APPENDIX F – WATER QUALITY FIELD PARAMETERS DURING FINAL WELL PURGE

FW-10B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	3800
3/10/2006	3800

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
03/04/06	1	126.3	Start
03/04/06	1	154.4	End
03/05/06	1	109.9	Start
03/05/06	1	114.9	End
03/06/06	1	82.8	Start
03/06/06	1	95.7	End
03/07/06	1	110.3	Start
03/07/06	1	106.8	End
03/08/06	1	56.2	Start
03/09/06	1	88.5	Start
03/09/06	1	89.3	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/10/05	2	1593	Start
12/10/05	2	1290	End
01/09/06	2	40.5	Start
01/09/06	2	114.8	End
01/10/06	2	148.8	Start
01/10/06	2	87.7	End
01/11/06	2	123.2	Start
01/11/06	2	121.1	End
01/12/06	2	169.5	Start
01/12/06	2	147	End
01/13/06	2	103.4	Start
01/13/06	2	89.4	End
01/14/06	2	117.9	End
01/15/06	2	67.8	Start
01/15/06	2	65.5	End
01/16/06	2	73	Start
01/16/06	2	55.3	End
01/17/06	2	87	Start
01/17/06	2	59.9	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/09/05	3	1030	Start
12/09/05	3	922	End
12/15/05	3	232	Start
12/15/05	3	181.5	End
12/20/05	3	162.5	Start
12/21/05	3	60.4	Start
12/27/05	3	58.2	Start
12/28/05	3	56.7	Start
12/29/05	3	66.8	Start
12/30/05	3	28	Start

Zone 4 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/09/05	4	694	Start
12/09/05	4	530	End
01/05/06	4	208	Start
01/06/06	4	166.2	Start
01/07/06	4	47.9	Start
01/08/06	4	39.8	Start
01/09/06	4	35.8	Start

FW-11B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	2100
3/10/2006	2100

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/15/05	1	50	End
12/16/05	1	20	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/15/05	2	50	End
12/16/05	2	20	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/15/05	3	50	End
12/16/05	3	20	End
01/14/06	3	12.9	End

Zone 4 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/16/05	4	20	End
01/13/06	4	6.3	End

FW-12B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	3700
3/10/2006	3700

Development Concentrations - All Zones			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/15/05	All	270	End
12/16/05	All	190	End
12/17/05	All	360	End
12/18/05	All	232	End
12/19/05	All	220	End
12/20/05	All	208	End
12/21/05	All	175	End
12/27/05	All	126	End
12/28/05	All	68	End
12/29/05	All	119	End
12/30/05	All	96	End
01/09/06	All	66.2	Start
01/09/06	All	41.3	End
01/10/06	All	62.4	Start
01/10/06	All	35.1	End
01/11/06	All	45.4	Start
01/11/06	All	50.9	End
01/12/06	All	51	Start
01/12/06	All	127	End
01/13/06	All	40.1	Start
01/13/06	All	53.8	End
01/14/06	All	55.5	Start
01/14/06	All	72.8	End
01/15/06	All	40.5	Start
01/15/06	All	38.8	End
01/16/06	All	41.1	Start
01/16/06	All	29	End

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/12/05	1	500	Evening
01/22/06	1	69.4	Morning
01/22/06	1	56.3	Evening
03/03/06	1	52.5	Morning
03/03/06	1	30.2	Evening
03/04/06	1	37.1	Morning
03/04/06	1	37.6	Evening
03/05/06	1	23.2	Morning
03/05/06	1	25.5	Evening

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/11/05	2	1000	Evening
01/21/06	2	16.6	Morning
01/21/06	2	43.4	Evening

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/11/05	3	1000	Evening
01/21/06	3	15	Morning
01/21/06	3	39.4	Evening

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
12/11/05	4	1000	Evening
01/19/06	4	0.75	Morning
01/20/06	4	24	Morning
01/20/06	4	25.5	Evening

FW-13B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	300
3/10/2006	300

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/28/05	1	12.4	Evening
12/30/05	1	2.6	Evening

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/28/05	2	12.4	Evening
12/29/05	2	2.6	Evening
01/16/06	2	3.3	Morning
01/16/06	2	18.9	Evening

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/28/05	3	12.4	Evening
12/29/05	3	1.9	Evening
01/15/06	3	3.7	Morning
01/15/06	3	4.7	Evening

Zone 4 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/19/05	4	147.3	Evening
12/20/05	4	140	Evening
12/29/05	4	9.3	Evening
01/15/06	4	8.3	Morning
01/15/06	4	7.6	Evening

FW-14B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	4000
3/10/2006	4000

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/20/05	1	20	End
01/17/06	1	37.3	Start
01/17/06	1	22.5	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/19/05	2	48.4	End
12/20/05	2	21	End
01/17/06	2	23	Start
01/17/06	2	16.2	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
12/19/05	3	120	End
12/20/05	3	28	End
01/17/06	3	14.4	Start
01/17/06	3	13.6	End

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
12/17/05	4	360	End
12/20/05	4	35	End
01/16/06	4	30.7	Start
01/16/06	4	47.4	End

FW-15B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
3/10/2006	1000

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
01/13/06	1	22.8	Start
01/14/06	1	21	Start
01/14/06	1	15.4	End
01/18/06	1	8.5	Start
1/18/06	1	28.5	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
01/13/06	2	12.9	Start
01/13/06	2	16.6	End
01/18/06	2	13.5	Start
1/18/06	2	13.5	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
01/11/06	3	47.7	Start
01/11/06	3	26	End
01/12/06	3	30.5	Start
01/12/06	3	29.3	End
01/13/06	3	16.9	Start
01/18/06	3	12.2	Start
01/18/06	3	14.4	End

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
01/08/06	4	158.3	Start
01/08/06	4	139.8	End
01/09/06	4	97.1	Start
01/09/06	4	70.2	End
01/10/06	4	111.2	Start
01/10/06	4	50.7	End
01/17/06	4	0.36	Start
01/17/06	4	10.6	End

FW-16B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
3/10/2006	1000

Development Concentrations - All Zones			
Date	Zone	Concentration (mg/L)	Daily Start/End
01/07/06	All	71.3	Start
01/07/06	All	217	End
01/08/06	All	250	Start
01/08/06	All	131.1	End
01/09/06	All	114.1	Start
01/09/06	All	71.1	End
01/10/06	All	106.2	Start
01/10/06	All	68.3	End
01/11/06	All	77.7	Start
01/11/06	All	46.2	End
01/12/06	All	89.5	Start
01/12/06	All	107	End
01/13/06	All	77.1	Start
01/13/06	All	92.9	End
01/14/06	All	73.9	Start
01/14/06	All	92.7	End
01/15/06	All	57.8	Start
01/15/06	All	44.9	End
01/16/06	All	73	Start
01/16/06	All	57.3	End

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
01/22/06	1	172.8	Start
01/22/06	1	116.4	End
03/01/06	1	16	Start
03/02/06	1	39.9	Start
03/02/06	1	54.2	End
03/03/06	1	55.5	Start
03/03/06	1	61.8	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
01/22/06	2	51.6	Start
01/22/06	2	61.6	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
01/22/06	3	42.2	Start
01/22/06	3	53.5	End

FW-17B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
3/10/2006	1000

Development Concentrations - All Zones			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/03/06	All	83	Start
02/03/06	All	120	End
02/04/06	All	130	Start
02/04/06	All	34	End
02/05/06	All	32	Start
02/05/06	All	14	End
02/06/06	All	16.2	Start
02/06/06	All	13.9	End
02/07/06	All	23	Start
02/07/06	All	7.2	End

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/08/06	1	15	End
02/09/06	1	0.8	End
03/06/06	1	0.33	Start
03/06/06	1	0.3	End
03/07/06	1	0.79	Start
03/07/06	1	0.43	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/08/06	2	9.6	End
02/09/06	2	0.4	End
03/05/06	2	2	Start
03/05/06	2	0.32	End
03/06/06	2	0.4	Start
03/06/06	2	0.06	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/08/06	3	2.9	End
02/09/06	3	1.6	End
03/05/06	3	0.5	Start
03/05/06	3	0.8	End

