520	7276.1	12.6
(2) 30D	3/22/11	1521	6673.9	12.5
(3) 30C	3/22/11	1523	7592.3	12.3
(4) 30A	3/22/11	1524	8442.3	12.3
(1) 20E	3/22/11	1529	7276.7	12.5
(2) 20D	3/22/11	1530	6863.0	12.8
(3) 20C	3/22/11	1532	7728.6	12.2
(4) 20A	3/22/11	1533	8088.9	12.1
(1) 19C	3/22/11	1539	7775.4	12.4
(2) 19A	3/22/11	1540	8484.3	12.3

Well	Date	Time	DTW BTOC
7A	3/22/11	1551	107.85
7B	3/22/11	1555	108.46
8A	3/22/11	1603	125.71
2A	3/22/11	1610	115.11
6E	3/22/11	1616	119.66
6A	3/22/11	1617	117.70

74

Location Hastings, NE Date 3/22/11
 Project / Client Garvey Elevator / EPA R7

Well	Date	Time	DTW B TO C
6D	3/22/11	1620	118.73
1A	3/22/11	1629	111.84
3E	3/22/11	1635	119.00
3A	3/22/11	1637	120.85
3B	3/22/11	1640	119.82
3D	3/22/11	1644	120.10
5A	3/22/11	1650	117.03
5B	3/22/11	1653	118.13
5D	3/22/11	1656	118.36
13C	3/22/11	1701	117.75
13E	3/22/11	1704	117.62
9A	3/22/11	1653	110.96
4A	3/22/11	1705	118.44
4B	3/22/11	1703	118.29

1715 Depart site for day.

at 6:15 pm

75

Location Hastings, NE Date 3/23/11
 Project / Client Garvey Elevator / EPA R7

0830 Arrive at MW-31 and begin setup. Team is Fletcher + Zeller (LPM)
 0940 Begin purging. Flow cell is leaking so must take apart and reassemble.

0945 After adjusting flow rate to reduce sputtering experienced previously, begin purging again
 0957 Flow cell begins leaking again when adjustments to increase water flow are tried. Flow cell reassembled again and begin purging.

1002 Begin collecting parameters. Flow cell is still leaking but flow rate is maintained at 100/ml per minute.

1038 Sample 5282-1 collected from MW-31C. Final parameters are listed below:

temp: 10.65 pH: 6.79
 cond: 0.525 DO: 8.50
 ORP: 54 turb: 0.0

Fletcher 3/23/11

22

Location

Hastings, NE

Date

03/22/11

97.17

Project / Client

Garvey Grain Elevator

70°F Sunny / Windy

Author: Bo Moreland

Team 1: Bo Moreland & Steve Allen

Team 2: Adam Fletcher & Lee Zetter (Cory)

Equipment: See Page 25

(W/M)

(W/M)

(W/M)

(W/M)

Activities: Water levels & set up for
Sampling tomorrow.

1330 Arrive onsite. Speak

w/ Jeff Galt & Ad get started.

1345 Gather paper work & unbox
extra equipment & coolers.1400 Start water levels. See
details on page 23 & 24.

1730 Done for day.

W/M

3/22/11

23

Location

Hastings, NE

Date

3/22/11

Project / Client

Garvey Grain Elevator

Windy. 70°F 45V

Date	ID	Time	DTW	Comments
3/22/11	17C	1400	93.4	—
	17D	1402	93.39	—
	17A	1404	93.89	—
	44E	1432	109.76	—
	44D	1432	109.74	—
	43E	1444	125.49	—
	43D	1445	125.56	—
	106D	1451	122.63	—
	106C	1453	122.59	—
	106A	1455	119.94	—
	42E	1458	120.97	—
	42D	1500	120.85	—
	18D	1516	108.88	—
	18A	1518	106.86	—
	18C	1519	108.64	—
	104D	1535	106.83	—
	104C	1537	106.90	—
	104A	1538	104.41	—
	105A	1545	119.14	—
	105C	1546	120.87	—
	105D	1548	120.65	—
	46D2	1553	114.41	—
	46D1	1555	114.23	—

(W/M)

Location: Hastings, NE Date: 3/22/11
 Project / Client: Garvey Grain elevator
 Windy 25-30 mph

date	ID	Time	DTW	Comments
3/22/11	4102	1601	119.29	—
3/22/11	4101	1602	119.53	—
3/22/11	16A	1607	108.22	—
3/22/11	16C	1609	108.45	—
	45C	1617	102.86	—
	45D	1619	102.53	—
	12D	112.09	1623	—
	12A	112.82	1624	—
	12C	113.87	1626	—
	14A	101.23	1629	—
	11A	98.61	1637	—
	10A	108.39	1643	—
	10B	110.24	1645	—
	9A	110.96	1653	—
	4B	118.29	1703	—
	9A	118.44	1705	—

WJF
 3/22/11

Location: Hastings, NE Date: 3/23/11
 Project / Client: Garvey Grain Elevator
 50F 23°FV Windy 25-30mph overcast

Author: Bo Moreland
 Team 1: Bo Moreland, Steve Allan
 Team 2: Andrea Fletcher & Lee Zetter (CDM)
 Equipment: Water level SN: 632312
 Horiba U52 SN: 457668X controller SN: 5
 SP bladder pump SN: 10650 U19471X

Activities: Start sampling at MW-7, & then continue with other off site wells.

0700 arrive at Garvey office to set up equipment & calibrate equipment.
 0730 Both Horiba's are giving errors while calibrating for turbidity. Call

Field & they show us how to reset the system. This fixed the issue.

0815 Get ice & go to get tubing.

0845 Arrive at MW-17.

0900 Start pumping MW-17C.

1015 Had to stop & re-calibrate the Horiba.

1020 Take next readings. The numbers are normal.

1035 collect sample [5281-1] 4X40ML
 VOA's w/HCl for LD45.

PURGE SHEETS

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11Well ID: MW-1AInitial Static Water Level (feet btoc): 111.84

Final Water Level (feet btoc): _____

Purge Start Time: 1206Sample Time: 1237Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-20Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1211	111.87	11.42	7.68	0.499	13.22	111	47.6	100 ¹² 150	
1214	111.89	10.89	7.40	0.527	9.53	119	61.3	100 ¹² 150	
1217	111.89	10.97	7.05	0.538	8.82	120	50.9	150	
1220	111.89	11.16	6.87	0.543	9.08	122	50.5	150	
1223	111.92	11.19	6.81	0.545	8.79	123	43.3	150	
1226	111.89	11.14	6.78	0.546	8.72	124	45.0	150	
1229	111.89	11.31	6.75	0.546	8.86	125	30.2	150	
1232	111.89	11.30	6.73	0.546	8.84	127	28.2	150	
1235	111.89	11.10	6.72	0.547	8.75	128	29.3	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11Well ID: MW-2AInitial Static Water Level (feet btoc): 115.11Final Water Level (feet btoc): 115.31Purge Start Time: 0945Sample Time: 1020Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-19Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
950	115.30	7.76	6.68	0.483	13.53	127	0.0	100	
953	115.32	7.73	6.81	0.489	9.97	136	0.0	100	
956	115.33	8.74	6.56	0.495	9.28	136	0.0	100	
959	115.30	9.03	6.51	0.498	8.95	136	0.0	100	
1002	115.30	9.31	6.49	0.500	8.46	135	0.0	100	
1005	115.30	9.39	6.48	0.502	8.26	135	0.0	100	
1008	115.31	9.55	6.48	0.503	8.34	135	0.0	100	
1011	115.30	9.60	6.48	0.503	8.48	136	0.0	100	
1014	115.31	9.67	6.48	0.504	8.30	136	0.0	100	
1017	115.31	9.63	6.48	0.504	8.39	136	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-3AInitial Static Water Level (feet btoc): 120.85Final Water Level (feet btoc): 121.12Purge Start Time: 0902Sample Time: 0926Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-32Controller Settings: Recharge: 19 secs Discharge: 11 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
904	121.11	5.76	7.95	0.513	11.64	151	0.0	125	
907	121.11	5.46	7.42	0.564	10.85	162	0.0	125	
910	121.12	5.41	6.93	0.583	10.43	163	0.0	125	
913	121.09	5.40	6.79	0.589	9.97	161	0.0	125	
916	121.11	5.39	6.75	0.591	10.02	160	0.0	125	
919	121.11	5.43	6.73	0.597	9.81	159	0.0	125	
922	121.12	5.47	6.75	0.603	9.79	157	0.0	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-3BInitial Static Water Level (feet btoc): 119.82Final Water Level (feet btoc): 119.87Purge Start Time: 0755Sample Time: 0832Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-31Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
802	119.77	9.13	6.31	0.562	8.95	194	0.0	125	
805	119.82	9.75	6.57	0.599	7.70	185	0.0	125	
808	119.82	10.01	6.63	0.617	6.00	178	0.0	125	
811	119.85	10.12	6.67	0.633	5.55	174	0.0	125	
814	119.88	10.20	6.67	0.641	8.61	173	0.0	125	
817	119.86	10.13	6.68	0.644	2.97	168	0.0	125	
820	119.86	10.06	6.67	0.647	3.21	164	0.0	125	
823	119.90	10.01	6.66	0.650	3.50	162	0.0	125	
826	119.86	10.01	6.65	0.646	3.63	159	0.0	125	
829	119.87	9.99	6.66	0.646	3.64	158	0.0	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-3DInitial Static Water Level (feet btoc): 120.10