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
02/07/06	4	2.4	End
02/08/06	4	2.4	End
02/09/06	4	6.6	End
03/05/06	4	2.1	End

FW-18B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
3/10/2006	1000

Development Concentrations - All Zones			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/05/06	All	94.4	Start
02/06/06	All	191	Start
02/06/06	All	110	End
02/07/06	All	108	Start
02/07/06	All	50	End
02/08/06	All	81	Start
02/08/06	All	56	End

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/18/06	1	2500	Start
02/18/06	1	2500	End
02/19/06	1	39	Start
02/19/06	1	45	End
03/07/06	1	18.6	Start
03/07/06	1	1.8	End
03/08/06	1	3.7	Start
03/08/06	1	13.4	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/17/06	2	46	Start
02/17/06	2	105	End
02/18/06	2	89	Start
02/18/06	2	68	End
03/06/06	2	1.5	Start
03/06/06	2	21.8	End
03/07/06	2	32.1	Start
03/07/06	2	25.1	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/16/06	3	44	Start
02/16/06	3	46	End
02/17/06	3	47.4	Start
02/17/06	3	52.5	End
02/19/06	3	75	Start
02/19/06	3	50	End
02/20/06	3	45	Start
02/20/06	3	30	End
03/06/06	3	0.1	Start
03/06/06	3	0.26	End

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
02/14/06	4	44	Start
02/14/06	4	45	End
02/15/06	4	46	Start
02/15/06	4	58	End
02/19/06	4	54	Start
02/19/06	4	57	End
03/06/06	4	4.7	Start
03/06/06	4	1.3	End

FW-19B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
3/10/2006	1000

Development Concentrations - All Zones			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/03/06	All	139	Start
02/03/06	All	114	End
02/04/06	All	123	Start
02/04/06	All	159	End
02/05/06	All	211	Start
02/05/06	All	140	End
02/06/06	All	211	Start
02/06/06	All	112	End
02/07/06	All	143	Start
02/07/06	All	107	End
02/08/06	All	69	Start
02/08/06	All	91	End
02/14/06	All	130	Start
02/14/06	All	60	End
02/15/06	All	63	Start
02/15/06	All	52	End
02/16/06	All	61	Start
02/16/06	All	40	End
02/17/06	All	44	Start
02/17/06	All	55	End
02/18/06	All	72	Start
02/18/06	All	27	End
02/19/06	All	25	Start
02/19/06	All	22	End
02/20/06	All	25	Start
02/20/06	All	16	End
02/21/06	All	24	Start
02/21/06	All	20	End

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
03/04/06	1	29.7	Start
03/04/06	1	34.5	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
03/04/06	2	20.8	Start
03/04/06	2	28.1	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
03/04/06	3	41.5	Start
03/04/06	3	52.8	End

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
03/03/06	4	26.1	Start
03/03/06	4	28.5	End

FW-20B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
3/12/2006	1000

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/22/06	1	15.8	Start
02/22/06	1	12.9	End
03/09/06	1	35	Start
03/09/06	1	45	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/22/06	2	37.2	Start
02/22/06	2	19.4	End
03/09/06	2	12.7	Start
03/09/06	2	16	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/21/06	3	239	Start
02/21/06	3	30	End
02/23/06	3	16	Start
02/23/06	3	31.6	End
03/09/06	3	4.2	Start
03/09/06	3	4	End

Zone 4 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/18/06	4	2500	Start
02/18/06	4	2500	End
02/19/06	4	95	Start
02/19/06	4	49	End
02/20/06	4	48	Start
02/20/06	4	21	End
03/08/06	4	0.32	Start
03/08/06	4	3	End

FW-21B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
3/16/2006	1000

Development Concentrations - All Zones			
Date	Zone	Concentration (mg/L)	Daily Start/End
02/20/06	All	52	Start
02/21/06	All	21	Start
02/21/06	All	46	End
02/22/06	All	98	End
02/25/06	All	17	End
02/26/06	All	14	End
02/27/06	All	13	End
02/28/06	All	21	End
03/01/06	All	53	End
03/02/06	All	55	End
03/03/06	All	45	End

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
03/09/06	1	12.9	Start
03/10/06	1	35.9	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
03/08/06	2	22.5	Start
03/09/06	2	37.6	Start
03/09/06	2	31.6	End
03/10/06	2	48.6	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
03/08/06	3	22.5	Start
03/09/06	3	31.6	End

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
03/07/06	4	47.4	Start
03/08/06	4	26.9	Start
03/08/06	4	39.9	End
03/09/06	4	53.8	End

FW-22B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
4/25/2006	1000

Development Concentrations - All Zones			
Date	Zone	Concentration (mg/L)	Daily Start/End
04/01/06	All	830	Start
04/01/06	All	133	End
04/02/06	All	55	Start
04/02/06	All	29	End
04/03/06	All	13	Start
04/03/06	All	24	End
04/04/06	All	13	Start
04/04/06	All	16	End

Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
04/21/06	1	0.85	Start
04/21/06	1	15.9	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
04/20/06	2	35.9	Start
04/20/06	2	34.8	End
04/21/06	2	11.2	Start
04/21/06	2	22.7	End

Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
04/19/06	3	25.7	Start
04/19/06	3	34.1	End
04/20/06	3	5.7	Start
04/20/06	3	32.7	End

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
04/18/06	4	4.7	Start
04/18/06	4	23.6	End
04/19/06	4	2.5	Start
04/19/06	4	33.5	End

FW-23B Bromide Injection and Development Concentrations

Injected Concentrtion	
Date	Concentration (mg/L)
12/8/2005	1000
4/25/2006	1000

Development Concentrations - All Zones			
Date	Zone	Concentration (mg/L)	Daily Start/End
03/30/06	All	1,530	Start
03/30/06	All	28	End
03/31/06	All	39	Start
03/31/06	All	10	End
04/01/06	All	15	Start
04/01/06	All	14	End
04/02/06	All	3	Start
04/02/06	All	8	End

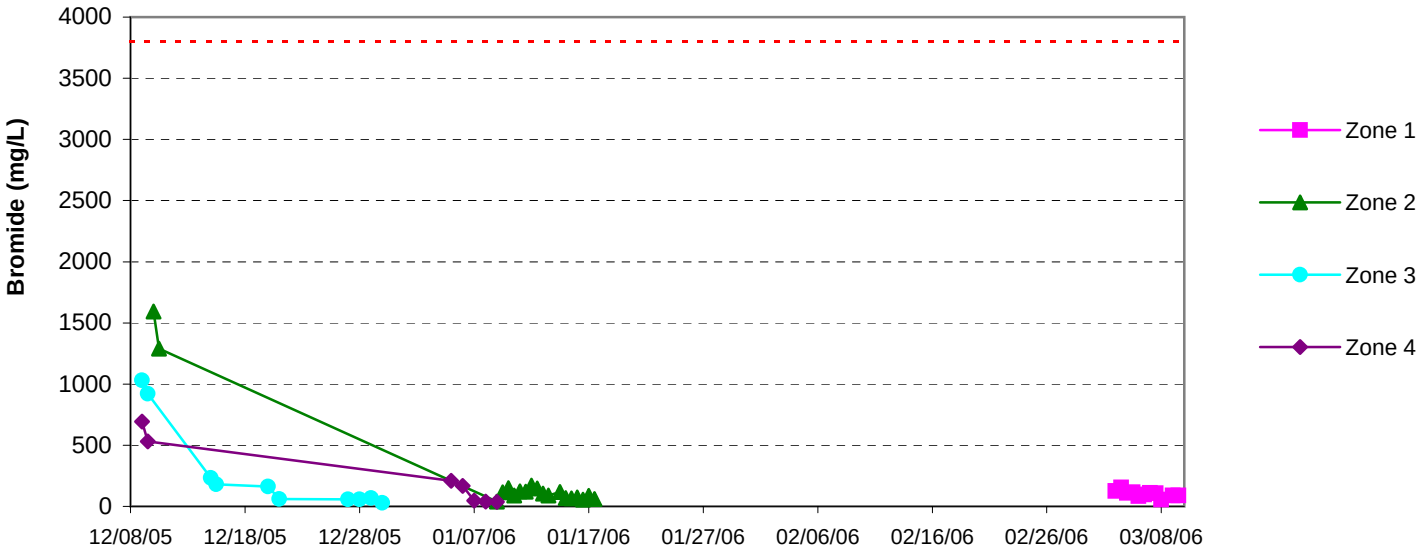
Zone 1 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
04/21/06	1	0.13	Start
04/21/06	1	2	End

Zone 2 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
04/20/06	2	11.7	Start
04/20/06	2	18.8	End
04/21/06	2	8.1	Start
04/21/06	2	3.9	End

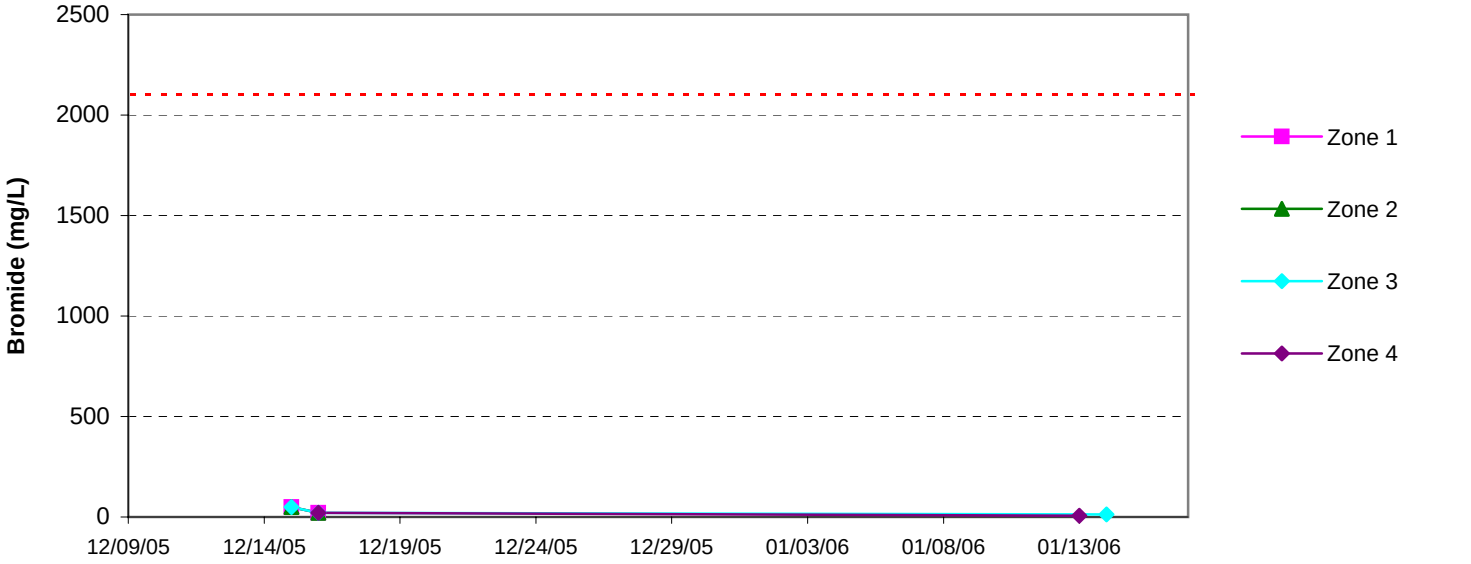
Zone 3 Development Concentrations			
Date	Zone	Concentration (mg/L)	Daily Start/End
04/19/06	3	8.4	Start
04/19/06	3	19.9	End
04/20/06	3	4.6	Start
04/20/06	3	18.8	End

Zone 4 Development Concentrations			
Date	Zone	Concentration	Daily Start/End
04/18/06	4	2.3	Start
04/18/06	4	14	End
04/19/06	4	4.5	Start
04/19/06	4	18.9	End

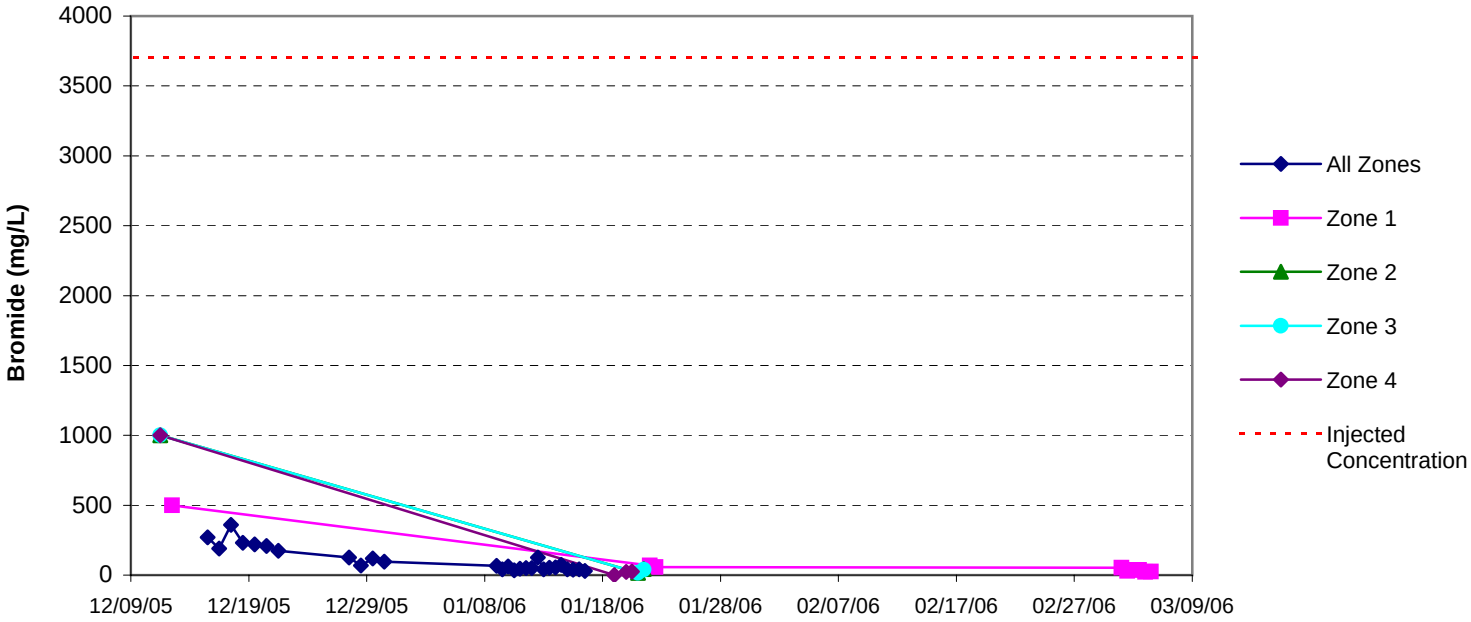
FW-10B Development Bromide Concentration