Final Water Level (feet btoc): _____

Purge Start Time: 1056Sample Time: 1126Samplers= Signatures: LZ/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-34Controller Settings: Recharge: 14 secs Discharge: 16 secs Pressure: 100 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1059	119.42	5.07	7.88	0.318	14.24	61	0.0	200	
1102	119.42	7.91	7.21	0.433	9.90	77	0.0	200	
1105	119.45	8.99	6.93	0.464	9.12	78	0.0	200	
1108	119.45	9.29	6.87	0.473	8.94	80	0.0	200	
1111	119.45	9.72	6.85	0.476	8.53	82	0.0	200	
1114	119.45	9.85	6.84	0.477	8.61	85	0.0	200	
1117	119.45	9.87	6.82	0.476	8.65	87	0.0	200	
1120	119.45	9.90	6.83	0.475	8.64	88	0.0	200	
1123	119.45	9.92	6.83	0.473	8.62	90	0.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-3EInitial Static Water Level (feet btoc): 119.80Final Water Level (feet btoc): 118.33Purge Start Time: 0950Sample Time: 1026Samplers= Signatures: LZ/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-33Controller Settings: Recharge: 9 secs Discharge: 21 secs Pressure: 115 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
954	118.33	5.39	7.50	0.328	16.62	85	0.0	200	
957	118.33	6.67	7.22	0.418	13.68	-32	0.0	200	
1000	118.33	7.14	7.42	0.462	13.22	-31	0.0	200	
1003	118.33	7.52	7.50	0.468	13.14	-21	0.0	200	
1006	118.33	7.76	7.57	0.473	13.07	0	0.0	200	
1012	118.33	7.30	7.62	0.464	12.73	16	0.0	200	Nitrogen gas tank changed out to maintain adequate pressure
1015	118.33	7.90	7.60	0.473	13.01	20	0.0	200	
1018	118.37	8.07	7.63	0.476	13.67	29	0.0	200	
1021	118.33	8.19	7.64	0.478	13.11	34	0.0	200	
1024	118.33	8.17	7.64	0.479	13.18	37	0.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-4APurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 118.29Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: _____

Purge Start Time: 1357Sample Number: 5282-38Sample Time: 1442Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 75 psiSamplers= Signatures: LZ/AFCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1400	118.59	6.57	7.99	0.543	5.77	93	0.0	125	
1403	118.60	7.24	7.42	0.572	3.34	102	0.0	125	
1406	118.60	7.59	7.12	0.587	3.69	104	0.0	125	
1409	118.60	8.38	7.02	0.596	5.65	104	0.0	125	
1412	118.60	8.61	6.98	0.601	3.35	105	0.0	125	
1415	118.60	8.80	6.98	0.601	3.50	105	0.0	125	
1418	118.61	8.74	6.97	0.604	5.96	106	0.0	125	
1421	118.60	8.77	6.97	0.605	3.37	107	0.0	125	
1424	118.60	8.89	6.97	0.606	7.59	107	0.0	125	
1427	118.60	9.00	6.96	0.607	6.64	107	0.0	125	
1430	118.60	9.00	6.97	0.607	3.69	108	0.0	125	
1433	118.60	9.03	6.97	0.608	4.57	108	0.0	125	
1436	118.60	9.07	6.97	0.609	4.62	109	0.0	125	
1439	118.60	9.08	6.96	0.609	4.51	109	0.0	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-2011Well ID: MW-4BInitial Static Water Level (feet btoc): 118.29

Final Water Level (feet btoc): _____

Purge Start Time: 1252Sample Time: 1329Samplers= Signatures: LZ/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: DUPLICATESample Number: 5282-36 / 5282-36 FDController Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1257	118.50	8.16	7.08	0.526	11.69	97	0.0	200	
1300	118.46	9.57	6.94	0.589	11.47	98	5.7	200	
1303	118.55	10.23	6.91	0.605	11.51	99	70.8	200	
1306	118.46	10.40	6.90	0.613	11.34	100	101	200	
1309	118.49	10.51	6.90	0.618	11.46	102	61.1	200	
1312	118.49	10.53	6.89	0.621	11.73	102	66.4	200	
1315	118.49	10.65	6.90	0.623	11.37	104	33.3	200	
1318	118.49	10.60	6.88	0.624	11.44	105	12.7	200	
1321	118.49	10.72	6.89	0.625	12.00	106	0.0	200	
1324	118.50	10.64	6.89	0.624	11.74	106	0.0	200	
1327	118.50	10.71	6.90	0.624	11.79	107	0.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11Well ID: MW-5AInitial Static Water Level (feet btoc): 117.03

Final Water Level (feet btoc): _____

Purge Start Time: 1333Sample Time: 1356Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-21Controller Settings: Recharge: 10 secs Discharge: 8 secs Pressure: 80 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1336	118.32	9.84	7.49	0.436	12.18	104	21.4	200	
1339	118.32	10.19	7.05	0.557	10.23	114	15.7	200	
1342	118.32	10.55	6.91	0.590	9.83	117	13.3	200	
1345	118.32	10.58	6.89	0.595	9.86	118	10.5	200	
1348	118.32	10.54	6.87	0.598	9.65	120	7.3	200	
1351	118.32	10.51	6.87	0.598	9.82	121	5.4	200	
1354	118.32	10.50	6.86	0.601	9.69	122	3.9	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	+ 1° C	DO / Turbidity	+ 10 %
pH	+ 0.1 pH unit	ORP	+ 10 mV
Conductivity	+ 3 %	Water Level	+ 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11Well ID: MW-5BInitial Static Water Level (feet btoc): 118.13Final Water Level (feet btoc): 118.16Purge Start Time: 1426Sample Time: 1500Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: DUPLICATESample Number: 5282-22 5282-22 FDController Settings: Recharge: 16 secs Discharge: 14 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1431	118.16	8.47	7.24	0.465	11.69	123	0.0	150	
1434	118.16	9.45	6.87	0.518	10.00	125	0.0	150	
1437	118.16	9.79	6.78	0.563	10.09	125	0.0	150	
1440	118.16	9.14	6.78	0.576	10.19	126	0.0	150	
1443	118.16	10.36	6.78	0.585	9.17	125	0.0	150	
1446	118.16	10.39	6.79	0.594	9.19	125	0.0	150	
1449	118.17	10.47	6.80	0.598	9.13	126	0.0	150	
1452	118.16	10.35	6.79	0.602	9.15	126	0.0	150	
1455	118.16	10.32	6.81	0.605	9.01	125	0.0	150	
1458	118.16	10.36	6.82	0.608	9.04	126	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11

Well ID: MW-5D

Initial Static Water Level (feet btoc): 118.36

Final Water Level (feet btoc): 118.02

Purge Start Time: 1540

Sample Time: 1612

Samplers= Signatures: LZ/AF

OVM: FID g PID g In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphere

Purging/Sampling Device: QED Bladder Pump/compressed nitrogen

Analytical Parameters: LDL VOCs

QC Samples Collected:

Sample Number: 5282-24

Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 90 psi

Cycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1547	118.02	6.67	7.05	0.351	13.11	108	0.0	180	
1550	118.02	7.51	7.96	0.363	12.99	108	0.0	180	
1553	118.02	8.38	7.32	0.380	11.30	117	0.0	180	
1556	118.02	8.88	7.01	0.384	10.53	119	0.0	180	
1559	118.00	9.10	6.91	0.385	10.21	120	0.0	180	
1602	118.00	9.69	6.88	0.387	9.68	121	0.0	180	
1605	118.03	9.71	6.87	0.386	9.58	122	0.0	180	
1608	118.02	9.71	6.87	0.386	9.52	123	0.2	180	
1611	118.02	9.79	6.87	0.385	9.73	123	1.8	180	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-6AInitial Static Water Level (feet btoc): 117.70Final Water Level (feet btoc): 117.82Purge Start Time: 1507Sample Time: 1548Samplers= Signatures: LZ / AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-29Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1513	117.81	6.27	7.05	0.502	9.64	130	4.7	100	
1516	117.85	7.05	6.82	0.579	8.44	127	1.8	125	
1519	117.82	7.45	6.79	0.588	8.03	124	0.6	125	
1522	117.82	7.88	6.79	0.593	7.95	124	2.4	125	
1525	117.82	7.95	6.78	0.597	7.79	123	4.7	125	
1528	117.82	8.23	6.78	0.600	7.95	123	2.2	125	
1531	117.82	8.40	6.79	0.600	7.56	123	4.2	125	
1534	117.82	8.75	6.79	0.601	7.16	122	3.5	125	
1537	117.82	8.58	6.79	0.601	7.11	123	2.8	125	
1540	117.82	8.50	6.79	0.598	7.25	124	1.5	125	
1543	117.82	8.62	6.79	0.599	7.14	124	1.2	125	
1546	117.82	8.54	6.79	0.601	7.13	124	0.1	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-6DInitial Static Water Level (feet btoc): 118.73Final Water Level (feet btoc): 117.86Purge Start Time: 1356Sample Time: 1437Samplers= Signatures: LZ / AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: -Sample Number: 5282-28Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1402	117.88	7.33	7.89	0.319	12.66	114	0.1	100	
1405	117.88	8.08	7.18	0.363	9.70	118	5.2	100	
1408	117.86	8.57	7.00	0.369	9.19	118	2.7	100	
1411	117.88	8.71	6.94	0.372	8.91	118	1.9	100	
1414	117.88	8.91	6.91	0.373	8.51	119	4.4	100	
1417	117.86	9.03	6.89	0.375	8.63	119	5.4	100	
1420	117.86	9.04	6.88	0.377	8.47	119	6.0	100	
1423	117.86	9.06	6.87	0.377	8.48	119	7.1	100	
1426	117.86	9.02	6.87	0.376	8.17	119	6.2	100	
1429	117.86	9.06	6.87	0.377	8.47	119	5.3	100	
1432	117.86	9.09	6.87	0.378	8.36	119	4.1	100	
1435	117.86	9.11	6.86	0.379	8.35	119	3.8	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-6EInitial Static Water Level (feet btoc): 119.66Final Water Level (feet btoc): 118.78Purge Start Time: 1416 1616Sample Time: 1641Samplers= Signatures: LZ / AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-30Controller Settings: Recharge: 15 secs Discharge: 16 secs Pressure: 115 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1621	118.79	7.75	8.20	0.204	11.01	100	0.0	200	
1624	118.78	8.56	7.72	0.217	11.17	106	0.0	200	
1627	118.78	8.91	7.40	0.218	10.84	108	0.0	200	
1630	118.78	9.03	7.25	0.219	10.34	108	0.0	200	
1633	118.78	9.10	7.20	0.219	9.88	108	0.0	200	
1636	118.78	9.06	7.17	0.219	9.50	109	0.0	200	
1639	118.78	9.00	7.15	0.219	9.05	108	0.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-24-11Well ID: MW-7AInitial Static Water Level (feet btoc): 107.90Final Water Level (feet btoc): 107.88Purge Start Time: 1438Sample Time: 1503Samplers= Signatures: LZ / AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-16Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1441	107.92	13.44	7.67	0.490	11.84	45	0.0	175	
1444	107.93	12.66	6.87	0.518	9.77	75	0.0	175	
1447	107.94	11.93	6.70	0.520	9.32	85	0.0	175	
1450	107.90	11.80	6.66	0.519	9.05	87	0.0	175	
1453	107.91	11.71	6.65	0.518	9.07	90	0.0	175	
1456	107.91	11.63	6.64	0.518	8.99	92	0.0	175	
1459	107.91	11.66	6.63	0.517	9.11	94	0.0	175	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-24-11Well ID: MW-7BInitial Static Water Level (feet btoc): 108.65Final Water Level (feet btoc): 108.63Purge Start Time: 1328Sample Time: 1409Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-15Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1348	108.65	10.19	6.10	0.520	10.89	35	0.0	125	
1351	108.63	10.43	6.07	0.523	9.58	90	0.0	125	
1354	108.63	10.76	6.43	0.530	3.45	79	0.0	125	
1357	108.63	10.93	6.64	0.532	2.30	68	0.0	125	
1400	108.63	11.19	6.77	0.534	1.84	59	0.0	125	
1403	108.63	11.43	6.80	0.536	1.88	58	0.0	125	
1406	108.63	11.69	6.79	0.536	1.78	59	0.0	125	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11Well ID: MW-8AInitial Static Water Level (feet btoc): 125.71Final Water Level (feet btoc): 125.72Purge Start Time: 0818Sample Time: 0848Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-18Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
825	125.73	11.06	6.00	0.826	9.55	171	0.0	100	
828	125.73	9.23	6.72	0.840	9.07	178	0.3	100	
831	125.72	9.49	6.76	0.842	9.53	174	0.0	100	
834	125.72	9.74	6.78	0.838	9.10	168	0.0	100	
837	125.72	9.70	6.80	0.838	9.31	162	0.0	100	
840	125.75	9.79	6.79	0.841	8.66	157	0.0	100	
843	125.72	9.82	6.79	0.843	8.99	154	0.0	100	
846	125.72	9.93	6.80	0.844	8.59	150	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-24-11Well ID: MW-9AInitial Static Water Level (feet btoc): 111.00

Final Water Level (feet btoc): _____

Purge Start Time: 1602 ^{9:38} 1726Sample Time: 1759Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 9282-17Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1730	110.96	9.69	7.24	0.351	11.12	78	6.0	150	
1733	110.97	9.40	6.73	0.400	10.39	98	3.9	150	
1736	111.02	9.60	6.65	0.499	10.17	106	0.0	150	
1739	110.96	10.07	6.65	0.540	10.09	108	0.0	150	
1742	110.96	10.18	6.68	0.570	9.93	108	0.0	150	
1745	110.96	10.18	6.72	0.576	9.58	109	0.0	150	
1748	110.98	10.20	6.72	0.569	9.16	110	0.0	150	
1751	110.97	10.22	6.72	0.578	8.91	111	0.0	150	
1754	110.97	10.21	6.71	0.570	8.96	112	0.0	150	
1757	110.97	10.25	6.72	0.574	8.99	113	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-10AInitial Static Water Level (feet btoc): 108.39Final Water Level (feet btoc): 108.58Purge Start Time: 1616Sample Time: 1648Samplers= Signatures: LZ/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: _____

Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1621	108.57	12.05	7.19	0.567	10.13	102	41.7	200	
1624	108.58	10.37	6.97	0.604	10.35	108	68.8	200	
1627	108.58	10.25	6.97	0.612	9.02	110	57.2	200	
1630	108.58	10.27	6.96	0.617	9.04	111	47.0	200	
1633	108.58	10.24	6.95	0.622	8.75	113	47.3	200	
1636	108.58	10.16	6.95	0.621	8.73	114	29.3	200	
1639	108.58	10.13	6.95	0.619	8.67	114	12.5	200	
1642	108.58	10.09	6.95	0.622	8.62	114	8.7	200	
1645	108.58	9.95	6.95	0.625	8.65	115	5.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-10BInitial Static Water Level (feet btoc): 110.24

Final Water Level (feet btoc): _____

Purge Start Time: 1519Sample Time: 1545Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: 5281-35AFSample Number: 5281-35Controller Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1524	109.78	9.43	7.34	0.506	11.73	96	0.0	200	
1527	109.75	10.03	7.04	0.559	9.61	104	0.0	200	
1530	109.77	10.43	6.96	0.576	9.11	106	0.0	200	
1533	109.75	10.52	6.94	0.582	9.49	107	0.0	200	
1536	109.75	10.58	6.93	0.584	9.48	108	0.0	200	
1539	109.75	10.53	6.94	0.584	9.30	109	0.0	200	
1542	109.75	10.55	6.93	0.586	9.32	111	0.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 2/25/11Well ID: MW-11AInitial Static Water Level (feet btoc): 98.61Final Water Level (feet btoc): 98.69Purge Start Time: 1615Sample Time: 1645Samplers= Signatures: WM/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: 5281-22Sample Number: Extra Vol for MS/MSDController Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 55 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1620	98.69	9.22	6.18	0.631	5.73	164	0.2	100	
1625	98.69	9.41	6.04	0.651	5.13	168	0.0	100	
1630	98.69	9.49	6.01	0.662	5.26	168	0.0	100	
1635	98.69	9.58	5.99	0.671	4.98	169	0.0	100	
1640	98.69	9.50	5.98	0.677	4.78	169	0.0	100	
1645	98.69	9.60	5.97	0.677	4.70	170	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-1ZAInitial Static Water Level (feet btoc): 112.82Final Water Level (feet btoc): 112.85Purge Start Time: 1305Sample Time: 1350Samplers= Signatures: JG/LWMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-38Controller Settings: Recharge: 20 secs Discharge: 18 secs Pressure: 65 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1311	112.85	6.78	6.22	0.831	9.06	129	0.7	100	
1311	112.85	6.98	6.25	0.636	9.19	129	0.7	100	
1314	112.85	7.42	6.24	0.831	9.60	130	1.4	100	
1318	112.85	7.62	6.18	0.955	8.33	130	0.6	100	
1324	112.85	7.85	6.18	0.972	7.92	129	0.0	100	
1329	112.85	8.02	6.19	0.977	7.80	128	0.0	100	
1334	112.85	7.97	6.19	0.984	7.82	128	0.0	100	
1345	112.85	8.05	6.19	0.987	7.60	128	0.0	100	
1348	112.85	8.09	6.18	0.987	7.80	128	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	+ 1° C	DO / Turbidity	+ 10 %
pH	+ 0.1 pH unit	ORP	+ 10 mV
Conductivity	+ 3 %	Water Level	+ 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-12CInitial Static Water Level (feet btoc): 113.87