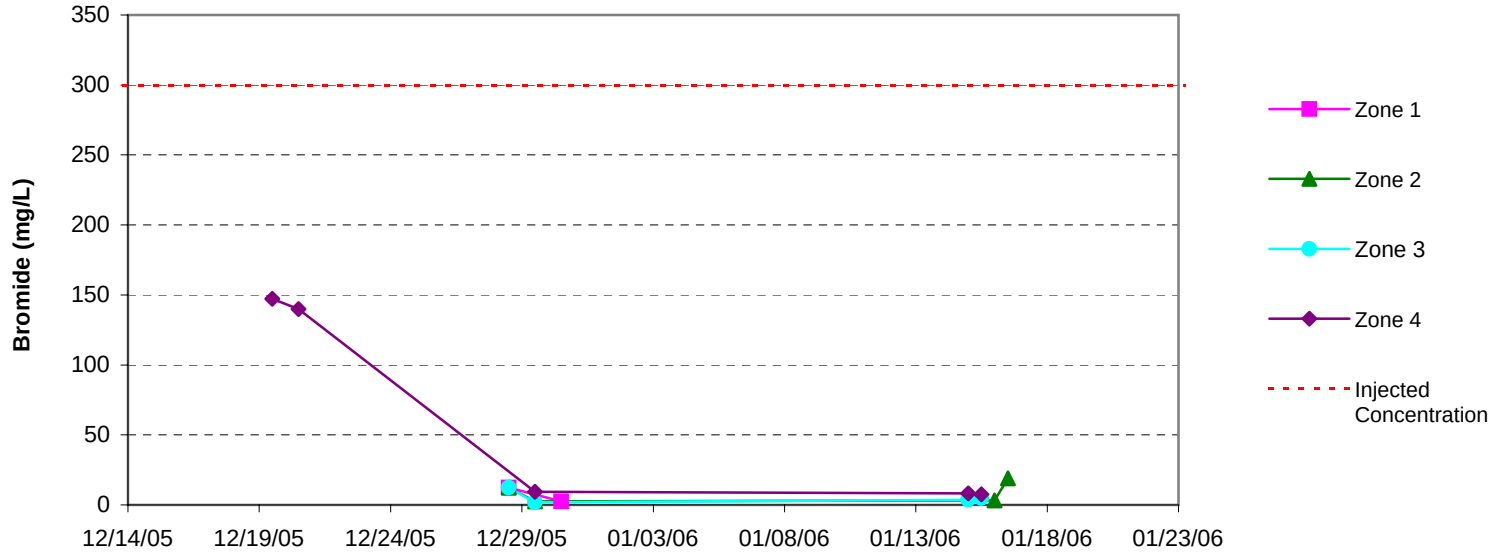
FW-11B Development Bromide Concentration



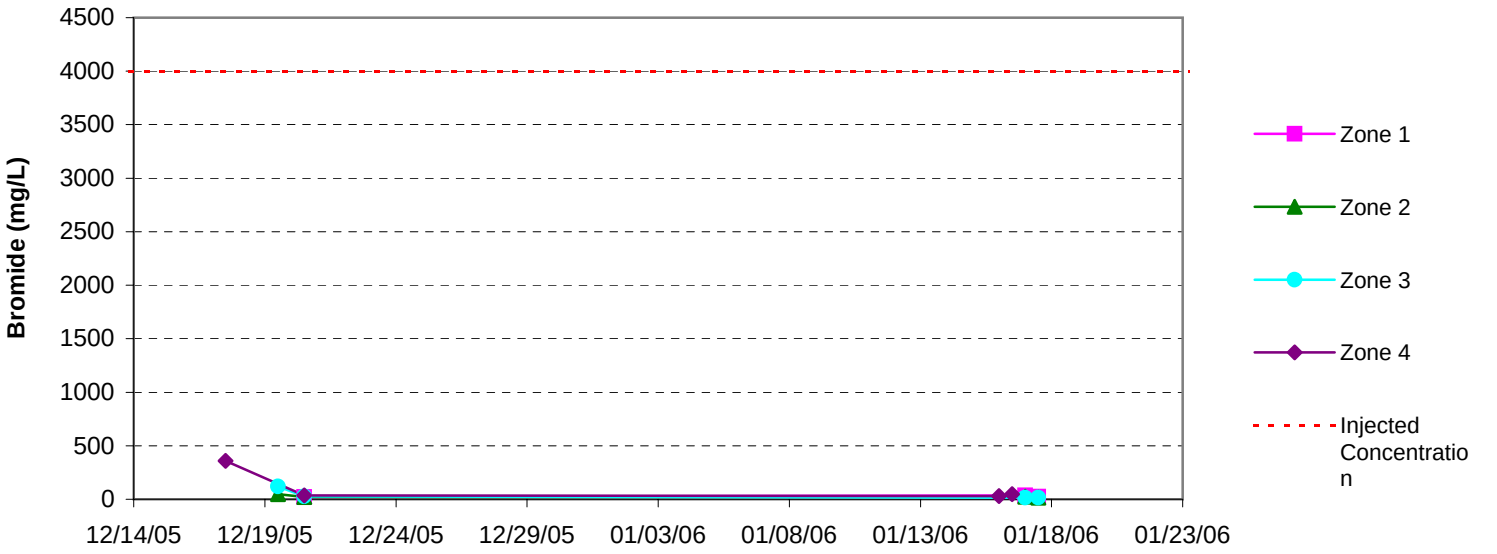
FW-12B Development Bromide Concentration



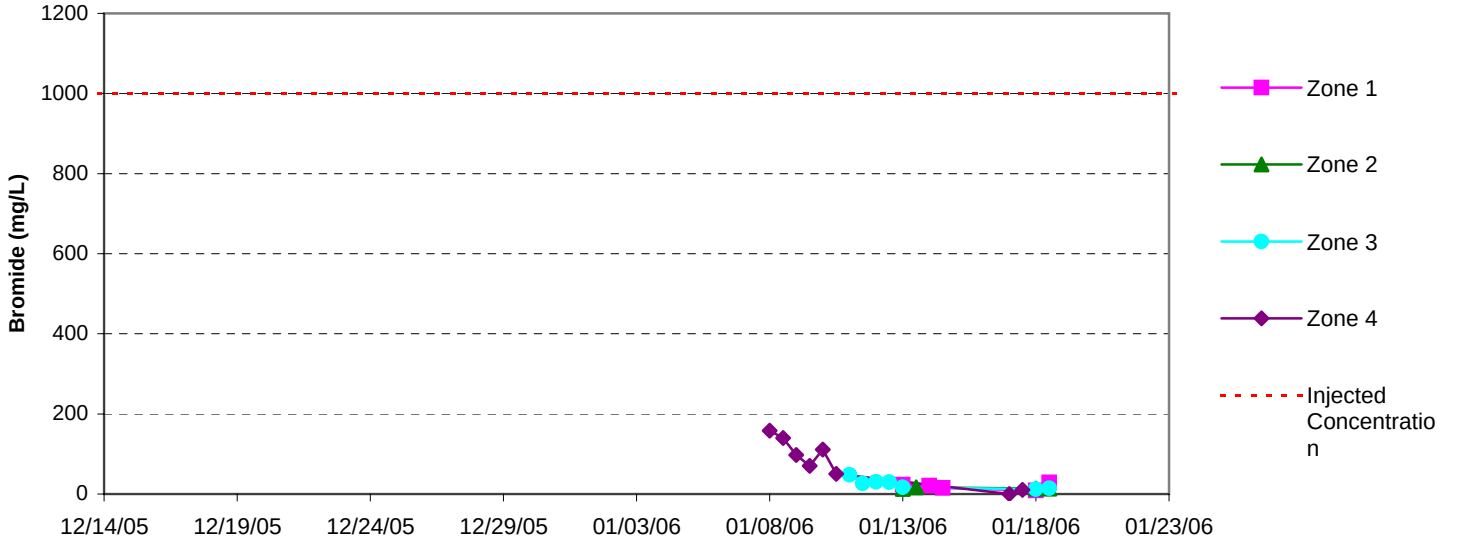
FW-13B Development Bromide Concentration

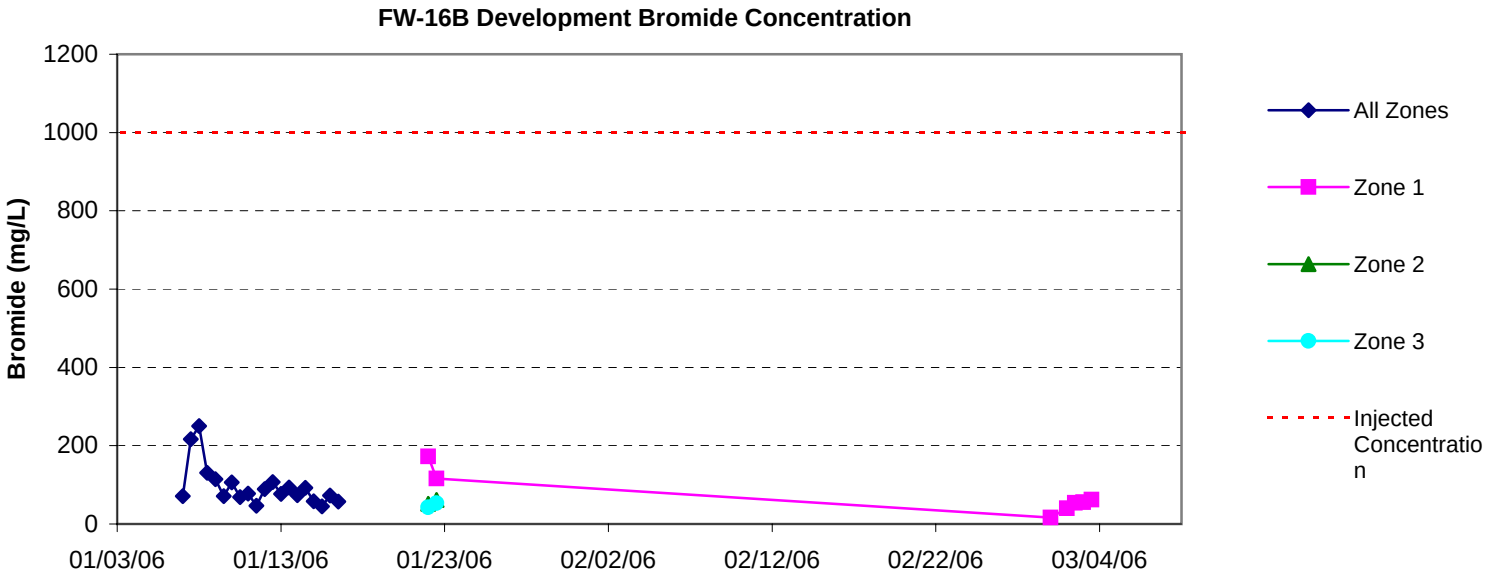


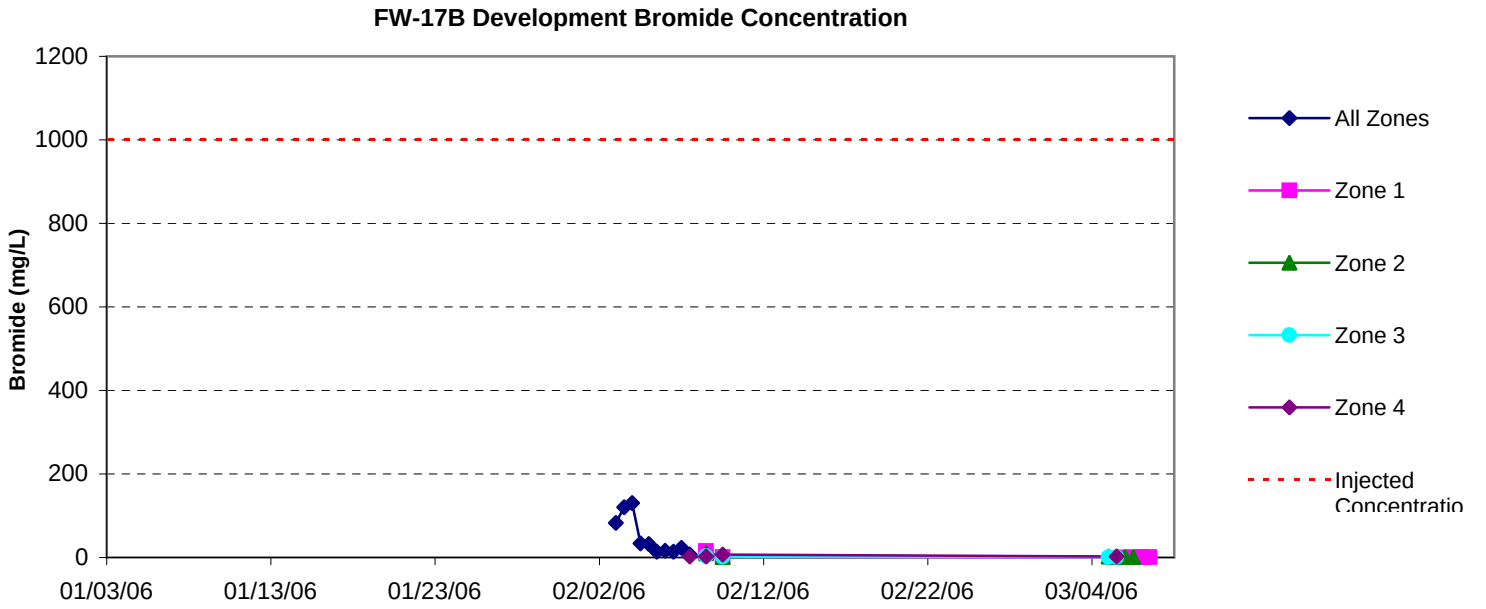
FW-14B Development Bromide Concentration