Final Water Level (feet btoc): _____

Purge Start Time: 1217Sample Time: 1255Samplers= Signatures: JG/LWMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: MS/MSDSample Number: 5281-37Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1222	113.64	9.50	6.18	0.703	8.63	124	0.0	100	
1225	113.64	8.06	6.18	0.687	8.68	125	0.0	100	
1230	113.64	5.95	6.47	0.68	8.79	121	0.0	100	
1233	113.64	6.01	6.52	0.676	10.20	121	0.0	100	
1236	113.64	6.10	6.50	0.678	9.27	121	0.0	100	
1242	113.64	6.85	6.26	0.654	7.96	125	0.0	100	
1245	113.64	6.94	6.22	0.652	7.75	125	0.0	100	
1248	113.64	7.08	6.18	0.650	7.61	126	0.0	100	
1251	113.64	7.22	6.16	0.650	7.55	126	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: mw-12DInitial Static Water Level (feet btoc): 112.09

Final Water Level (feet btoc): _____

Purge Start Time: 1400Sample Time: 1435Samplers= Signatures: JG/WMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-39Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: _____ psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1408	112.79	7.40	6.28	0.70	6.06	123	7.7	100	
1411	112.79	7.57	6.29	0.609	5.81	122	9.7	100	
1415	112.79	7.61	6.25	0.550	5.98	122	9.4	100	
1418	112.79	7.75	6.24	0.526	6.06	122	9.1	100	
1423	112.79	7.92	6.21	0.502	6.05	123	8.3	100	
1426	112.79	8.08	6.20	0.496	6.05	124	7.1	100	
1429	112.79	8.12	6.20	0.494	6.02	124	7.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-13CInitial Static Water Level (feet btoc): 117.75

Final Water Level (feet btoc): _____

Purge Start Time: 1135Sample Time: 1205Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: DUPLICATESample Number: 5282-26/5282-26 PDController Settings: Recharge: 17 secs Discharge: 13 secs Pressure: 75 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1141	117.78	6.35	7.43	0.403	12.66	147	0.0	150	
1144	117.80	7.90	7.09	0.427	13.68	145	0.0	150	
1147	117.80	8.95	7.02	0.436	14.26	142	0.0	150	
1150	117.82	9.29	7.00	0.443	14.84	139	0.0	150	
1153	117.80	9.46	7.00	0.447	14.50	137	0.0	150	
1156	117.80	9.36	7.00	0.450	14.70	136	0.0	150	
1159	117.80	9.51	7.01	0.452	15.18	135	0.0	150	
1202	117.80	9.52	7.01	0.453	15.26	134	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-13EInitial Static Water Level (feet btoc): 117.62Final Water Level (feet btoc): 117.11Purge Start Time: 0958: restart at 1010Sample Time: 1049Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: MSMSDSample Number: 5282-25Controller Settings: Recharge: 12 secs Discharge: 18 secs Pressure: 110 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1016	117.13	9.42	5.87	0.366	13.51	223	0.0	100	
1019	117.13	6.98	7.00	0.354	12.78	199	0.0	100	
1022	117.11	7.70	7.76	0.350	10.01	196	9.0	100	
1025	117.11	8.13	7.48	0.356	7.60	192	11.4	100	
1028	117.11	8.27	7.30	0.356	7.83	183	3.0	100	
1031	117.11	8.27	7.22	0.358	7.07	186	10.4	100	
1034	117.11	8.33	7.18	0.357	6.13	185	7.6	100	
1037	117.11	8.43	7.16	0.358	5.87	179	5.9	100	
1040	117.11	8.44	7.15	0.360	5.56	173	5.2	100	
1043	117.11	8.39	7.15	0.360	5.61	169	4.6	100	
1046	117.11	8.35	7.14	0.360	5.54	166	4.5	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-14AInitial Static Water Level (feet btoc): 101.23Final Water Level (feet btoc): 101.35Purge Start Time: 1550Sample Time: 1625Samplers= Signatures: JG/WmOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5182-30Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1356	101.32	6.79	6.24	0.558	7.94	131	33.6	75	
1602	101.35	5.63	6.75	0.688	7.90	127	15.2	75	
1605	101.35	6.19	6.60	0.704	7.60	136	4.8	75	
1608	101.35	5.95	6.26	0.761	7.24	141	1.1	75	
1611	101.35	5.43	6.14	0.783	7.19	142	2.2	75	
1614	101.35	5.13	6.04	0.824	6.92	142	0.0	75	
1617	101.35	5.08	5.99	0.846	6.82	142	0.0	75	
1620	101.35	4.98	5.97	0.857	6.84	142	0.0	75	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/29/11Well ID: MW - 16AInitial Static Water Level (feet btoc): 108.40

Final Water Level (feet btoc): _____

Purge Start Time: 1100Sample Time: 1135Samplers= Signatures: SA / 3MOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-11Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1110	108.41	10.52	6.24	0.675	8.68	59	33.2	75	
1115	108.41	10.57	6.08	0.887	7.30	64	31.1	75	
1120	108.41	10.72	6.07	0.912	6.86	65	29.5	75	
1125	108.41	10.74	6.04	0.942	6.54	65	26.7	75	
1130	108.41	10.82	6.04	0.955	6.44	66	25.0	75	
1135	108.41	10.71	6.04	0.967	6.25	66	24.1	75	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	+ 1° C	DO / Turbidity	+ 10 %
pH	+ 0.1 pH unit	ORP	+ 10 mV
Conductivity	+ 3 %	Water Level	+ 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/24/11Well ID: MW-16CInitial Static Water Level (feet btoc): 108.56Final Water Level (feet btoc): 108.57Purge Start Time: 1155Sample Time: 1225Samplers= Signatures: SA / BMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: 5281-12 FDSample Number: 5281-12Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1205	108.59	10.27	6.09	0.866	6.55	75	1.9	100	
1210	108.57	10.53	6.08	0.840	6.87	72	0.0	100	
1215	108.57	10.64	6.02	0.835	6.44	69	0.0	100	
1220	108.57	10.50	5.98	0.834	6.44	69	0.0	100	
1225	108.57	10.47	5.97	0.833	6.45	69	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/22/11Well ID: MW 17AInitial Static Water Level (feet btoc): 94.10Final Water Level (feet btoc): 94.12Purge Start Time: 1135Sample Time: 1216Samplers= Signatures: SA / BMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-3Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 50 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1145	94.12	11.74	6.30	0.614	8.50	144	0.0	94.12 80ml	
1150	94.12	12.20	6.27	0.648	8.45	148	0.0	80ml	
1155	94.12	12.27	6.25	0.660	8.32	151	0.0	80ml	
1200	94.12	12.75	6.25	0.674	8.42	154	0.0	80	
1205	94.12	12.71	6.26	0.682	8.14	154	0.0	80	
1210	94.12	12.59	6.24	0.687	8.16	158	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/23/11OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW 17CPurging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 93.64Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 93.65QC Samples Collected: NonePurge Start Time: 0905Sample Number: 5281-1Sample Time: 1035Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 75 psiSamplers= Signatures: SA / BMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0915	93.65	12.95	4.66	0.002	14.36	185	77.8	100	
0920	93.65	12.51	4.60	0.002	14.33	194	79.9	100	
0925	93.65	12.85	4.64	0.002	13.23	198	89.9	100	
0930	93.65	12.81	4.62	0.002	13.76	201	85.2	100	
0935	93.65	12.61	4.61	0.002	13.44	203	86.0	100	
0940	93.65	12.19	4.57	0.002	13.12	204	86.0	100	
0945	93.65	11.45	4.58	0.001	12.93	205	86.7	100	
0950	93.65	12.00	4.60	0.001	12.63	206	87.7	100	
0955	93.65	11.83	4.59	0.001	12.51	208	87.9	100	
1000	93.65	12.01	4.55	0.002	12.92	209	87.9	100	
1005	93.65	12.20	4.57	0.001	12.87	209	88.2	100	Pumping Stopped to Recharge
1020	93.65	10.33	5.93	0.675	9.48	149	0.0	100	Horiba
1025	93.65	10.95	6.14	0.671	8.85	141	0.0	100	
1030	93.65	11.21	6.18	0.672	8.68	141	0.0	100	
1035	93.65	10.28	6.20	0.670	8.53	139	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/22/11Well ID: MW-17DInitial Static Water Level (feet btoc): 93.64Final Water Level (feet btoc): 93.64Purge Start Time: 1045Sample Time: 1125Samplers= Signatures: SA / BMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-2Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1055	93.64	11.24	6.63	0.297	10.10	115	0.0	150	
1100	93.64	11.58	6.55	0.299	8.04	116	0.0	150	
1105	93.64	11.64	6.51	0.297	5.72	116	0.0	150	
1110	93.64	11.72	6.50	0.296	4.90	117	0.0	150	
1115	93.64	11.80	6.49	0.296	4.48	118	0.0	150	
1120	93.64	11.76	6.49	0.296	4.29	118	0.0	150	
1125	93.64	11.72	6.49	0.296	4.24	119	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/24/11Well ID: MW-18AInitial Static Water Level (feet btoc): 106.85Final Water Level (feet btoc): 106.86Purge Start Time: 1415Sample Time: 1455Samplers= Signatures: SA/BMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5281-15Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1420	106.86	11.68	6.06	0.446	4.45	75	124	150	
1425	106.86	11.61	5.94	0.439	4.81	76	82.9	150	
1430	106.86	11.54	5.83	0.431	4.98	77	49.1	150	
1435	106.86	11.76	5.79	0.427	5.27	78	35.7	150	
1440	106.86	12.01	5.77	0.426	5.50	76	29.0	150	
1445	106.86	12.47	5.77	0.422	4.87	76	20.4	150	
1450	106.86	12.74	5.76	0.422	4.62	77	21.7	150	
1455	106.86	12.88	5.76	0.420	4.54	77	20.6	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/24/11Well ID: MW-18DInitial Static Water Level (feet btoc): 108.92Final Water Level (feet btoc): 108.92Purge Start Time: 1305Sample Time: 1345Samplers= Signatures: SA / BMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5281-14Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1310	108.92	9.51	7.07	0.554	7.87	34	0.0	100	
1315	108.92	10.50	6.75	0.561	8.42	46	0.0	100	
1320	108.92	10.52	6.56	0.567	7.58	53	0.0	100	
1325	108.92	10.65	6.33	0.571	7.26	57	0.0	100	
1330	108.92	10.83	6.23	0.574	6.37	59	0.0	100	
1335	108.92	10.88	6.19	0.576	5.98	60	0.0	100	
1340	108.92	10.94	6.17	0.576	5.58	61	0.0	100	
1345	108.92	10.12	6.16	0.576	5.62	63	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 03/24/11Well ID: MW-18CInitial Static Water Level (feet btoc): 108.62Final Water Level (feet btoc): 108.62Purge Start Time: 1610 ^{3/24/11} 500Sample Time: 1652Samplers= Signatures: VM/SAOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: ✓Sample Number: 525-16Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 70 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1615	108.65	13.63	6.14	0.665	6.40	64	1.2	50	The controller is not exhausting the air from the pump. We have to manually decompress the pump each time which causes a lower build up in air pressure. It is the hose coupling that is broken.
1620	108.65	13.67	6.09	0.696	6.06	64	0.0	50	
1625	108.65	10.92	6.07	0.748	6.53	69	0.0	100	
1628	108.65	10.89	6.04	0.749	6.17	72	0.0	100	
1646	108.65	10.85	6.02	0.754	5.98	73	0.0	100	
1649	108.65	10.82	6.02	0.753	5.93	74	0.0	100	
1652	108.65	10.73	6.01	0.753	5.73	74	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-23-11Well ID: MW-19A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1643Sample Time: 1717Samplers= Signatures: LZ/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-9Controller Settings: Recharge: 10 secs Discharge: 8 secs Pressure: 90 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1657		9.78	8.04	0.825	1.35	-109	0.0	100	
1700		9.91	7.68	0.834	2.74	-74	0.0	100	
1703		10.23	7.39	0.837	4.35	-38	0.0	100	
1706		10.36	7.28	0.836	4.42	-30	0.0	100	
1709		10.45	7.23	0.838	4.26	-25	0.0	100	
1712		10.54	7.21	0.844	4.20	-22	0.0	100	
1715		10.51	7.22	0.845	4.25	-18	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-23-11Well ID: MW-19C