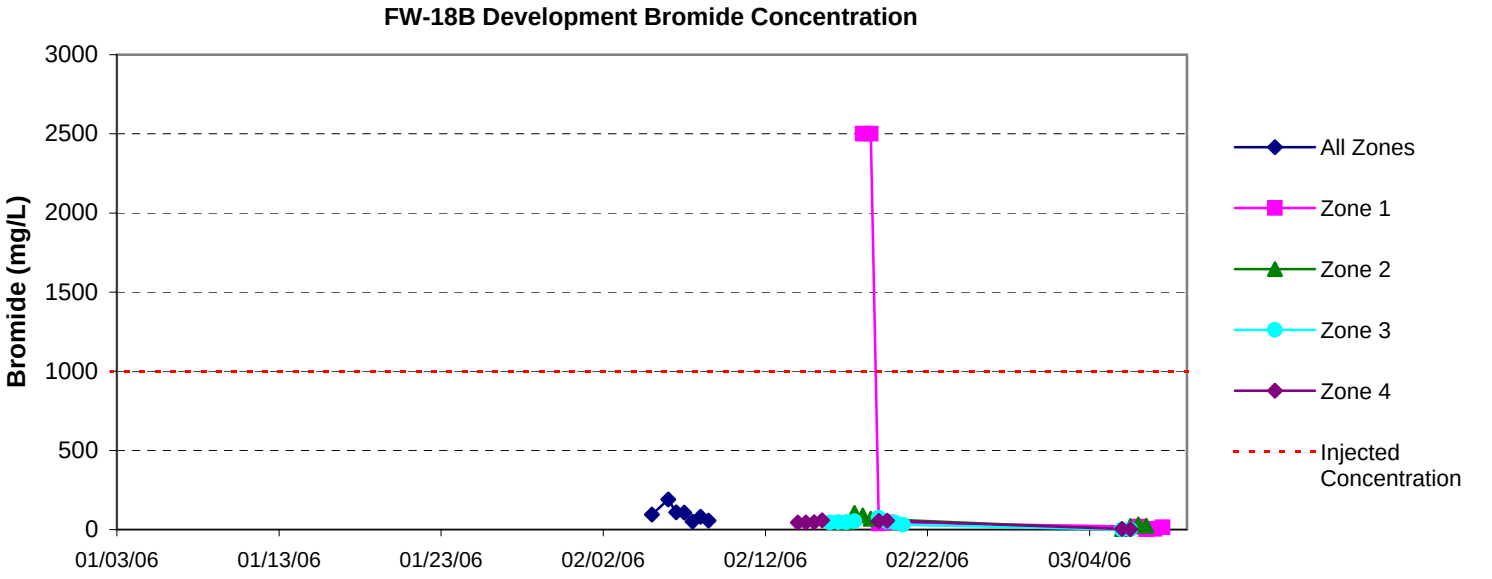


FW-15B Development Bromide Concentration

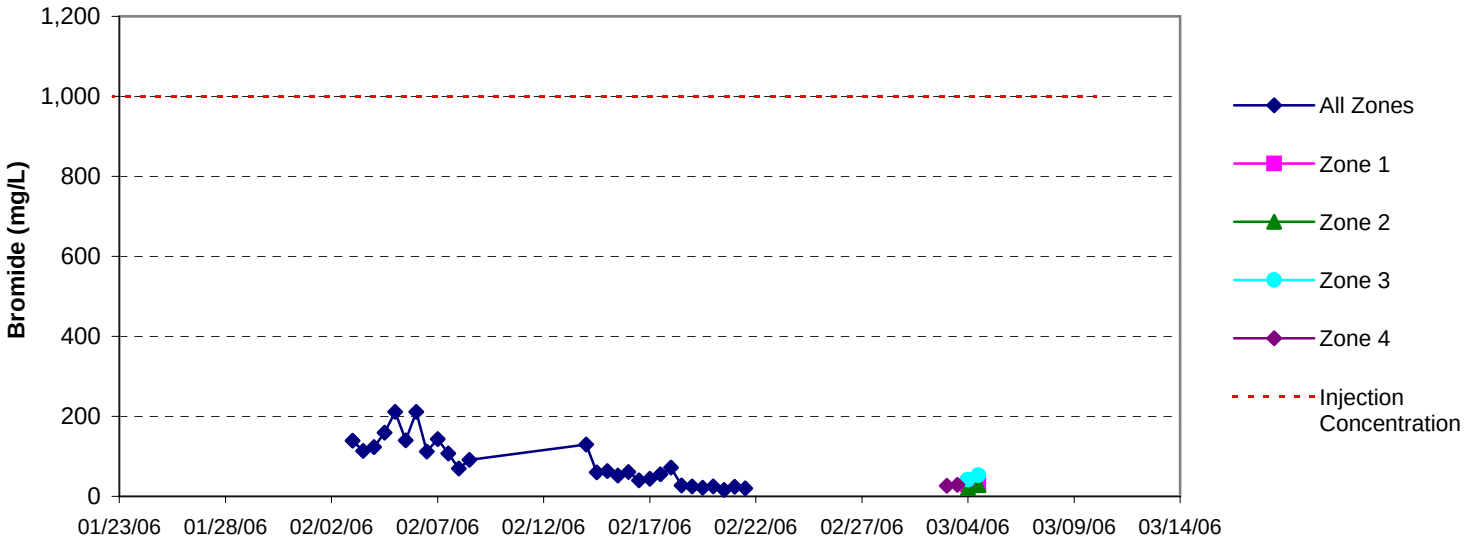



FW-16B Development Bromide Concentration
Bromide (mg/L)
1200
1000
800
600
400
200
0
01/03/06
01/13/06
01/23/06
02/02/06
02/12/06
02/22/06
03/04/06
All Zones
Zone 1
Zone 2
Zone 3
Injected Concentratio n

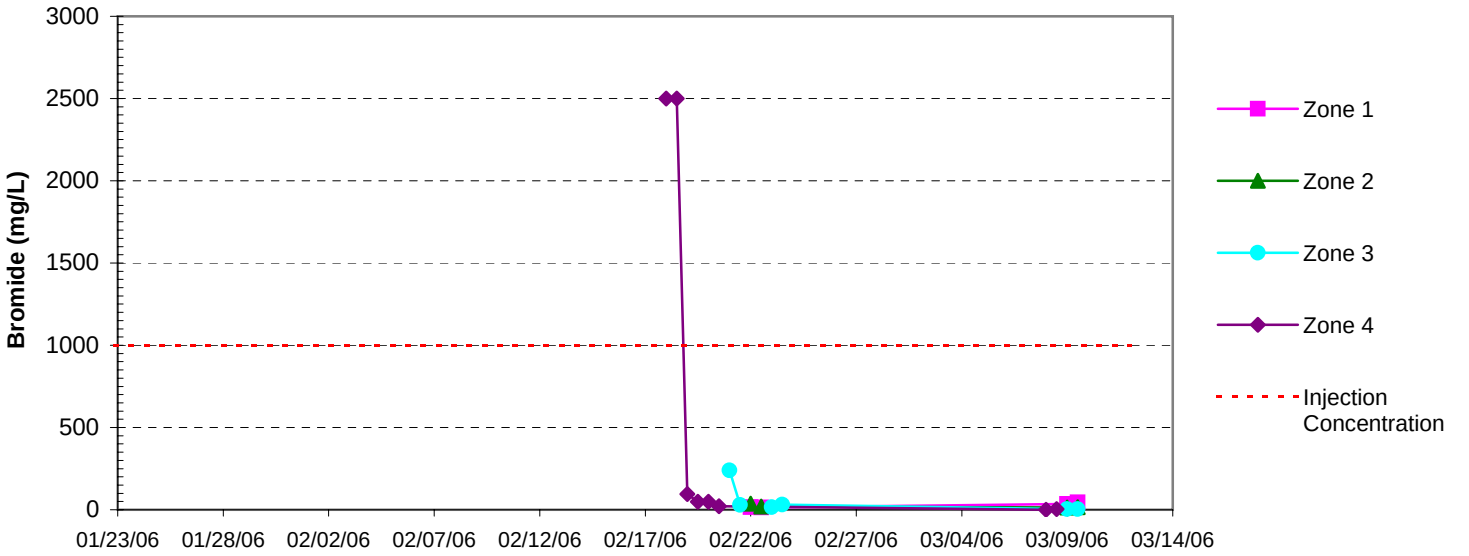

FW-17B Development Bromide Concentration
Bromide (mg/L)
1200
1000
800
600
400
200
0
01/03/06
01/13/06
01/23/06
02/02/06
02/12/06
02/22/06
03/04/06
All Zones
Zone 1
Zone 2
Zone 3
Zone 4
Injected Concentratio


FW-18B Development Bromide Concentration
Bromide (mg/L)
3000
2500
2000
1500
1000
500
0
01/03/06
01/13/06
01/23/06
02/02/06
02/12/06
02/22/06
03/04/06
All Zones
Zone 1
Zone 2
Zone 3
Zone 4
Injected Concentration