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1553Sample Time: 1634Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-8Controller Settings: Recharge: 11 secs Discharge: 9 secs Pressure: 90 psiCycles Per Minute: 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1518		10.89	7.00	0.645	7.58	-25	0.0	90/100	
1621		11.05	6.95	0.637	7.79	-17	0.0	100	
1624		11.25	6.92	0.635	8.10	-8	0.0	100	
1627		11.15	6.90	0.631	8.09	-3	0.0	100	
1630		11.12	6.91	0.626	8.10	0	0.0	100	
1633		11.02	6.94	0.621	8.13	0	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-24-11Well ID: MW-20A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1029Sample Time: 1119Samplers= Signatures: LZ/AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-14Controller Settings: Recharge: 8 secs Discharge: 5 secs Pressure: 85 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1054		7.08	6.95	0.442	2.00	-89	0.4	100	
1057		7.44	6.64	0.452	1.34	-94	0.3	100	
1100		7.73	6.45	0.458	1.00	-100	0.0	100	
1108		7.65	6.34	0.464	0.79	-111	0.0	100	
1106		7.77	6.30	0.468	0.67	-120	0.0	100	
1109		8.03	6.31	0.472	0.64	-127	0.0	100	
1112		7.94	6.35	0.473	0.58	-132	0.0	100	
1115		7.79	6.37	0.471	0.58	-135	0.0	100	
1118		7.60	6.38	0.470	0.54	-137	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-24-11Well ID: MW-20C

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 0919Sample Time: 1013Samplers= Signatures: LZ/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: DUPLICATESample Number: 5282-12/5282-12 FDController Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 75 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0923		8.39	6.23	0.367	6.19	-81	0.0	100	
926		8.36	5.98	0.372	3.84	-87	0.0	100	
929		8.30	6.08	0.369	5.16	-73	0.0	100	
932		8.34	6.18	0.363	6.41	-58	0.0	100	
935		8.12	6.27	0.361	7.17	-46	0.0	100	
938		8.15	6.33	0.359	7.56	-34	0.0	100	
941		7.93	6.40	0.356	7.79	-23	0.0	100	
944		7.78	6.43	0.354	8.08	-12	0.0	100	
947		7.86	6.47	0.353	8.23	-3	0.0	100	
950		7.93	6.48	0.352	8.56	9	0.0	100	
953		8.14	6.50	0.351	8.59	17	0.0	100	
956		8.18	6.51	0.351	8.63	24	0.0	100	
959		8.08	6.53	0.350	8.70	31	0.0	100	
1002		8.01	6.54	0.349	8.76	40	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-24-11Well ID: MW-20D

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 0845Sample Time: 0912Samplers= Signatures: LZ / AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-11Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
851		7.73	6.65	0.369	1.01	-109	0.0	150	
854		8.85	6.41	0.360	0.71	-153	11.0	150	
857		8.97	6.20	0.355	0.55	-165	7.8	150	
900		9.02	6.15	0.352	0.50	-173	9.8	150	
903		9.06	6.11	0.351	0.51	-178	7.2	150	
906		9.36	6.10	0.350	0.48	-181	7.2	150	
909		9.41	6.09	0.349	0.45	-184	6.2	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-24-11OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-20EPurging/Sampling Device: QED Bladder Pump/compressed nitrogen

Initial Static Water Level (feet btoc): _____

Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: _____

Purge Start Time: 0800Sample Number: 5282-10Sample Time: 0841Controller Settings: Recharge: 13 secs Discharge: 13 secs Pressure: 90 psiSamplers= Signatures: LZ/AFCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
803		10.81	6.13	0.426	7.32	22	0.0	200	
806		10.75	6.19	0.383	1.87	45	0.0	200	
809		10.77	6.20	0.370	7.40	-22	0.0	200	
812		10.33	6.46	0.364	9.62	-15	0.0	200	
815		10.49	6.68	0.360	10.24	-14	0.0	200	
818		10.17	6.84	0.358	10.39	4	0.0	200	
821		10.05	6.96	0.355	10.49	15	0.0	200	
824		9.70	6.99	0.353	10.87	28	0.0	200	
827		9.74	7.02	0.353	10.53	38	0.0	200	
830		9.79	7.06	0.351	10.49	47	0.0	200	
833		9.84	7.06	0.351	10.29	55	0.0	200	
836		9.81	7.06	0.351	10.51	60	0.0	200	
839		9.82	7.05	0.352	10.47	64	0.0	200	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-23-11Well ID: MW-30A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1453Sample Time: 1524Samplers= Signatures: LZ / AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-6Controller Settings: Recharge: 10 secs Discharge: 8 secs Pressure: 80 psiCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1457		10.70	6.70	0.578	4.93	-179	0.0	100	
1500		10.84	6.63	0.589	5.77	-166	0.0	100	
1503		11.00	6.72	0.589	5.88	-154	0.0	100	
1506		11.05	6.79	0.591	6.41	-144	0.0	100	
1509		11.04	6.83	0.594	6.60	-137	0.0	100	
1512		11.00	6.88	0.596	7.47	-129	0.0	100	
1515		11.03	6.91	0.595	7.30	-123	0.0	100	
1518		11.02	6.94	0.595	7.27	-117	0.0	100	
1521		11.00	6.94	0.594	6.82	-114	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-23-2011OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-300CPurging/Sampling Device: QED Bladder Pump/compressed nitrogen

Initial Static Water Level (feet btoc): _____

Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: _____

Purge Start Time: 1401Sample Number: 9292-5Sample Time: 1448Controller Settings: Recharge: 10 secs Discharge: 8 secs Pressure: 75 psiSamplers= Signatures: LZ/AFCycles Per Minute: 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1408		10.87	7.13	239 0.558	1.23	-239	0.0	100	
1411		10.73	7.30	0.617	6.07	-196	0.0	100	
1414		10.87	7.47	0.597	12.39	-175	0.0	100	
1417		10.95	7.56	0.588	14.76	-148	0.0	100	
1420		10.96	7.62	0.583	17.19	-133	0.0	100	
1423		10.78	7.64	0.575	16.86	-123	0.0	100	
1426		10.85	7.67	0.568	16.67	-111	0.0	100	
1429		10.86	7.69	0.568	15.42	-100	0.0	100	
1432		10.93	7.69	0.568	17.81	-88	0.0	100	
1435		10.93	7.71	0.568	15.72	-80	0.0	100	
1438		10.80	7.69	0.572	15.60	-74	0.0	100	
1441		10.88	7.71	0.572	17.16	-67	0.0	100	
1444		10.80	7.72	0.571	16.79	-63	0.0	100	
1447		10.68	7.70	0.572	16.95	-59	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-23-11Well ID: MW-30 D

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1315Sample Time: 1353Samplers= Signatures: LZ / AFOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-4Controller Settings: Recharge: 13 secs Discharge: 12 secs Pressure: 95 psiCycles Per Minute: 3

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments *
1321		11.35	5.86	0.607	3.95	-179	0.0	100	
1324		11.31	5.87	0.611	4.53	-184	0.0	100	
1327		11.29	5.78	0.640	2.60	-181	0.0	100	
1330		11.22	5.89	0.635	1.60	-194	0.0	100	
1333		11.26	5.92	0.620	1.50	-197	0.0	100	
1336		11.35	6.06	0.626	1.75	-199	0.0	100	
1339		11.34	6.09	0.621	2.08	-199	0.0	100	
1342		11.46	6.19	0.617	2.39	-203	0.0	100	
1345		11.50	6.18	0.616	2.97	-200	0.0	100	
1348		11.54	6.26	0.612	3.07	-201	0.0	100	
1351		11.54	6.24	0.610	3.40	-199	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-23-11Well ID: MW-30 E

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1224Sample Time: 1312Samplers= Signatures: LZ/AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-3Controller Settings: Recharge: 15 secs Discharge: 15 secs Pressure: 100 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1231		10.30	6.16	0.568	1.67	-199	0.0	150	
1234		10.49	6.25	0.562	11.27	-199	0.0	150	
1237		11.17	6.76	0.560	13.05	-186	0.0	150	
1240		11.20	7.04	0.561	14.44	-188	0.0	150	
1243		11.22	7.11	0.560	14.54	-179	0.0	150	
1246		11.26	7.25	0.559	14.46	-167	0.0	150	
1249		11.43	7.33	0.560	14.70	-154	0.0	150	
1252		11.50	7.38	0.562	16.30	-140	0.0	150	
1255		11.52	7.45	0.561	16.80	-129	0.0	150	
1258		11.43	7.46	0.558	17.56	-113	0.0	150	
1301		11.32	7.53	0.556	15.15	-104	0.0	150	
1304		11.34	7.52	0.555	17.35	-96	0.0	150	
1307		11.37	7.52	0.556	19.29	-92	0.0	150	
1310		11.39	7.53	0.555	18.67	-90	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-23-11Well ID: MW-31A

Initial Static Water Level (feet btoc): _____

Final Water Level (feet btoc): _____

Purge Start Time: 1049Sample Time: 1131Samplers= Signatures: LZ / AFOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5282-2Controller Settings: Recharge: 9 secs Discharge: 6 secs Pressure: 75 psiCycles Per Minute: 5

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1101		10.19	7.13	0.733	0.68	-128	0.0	100	
1104		10.15	6.65	0.732	0.69	-104	0.0	100	
1107		10.33	6.48	0.729	0.65	-96	0.0	100	
1110		10.33	6.44	0.728	0.63	-95	0.0	100	
1113		10.31	6.43	0.726	0.61	-96	0.0	100	
1116		10.33	6.46	0.725	0.61	-100	0.0	100	
1119		10.42	6.49	0.723	0.62	-102	0.0	100	
1122		10.28	6.52	0.720	0.78	-105	0.0	100	
1125		10.02	6.55	0.720	0.74	-109	0.0	100	
1128		9.92	6.61	0.717	0.74	-111	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-23-11OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-31CPurging/Sampling Device: QED Bladder Pump/compressed nitrogen

Initial Static Water Level (feet btoc): _____

Analytical Parameters: LDL VOCs

Final Water Level (feet btoc): _____

QC Samples Collected: MS/MSDPurge Start Time: 0957Sample Number: 5282-1Sample Time: 1038Controller Settings: Recharge: 10 secs Discharge: 8 secs Pressure: 80 psiSamplers= Signatures: LZ/AFCycles Per Minute: 4

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1002		9.83	6.79	0.523	6.83	-47	0.0	100	
1005		10.01	6.76	0.526	7.48	-32	0.0	100	
1008		10.22	6.77	0.524	7.90	-14	0.0	100	
1011		10.24	6.77	0.526	8.06	-1	0.0	100	
1014		10.43	6.76	0.525	8.28	16	0.0	100	
1017		10.36	6.76	0.525	8.32	23	0.0	100	
1020		10.38	6.76	0.524	8.16	33	0.0	100	
1023		10.29	6.73	0.524	9.80	38	0.0	100	
1026		10.37	6.75	0.523	8.30	47	0.0	100	
1029		10.56	6.77	0.523	8.14	49	0.0	100	
1032		10.66	6.76	0.524	7.96	52	0.0	100	
1035		10.65	6.79	0.525	8.50	54	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/22/11Well ID: MW-4101Initial Static Water Level (feet btoc): 119.72Final Water Level (feet btoc): 119.72Purge Start Time: 1605Sample Time: 1735Samplers= Signatures: sa | BMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5281-7Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 85 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1405	119.72	11.11	6.62	0.430	9.18	1169	10.8	80	
1420	119.72	11.12	6.71	0.452	10.27	173	8.8	80	
1425	119.72	11.01	6.43	0.550	10.35	186	33.6	80	
1430	119.72	10.53	6.25	0.664	9.65	189	66.2	80	
1435	119.72	10.51	6.21	0.682	9.00	190	75.1	80	
1440	119.72	10.63	6.20	0.688	8.77	191	71.5	80	
1445	119.72	10.70	6.19	0.692	8.60	191	70.6	80	
1450	119.72	10.73	6.18	0.695	8.42	192	59.0	40	
1455	119.72	10.75	6.18	0.696	8.24	192	48.1	40	
1500	119.72	10.67	6.17	0.698	8.22	192	37.0	80	
1705	119.72	10.47	6.17	0.698	8.13	193	29.1	80	
1710	119.72	10.53	6.17	0.698	8.27	194	22.3	80	
1715	119.72	10.54	6.17	0.699	8.19	195	14.8	80	
1720	119.72	10.31	6.16	0.701	8.21	195	10.0	80	
1725	119.72	10.21	6.16	0.700	8.17	196	4.7	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

1730	119.72	10.21	6.14	0.699	8.15	196	3.2	80
1735	119.72	10.27	6.14	0.698	8.14	196	2.8	80

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/22/11Well ID: MW-41D2Initial Static Water Level (feet btoc): 119.43Final Water Level (feet btoc): 119.43Purge Start Time: 1515Sample Time: 1557Samplers= Signatures: SA / BMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5281-6Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1520	119.43	11.63	6.86	0.392	9.70	155	34.8	80	
1525	119.43	11.61	7.14	0.376	11.03	151	18.5	80	
1530	119.43	11.46	7.13	0.373	10.47	150	11.1	80	
1535	119.43	11.47	6.60	0.360	10.12	170	8.0	80	
1540	119.43	11.26	6.45	0.358	7.61	174	8.7	80	
1545	119.43	11.25	6.38	0.358	6.57	175	8.8	80	
1548	119.43	11.45	6.37	0.357	6.40	175	8.9	80	
1551	119.43	11.61	6.37	0.358	5.95	175	12.6	80	
1554	119.43	11.47	6.35	0.358	5.84	176	12.8	80	
1557	119.43	11.50	6.35	0.358	5.62	176	12.7	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-42DInitial Static Water Level (feet btoc): 120.85Final Water Level (feet btoc): 121.01Purge Start Time: 1340Sample Time: 1425Samplers= Signatures: JG/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Field Duplicate 5281-27Sample Number: 5281-27Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1352	121.01	9.74	6.48	0.451	8.47	130	0.0	70	
1355	121.01	8.84	6.71	0.480	9.97	127	0.0	70	
1359	121.01	8.82	6.75	0.487	10.13	127	0.0	70	
1402	121.01	8.60	6.57	0.499	9.39	131	0.0	70	
1407	121.01	8.42	6.29	0.517	8.12	134	0.0	70	
1415	121.01	8.29	6.17	0.531	7.34	133	0.0	70	
1418	121.01	8.09	6.16	0.532	7.03	133	0.0	70	
1421	121.01	8.19	6.14	0.533	7.08	132	0.0	70	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-42EInitial Static Water Level (feet btoc): 120.97Final Water Level (feet btoc): 121.11Purge Start Time: 1430Sample Time: 1505Samplers= Signatures: JG/wmOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: 5281-28 FD-Field DupSample Number: 5281-28Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 120 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1436	121.11	6.87	6.31	0.468	8.53	126	0.0	50	
1440	121.11	7.05	6.58	0.451	9.35	122	0.0	100	
1444	121.11	7.65	6.69	0.450	9.81	120	0.0	100	
1447	121.11	8.05	6.48	0.451	8.45	123	0.0	100	
1450	121.11	8.16	6.35	0.452	7.50	124	0.0	100	
1453	121.11	8.26	6.28	0.452	6.90	124	0.0	100	
1456	121.11	8.45	6.24	0.451	6.39	123	0.0	100	
1459	121.11	8.52	6.21	0.451	6.08	123	0.0	100	
1502	121.11	8.50	6.19	0.451	5.92	123	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11Well ID: MW-43DInitial Static Water Level (feet btoc): 125.56Final Water Level (feet btoc): 125.58Purge Start Time: 1230Sample Time: 1425Samplers= Signatures: YG/wmOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-20Controller Settings: Recharge: 20 secs Discharge: 300 secs Pressure: 103 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1246	125.58	7.20	6.79	0.497	7.98	126	36.0	75	
1249	125.58	7.49	6.89	0.525	9.53	124	35.1	75	
	Halt purging + return to site to Unload Garvey RD equipment								
1406	125.58	7.79	6.24	0.589	7.46	148	5.5	75	
1410	125.58	7.89	6.18	0.596	7.58	143	6.6	75	
1413	125.58	8.11	6.14	0.598	7.83	146	6.4	75	
1416	125.58	8.13	6.12	0.599	6.64	147	10.3	75	
1419	125.58	8.13	6.11	0.600	6.52	147	9.7	75	
1422	125.58	8.11	6.10	0.599	6.48	147	8.2	75	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 03/25/11Well ID: MW-43 EInitial Static Water Level (feet btoc): 125.49Final Water Level (feet btoc): 125.50Purge Start Time: 1435Sample Time: 1525Samplers= Signatures: WM/JGOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCs