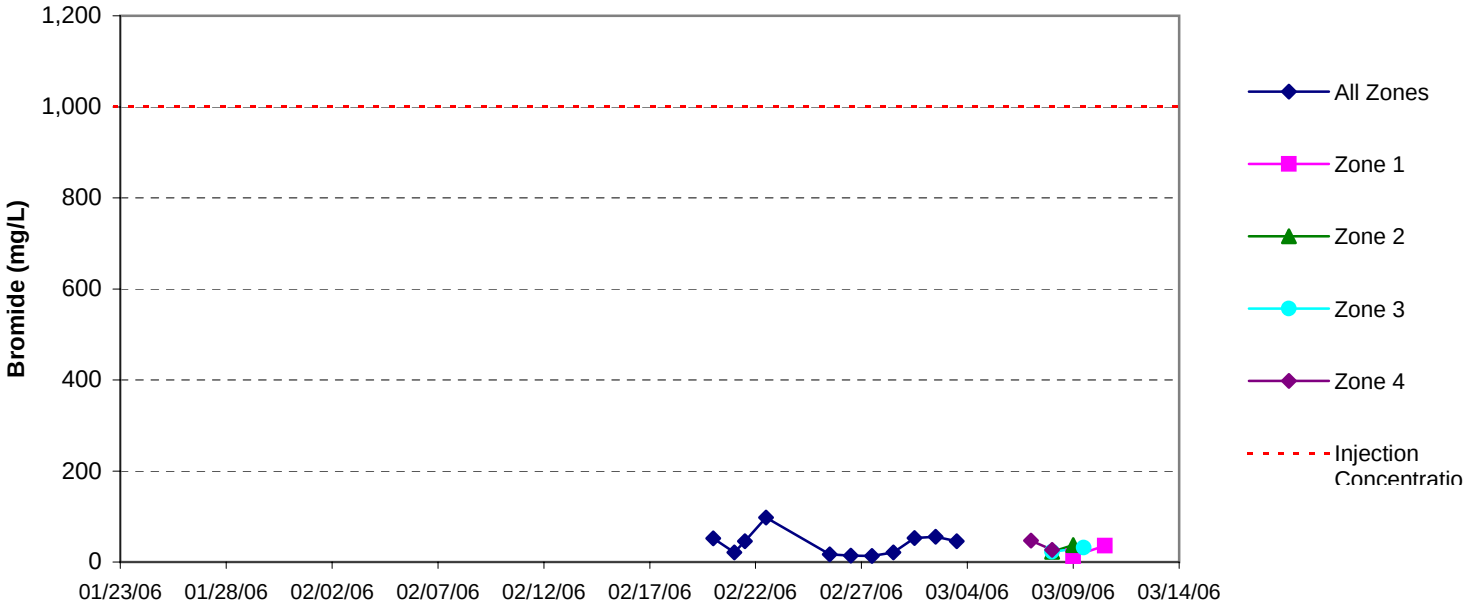
FW-19B Development Bromide Concentration



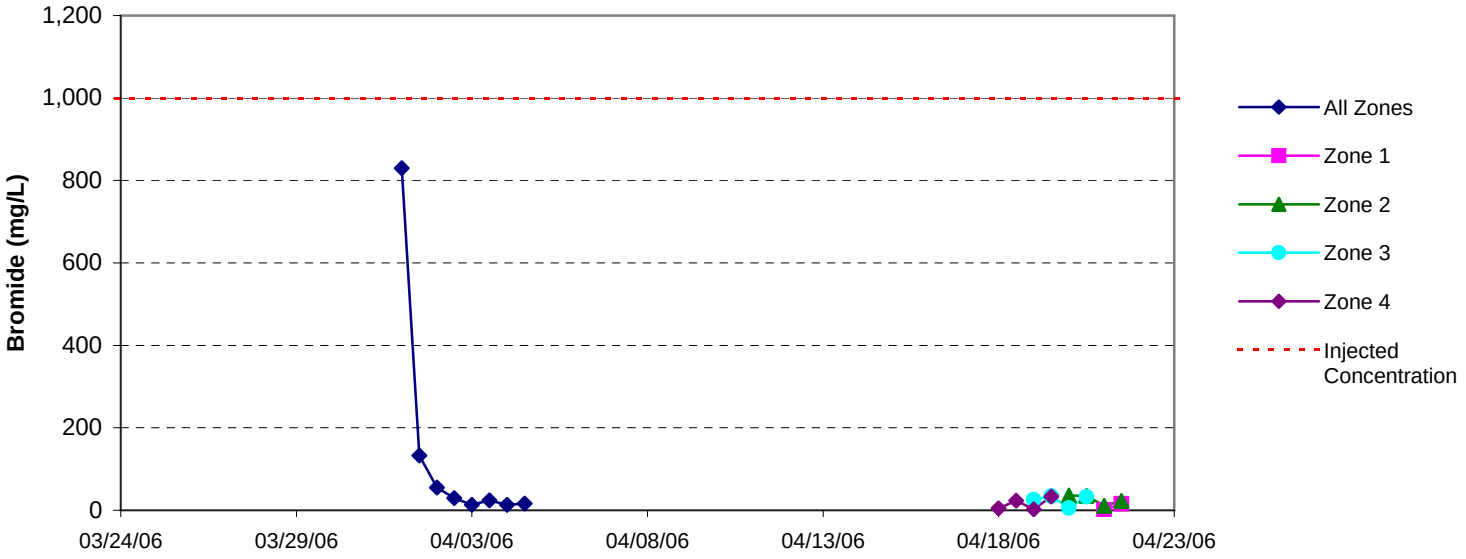
FW-20B Development Bromide Concentration



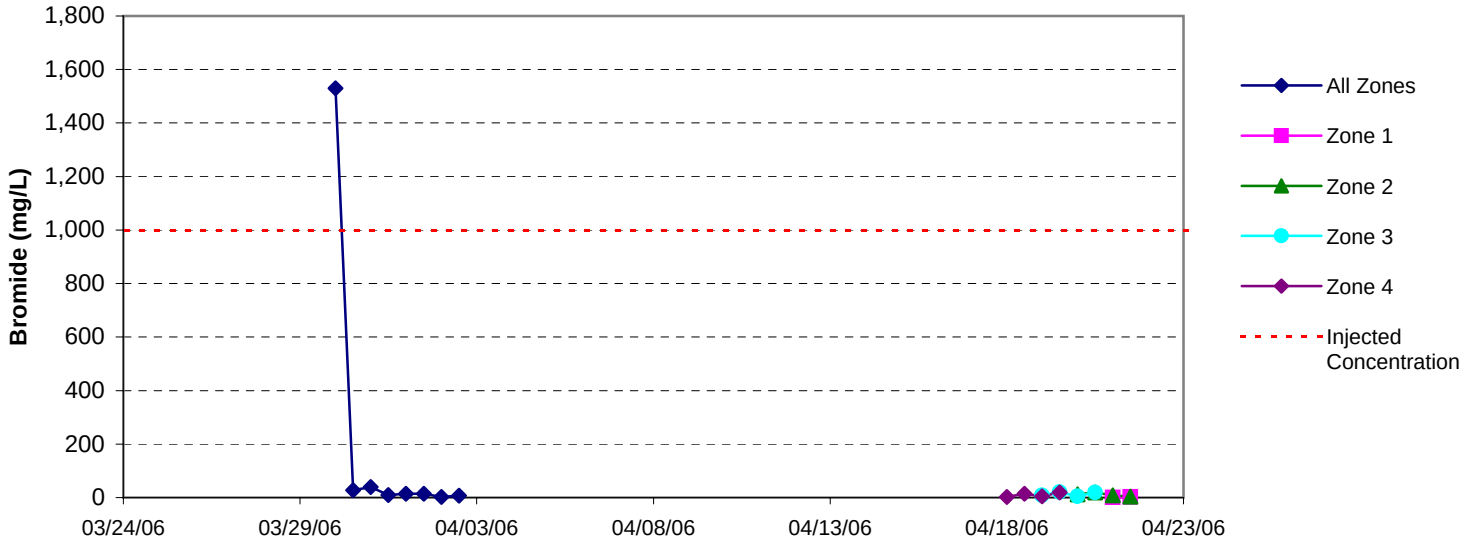
FW-21B Development Bromide Concentration



FW-22B Development Bromide Concentration



FW-23B Development Bromide Concentration



WELL DEVELOPMENT FORM KOPPERS SITE, UPPER FL[illegible] AN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-10B
Date: 12/15/05
Well Diameter (in ID): Westbay System installed
Method of Development: ~~Waterra~~ Waterra Pump

Total Well Depth (ft bgs): ~235
Initial Depth to Water (ft bgs): 135.12 Time: 16:40
Initial Water Column (ft): ~100.12

Recorded by: D. Bohmann Sheet 1 of ___
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): ___