QC Samples Collected: _____

Sample Number: 5281-21Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1445	125.55	8.11	6.10	0.599	6.48	147	8.2	70	
1450	125.55	7.01	6.48	0.460	7.87	136	5.6	70	
1455	125.55	7.38	6.73	0.440	9.08	129	3.9	70	
1500	125.55	7.45	6.71	0.436	7.65	133	4.1	70	
1505	125.55	7.54	6.51	0.435	7.53	139	4.0	70	
1510	125.55	7.68	6.35	0.435	7.80	145	4.8	70	
1515	125.55	7.69	6.26	0.435	6.94	146	15.4	70	
1520	125.55	7.59	6.22	0.435	6.34	148	14.6	70	
1525	125.55	7.58	6.21	0.435	6.31	149	14.9	70	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/25/11Well ID: MW-44DInitial Static Water Level (feet btoc): 109.89Final Water Level (feet btoc): 109.87Purge Start Time: 0820Sample Time: 1135Samplers= Signatures: WM/JGOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: —Sample Number: 5281-17Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 ¹⁰⁵ psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0835	109.91	8.96	6.52	0.432	6.60	113	12.1	100	
0840	109.91	9.05	6.78	0.415	6.60	115	98.8	100	
0845	109.91	9.28	6.28	0.417	6.63	113	142	100	
0850	109.91	9.52	6.36	0.416	7.37	107	143	100	
0855	109.91	9.64	6.32	0.417	6.42	102	135	100	
0900	109.91	9.67	6.18	0.417	5.43	101	136	100	
0905	109.91	9.71	6.15	0.416	4.42	100	158	100	
0910	109.91	9.72	6.13	0.417	4.45	100	165	100	
0915	109.91	9.75	6.14	0.416	4.52	101	163	100	
0920	10	9.87	6.14					100	
Held + purging to let suspended particles settle to lower turbidity									
1110	109.87	9.50	6.27	0.391	5.05	120	148	125	
1113	109.87	9.74	6.24	0.399	4.99	121	151	125	
1118	109.87	9.90	6.23	0.406	4.95	121	108	125	
1121	109.87	9.95	6.22	0.409	4.62	121	89.9	125	
Tubing Volume Calculations:									
0.17-inch Tubing = 18 mL per foot of water in tubing									
1124	109.87	9.98	6.21	0.412	4.61	121	83.2	125	
1127	109.87	9.98	6.20	0.412	4.58	121	83.8	125	
1130	109.87	9.99	6.20	0.412	4.56	121	80.8	125	

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11Well ID: mw-44EInitial Static Water Level (feet btoc): 109.76Final Water Level (feet btoc): 109.87Purge Start Time: 1015Sample Time: 1055Samplers= Signatures: KG/wmOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NASample Number: 5281-18Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 105 psi

Cycles Per Minute: _____

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1025	109.87	9.87	6.78	0.346	8.53	103	7.6	75	
1028	109.87	9.75	6.82	0.338	7.90	103	11.1	75	
1031	109.87	9.72	6.70	0.339	7.97	108	8.4	75	
1034	109.87	9.67	6.57	0.339	7.78	112	7.6	75	
1037	109.87	9.63	6.48	0.339	6.99	114	3.2	75	
1040	109.87	9.58	6.41	0.339	6.06	116	3.1	75	
1043	109.87	9.58	6.38	0.341	5.38	116	5.8	75	
1046	109.87	9.61	6.37	0.343	4.86	115	6.0	75	
1049	109.87	9.66	6.35	0.344	4.75	115	6.8	75	
1052	109.87	9.69	6.34	0.344	4.92	115	7.1	75	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: mw-45cInitial Static Water Level (feet btoc): 102.86Final Water Level (feet btoc): 102.59Purge Start Time: 1511Sample Time: 1550Samplers= Signatures: JG/wmOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Field DuplicateSample Number: 5281-40, 5281-40 FDController Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1513	102.59	7.57	6.25	0.490	7.69	131	4.8	100	
1513	102.59	7.57	6.25	0.490	7.69	131	4.8	100	
1517	102.59	6.89	6.26	0.496	8.69	132	8.5	100	
1527	102.59	7.19	6.32	0.662	11.82	134	16.5	100	
1533	102.59	7.44	6.29	0.760	11.50	134	16.1	100	
1536	102.59	7.49	6.30	0.760	11.61	133	18.7	100	
1539	102.59	7.54	6.30	0.705	11.49	133	18.3	100	
1542	102.59	7.60	6.30	0.708	11.50	134	18.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 2-27-11Well ID: mw-45DInitial Static Water Level (feet btoc): 102.53Final Water Level (feet btoc): 102.24Purge Start Time: 1550Sample Time: 1630Samplers= Signatures: JG/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Rinsek afterSample Number: 5281-42Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1557	102.23	7.11	6.47	0.517	10.81	128	1.1	100	
1601	102.24	7.32	6.53	0.525	10.64	127	1.4	100	
1606	102.24	7.56	6.40	0.581	9.62	131	1.8	100	
1609	102.24	7.67	6.33	0.588	9.38	132	1.7	100	
1614	102.24	7.74	6.38	0.594	9.14	132	1.9	100	
1617	102.24	7.80	6.29	0.597	9.03	133	1.4	100	
1620	102.24	7.82	6.29	0.598	9.03	133	1.4	100	
1624	102.24	7.87	6.29	0.606	8.87	133	1.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/22/11Well ID: MW-46D1Initial Static Water Level (feet btoc): 114.48Final Water Level (feet btoc): 114.48Purge Start Time: 1350Sample Time: 1440Samplers= Signatures: S.A. / B.M.OVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-5Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 80 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1400	114.48	10.77	6.91	0.575	8.61	147	419	80	
1405	114.48	10.75	7.20	0.606	8.40	153	352	80	
1410	114.48	10.55	6.64	0.610	10.03	173	175	80	
1415	114.48	10.80	6.42	0.605	9.79	177	120	80	
1420	114.48	11.44	6.24	0.605	7.83	181	66	80	
1425	114.48	11.10	6.19	0.608	7.69	183	43.8	80	
1430	114.48	10.75	6.15	0.606	6.95	186	31.9	80	
1435	114.48	10.92	6.15	0.602	6.64	186	31.1	80	
1440	114.48	10.93	6.13	0.603	6.61	186	30.2	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/22/11OVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmosphereWell ID: MW-46D2Purging/Sampling Device: QED Bladder Pump/compressed nitrogenInitial Static Water Level (feet btoc): 114.65Analytical Parameters: LDL VOCsFinal Water Level (feet btoc): 114.65QC Samples Collected: NonePurge Start Time: 1250Sample Number: 5281-4Sample Time: 1341Controller Settings: Recharge: 30 secs Discharge: 10 secs Pressure: 100 psiSamplers= Signatures: SA | BMCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1300	114.65	11.15	6.56	0.299	9.02	125	0.0	80	
1305	114.65	11.96	7.15	0.472	9.10	123	0.0	80	
1310	114.65	11.98	7.18	6.469	9.65	123	0.0	80	
1315	114.65	11.93	7.00	6.477	9.63	130	0.0	80	
1320	114.65	11.94	6.68	0.488	10.14	142	0.0	80	
1325	114.65	11.94	6.53	0.496	10.20	147	0.0	80	
1330	114.65	11.59	6.40	0.507	8.80	152	0.0	80	
1335	114.65	11.24	6.36	0.509	8.19	154	0.0	80	
1338	114.65	11.22	6.35	0.512	7.88	155	0.0	80	
1341	114.65	11.16	6.33	0.515	7.51	157	0.0	80	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/29/11Well ID: MW-104AInitial Static Water Level (feet btoc): 104.90Final Water Level (feet btoc): 104.93Purge Start Time: 0930Sample Time: 1000Samplers= Signatures: JA / BMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Extra Volume for M&MSDSample Number: 5281-10Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0935	104.93	8.20	6.30	0.514	5.21	51	0.0	100	
0940	104.93	8.45	7.02	0.733	6.06	41	0.0	100	
0945	104.93	8.41	6.77	0.765	6.59	49	0.0	100	
0950	104.93	8.95	6.37	0.772	6.65	59	0.0	100	
0955	104.93	9.14	6.34	0.776	6.61	59	0.0	100	
1000	104.93	9.20	6.31	0.771	6.74	60	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



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LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/29/11Well ID: MD-104CInitial Static Water Level (feet btoc): 107.00Final Water Level (feet btoc): 107.01Purge Start Time: 0855Sample Time: 0925Samplers= Signatures: SA/BinOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-9Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 90 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0900	107.01	10.76	6.58	0.430	8.47	41	1.4	100	
0905	107.01	10.64	6.46	0.434	7.11	53	0.0	100	
0910	107.01	10.51	6.26	0.440	6.92	57	0.0	100	
0915	107.01	10.65	6.14	0.440	5.52	59	0.0	100	
0920	107.01	10.69	6.13	0.441	5.29	59	0.0	100	
0925	107.01	10.68	6.13	0.442	5.09	59	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3/24/11Well ID: MW - 104 DInitial Static Water Level (feet btoc): 106.94Final Water Level (feet btoc): 106.95Purge Start Time: 0810Sample Time: 0850Samplers= Signatures: SA / BMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: ~~Extra volume for MS/MSL~~ SASample Number: 5281-8Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0820	106.95	9.84	5.91	0.363	7.20	60	0.0	100	
0825	106.95	10.27	5.88	0.357	5.34	60	0.0	100	
0830	106.95	10.47	5.85	0.355	4.58	63	0.0	100	
0835	106.95	10.65	5.84	0.354	3.98	63	0.0	100	
0840	106.95	10.14	5.88	0.355	3.45	62	0.0	100	
0845	106.95	9.92	5.89	0.353	3.28	62	0.0	100	
0850	106.95	10.11	5.90	0.352	3.31	62	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: mw-105AInitial Static Water Level (feet btoc): 119.14Final Water Level (feet btoc): 119.36Purge Start Time: 0845Sample Time: 0950Samplers= Signatures: JG/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-33Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
0850	119.36	7.82	6.22	0.448	5.75	105	0.0	100	
0857	119.36	6.65	6.30	0.677	9.44	109	0.0	100	
0903	119.36	6.94	6.22	0.791	8.57	113	0.0	100	
0910	119.36	6.90	6.16	0.853	8.12	115	0.0	100	
0915	119.36	6.49	6.18	0.876	7.76	113	0.0	100	
0920	119.36	6.54	6.25	0.874	7.36	109	0.0	100	
0925	119.36	Nitrogen tank empty; Replace					—	100	Stop purging
0930	119.36	5.41	6.21	0.895	8.08	112	0.0	100	Start Purging
0935	119.36	6.66	6.21	0.868	8.07	112	0.0	100	
0940	119.36	7.74	6.21	0.880	8.15	111	0.0	100	
0945	119.36	7.98	6.22	0.886	7.96	111	0.0	100	
0950	119.36	8.02	6.22	0.889	8.10	111	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-105CInitial Static Water Level (feet btoc): 120.81Final Water Level (feet btoc): 120.90Purge Start Time: 1046Sample Time: 1125Samplers= Signatures: JG/WMOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-34Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 100 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1055	120.90	5.66	6.28	0.482	6.47	110	1.2	100	
1100	120.90	5.52	6.30	0.541	9.43	113	0.0	100	
1104	120.90	6.60	6.49	0.642	9.75	113	0.7	100	
1108	120.90	7.30	6.27	0.681	8.40	116	0.0	100	
1111	120.90	7.44	6.21	0.690	8.10	117	0.0	100	
1116	120.90	7.67	6.19	0.697	7.77	117	0.0	100	
1119	120.90	7.77	6.18	0.699	7.65	117	0.0	100	
1122	120.90	7.80	6.19	0.699	7.64	117	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-27-11Well ID: MW-105DInitial Static Water Level (feet btoc): 120.65Final Water Level (feet btoc): 120.70Purge Start Time: 1000Sample Time: 1040Samplers= Signatures: JG/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: Field DupSample Number: 5281-31, 5281-31FDController Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 110 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1007	120.65	6.43	6.46	0.525	9.86	103	0.0	100	
1011	120.70	6.33	6.52	0.503	12.24	103	0.0	100	
1014	120.70	6.34	6.50	0.483	11.76	104	0.0	100	
1017	120.70	6.37	6.42	0.468	8.39	106	0.0	100	
1026	120.70	6.52	6.31	0.455	6.60	109	0.0	100	
1029	120.70	6.63	6.28	0.454	6.18	109	0.0	100	
1034	120.70	6.84	6.27	0.452	6.01	108	0.0	100	
1038	120.70	6.88	6.30	0.450	5.93	108	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-25-11Well ID: MW-106AInitial Static Water Level (feet btoc): 119.94Final Water Level (feet btoc): 120.22Purge Start Time: 1020Sample Time: 1100Samplers= Signatures: JS/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5282-24Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 60 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1035	120.19	10.60	5.98	0.917	8.65	168	0.0	150	
1038	120.22	10.67	5.91	0.917	7.91	160	0.0	150	
1041	120.22	10.69	5.91	0.920	8.15	156	0.0	150	
1045	120.22	10.67	5.94	0.922	7.91	151	0.0	150	
1048	120.22	10.65	5.93	0.925	7.96	149	0.0	150	
1051	120.22	10.63	5.94	0.925	8.09	148	0.0	150	
1055	120.22	10.65	5.95	0.927	8.03	147	0.0	150	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet



CDM

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-26-11Well ID: MW-1060Initial Static Water Level (feet btoc): 122.59Final Water Level (feet btoc): 122.82Purge Start Time: 1110Sample Time: 1150Samplers= Signatures: SG/wmOVM: FID ☐ PID ☐ In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-25Controller Settings: Recharge: 20 secs Discharge: 10 secs Pressure: 95 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1118	122.81	7.48	6.41	0.660	8.99	151	0.0	100	
1122	122.81	7.34	6.41	0.624	11.39	153	0.0	100	
1130	122.82	6.97	6.00	0.601	7.91	153	0.0	100	
1133	122.82	7.10	5.97	0.60	7.85	152	0.0	100	
1137	122.82	7.28	5.94	0.599	7.47	151	0.0	100	
1140	122.82	7.34	5.94	0.599	7.39	150	0.0	100	
1143	122.82	7.39	5.93	0.598	7.00	148	0.0	100	
1146	122.82	7.42	5.94	0.599	7.15	148	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet

LOW-FLOW GROUNDWATER SAMPLING LOG

Site Name: Garvey Elevator Site Date: 3-2Well ID: MW-106AInitial Static Water Level (feet btoc): 122.63Final Water Level (feet btoc): 122.83Purge Start Time: 1155Sample Time: 1235Samplers= Signatures: TG/WMOVM: FID G PID G In Casing (ppm): (Initial) Not Applicable (Vented to) atmospherePurging/Sampling Device: QED Bladder Pump/compressed nitrogenAnalytical Parameters: LDL VOCsQC Samples Collected: NoneSample Number: 5281-26Controller Settings: Recharge: 26 secs Discharge: 16 secs Pressure: 110 psiCycles Per Minute: 2

Time	Water Level (ft btoc)	Temperature (Degrees C)	pH	Specific Cond. (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Flow Rate (mL/min)	Comments
1203	122.83	7.16	6.34	0.426	8.29	132	0.0	100	
1206	122.83	7.09	6.43	0.413	12.18	129	0.0	100	
1210	122.83	7.37	6.35	0.408	10.18	130	0.0	100	
1214	122.83	7.77	6.27	0.405	7.82	130	0.0	100	
1217	122.83	8.00	6.24	0.404	6.96	129	0.0	100	
1220	122.83	8.26	6.22	0.403	6.21	128	0.0	100	
1223	122.83	8.40	6.21	0.403	5.85	127	0.0	100	
1226	122.83	8.42	6.20	0.402	5.56	126	0.0	100	
1229	122.83	8.41	6.20	0.402	5.50	126	0.0	100	

Tubing Volume Calculations:

0.17-inch Tubing = 18 mL per foot of water in tubing

PARAMETERS FOR WATER QUALITY STABILIZATION

Temperature	± 1° C	DO / Turbidity	± 10 %
pH	± 0.1 pH unit	ORP	± 10 mV
Conductivity	± 3 %	Water Level	± 0.3 feet