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other pH	other Cond. (mS/m)	other ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3	17:03	17:19		~150	NA		1.78	166	232	8.03	76.2	-543	DO = 0.27 mg/L
		17:24				75		79.8	207	7.92	73.8	-510	0.16 mg/L
		17:29				90		118	197.5	7.88	73.0	-484	0.12 mg/L
		17:34				105		112	188.1	7.85	72.9	-469	0.10 mg/L
		17:39	17:41			120		96.8	181.5	7.82	72.6	-460	0.09 mg/L Breaker tripped on generator due to rain.
	1340	1345			12-20-05	0		34.0	162.5	—	—	—	12-20-05
		1423						202	91.9				
		1505						Err1	73.8				Turbidity Not readable
		1625						117	74.7				
		1740				300		89.9	61.6				300 gallon tank full
		1902	1905			425		42.1	64.7				Shutdown
	12/21	105			12-21-05								
	0925		0700			30							12-21-05
	0820												Pumping started. New tank.
		0900						36.2	60.4				
		1002						20.9	56.0				
			1035										250 gallon tank full. Pumping stopped
	1040												New tank 300 gal Poly
		1100						31.1	58.1				
		1150	1200			480		28.1	77.0				Pumping stopped in order for
													Prosonic to empty all tanks
					SAM								

1025

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLO[illegible]AN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW103 | Total Well Depth (ft bgs): 240.6 | Recorded by: S. McGuire | Sheet ___ of ___

Date: 12-27-05 | Initial Depth to Water (ft bgs): ___ Time: ___ | Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10

Well Diameter (in ID): 4" / Westbay | Initial Water Column (ft): ___ | Initial Casing Volume (gal): ___

Method of Development: Waterra Pump

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3	1230	1355				250		6.99	58.2				
		1515	1515			500		6.71	68.2				shut down. Tanks full and
					12-28-05								Generator requires fuel
	0645	0830				250		53.1	56.7				
		~~1024~~				375		63.7	57.9				
		1115	1120			425		69.3	65.3				Pump stopped. screws missing on watera arm.
	1200	1230				500		57.0	64.0				
		1330				600		60.3	55.4				
		1430				700		50	44.5				
		1530				775		57.7	46.2				
		1605	1605			850		56.5	49.6				Pumping stopped for the day
					12-29-05								
	0605	0710	0715			75	2-3	62.1	66.8				Tubing cracked
	0800	0830				125		62.9	65.2				
		0900				200		8.75	45.9				
		1040				375		5.82	44.7				
		1145			500	~~425~~		16.4	40.6				
		1250			625	500 slow		18.9	32.9				
		1350				750		14.8	40.2				
		1450				800		8.05	38.0				
		1545	1550			1000		6.44	28.0				stopped to empty tanks
				slow									

DEPTH (TOC)
154.7
~~164.4~~
~~174.9~~
~~184.7~~
195.1
~~204.7~~
~~215.2~~
~~225~~
240.6

① ② ③ ④

2350

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLC** **AN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW10B
Date: 12-30-05
Well Diameter (in ID): 4" / Westbay
Method of Development: Watera Pump

Total Well Depth (ft bgs): 240.6
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: S. McGuire Sheet ___ of ___
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3	—	—	1550	—	12-29-05	1000	—	6.44	28.0	—	—	—	
↓	0615	0740			12-30-05	200		13.3	46.0				
		0845				250		10.11	40.4				increased flow rate
		0945				400		7.83	38.7				
↓		1050	1100			~~500~~		7.51	42.6				Shut down to empty tanks/ End of shift
4	—	—	—		1-5-06	—	—						
↓	1330												Development started
		1400				50	1.7	29.9	208				
		1530				200		13.0	142.1				
		1700	1730			~~400~~ 500		5.99	86.0				
	—	—	—		1-6 06	—	—						
	0745	0800				65		14.1	166.2				Development started
		0900				175		9.70	96.6				
		1000				300		7.10	81.4				
		1100				425		4.00	69.1				1200 Switched to 500 gal tank
		1340				700		3.72	48.5				
		1500				1000							500 gal poly tank full. Switched to 250
		1545				1065		2.38	43.2				
↓		1706				1250		3.47	48.8				
				SUM									

3250

WELL DEVELOPMENT FORM KOPPERS SITE, UPPER FLOR N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW10B
Date: 1-7-06
Well Diameter (in ID): Westbay
Method of Development: Waterra Pump

Total Well Depth (ft bgs): 240.6
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: S. McGuire Sheet ___ of ___
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
4	0645	0735			1-7-06	0	1.7	2.91	47.9				1250 from yesterday's total pumped
		0930						3.72	70.0				
		1028											550 gallon tank at 450 - 250
		1200				450							started (1200) 250 gal tank full start
		1350				950		2.41	47.5				new 550
		1700				1350		2.10	35.2				
	0656	—	—	—	1-8-06	0	—	—	—	—	—	—	Pump started
		0730				200							550 gallon tank has 500 gal. 250
		1035				425		2.72	39.8				gal tank started
		1290				875		2.16	42.3				+ 250 gal tank and 200 gal of
		1310				925							550 gal tank - (1310) Bill pumping
		1445				1075	Bill	Pumped off 150		gal from Tank			250 gallons from 550 gal tank
		1450				1,100		3.41	42.5				
		1630				1,300		3.06	40.2				200 gallons in 550 gal tank
		1700				1,550		2.89	36.6				250 gallons in 550 gal tank. Emptied
	~~0620~~ 0620	—	—	—	1-9-06	0	—	—	—	—	—	—	for the day
	0620	0840						1.97	35.8				Pump started 1-9-06
↓		0915	0915			250	1.7	2.70	39.7				shut down. Close 4th screen - open 2nd screen
2	1045	1048						4.22	~~40.5~~ 40.5				4th screen closed. 2nd open. Pump started
		1150				500		3.68	~~84.1~~ 84.1				Generator fueled
		1400				1000		2.42	~~130.6~~ 130.6				
		1500				1,250		~~98.9~~	~~114.8~~				550 gallon tank full
		1715				1,900		98.9	114.8				
		—	—	—	—	—	—	—	—	—	—	—	

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLOI N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW10B
Date: 1-10-06
Well Diameter (in ID): Westbay
Method of Development: Waterra Pump

Total Well Depth (ft bgs): 240.6
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: S. McGuire Sheet ___ of ___
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measure-ment Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters					Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
								Turbidity (NTU)	Bromide (mg/l)	other	other	other	
2					1-10-06		1.8-2						
	0620	0945				300		110.2	148.8				Pump started.
		1300				1000		68.0	162.5				
		1500				1,150							
		1600				1,275		199	91.6				
		1706	1706			1,525		183	87.7				pump stopped. End of day
2					1-11-06								Waterra pump will be moved to
	0730	0915				250		307	123.2				FW11B tomorrow.
		1430				900		15.1	105.7				
		1710	1710			1,100		9.94	121.1				Shut down

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLO \N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-10B
Date: 1-12-06 → 01-14-06
Well Diameter (in ID): 2 in
Method of Development: WATTERRA PUMP.

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: SILLMAN Sheet 1 of 1
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measure-ment Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
2	0725	0825				200		8.44	169.5				CALIBRATED 0805 SLOPE = -34
		0937	0945			~~200~~	425	3.12	153.0				
2	~1700~	1724	1728			~~400~~ 625		19.5	147.0				CALIBRATED 1220 SLOPE = -33
													Cumulative purge vol = 625 gal on 1-12-06
2	0850	0852				0		15.4	103.4				CALIBRATED 0735 SLOPE = -35
2	~~1020~~	1020				375		7.08	106.1				
2		1217	1345			780		5.56	106.4				CALIBRATED 1225 SLOPE = -35
2	145	1435				1180		4.95	124.0				1345 STOPPED PUMP - BOTH TANKS FULL
2		1655	1655			1535		5.81	89.4				
								01/14/06					
2	1425					0							
2	~~1740~~	1740	1740			575		4.90	117.9				
													NOTE: 1-13-05 CHECKED INLET TO WATER TREATMENT - BOTH FLOWING OKAY. 1355

1-12-06
1-13-06
01-14-06

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLO[illegible]N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-10B
Date: 01-15-06
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra Pump

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: Behmann / Ullmann Sheet 1 of ___
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): _____

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
01-15-06	2	0840					0							Bromide meter calibration; slope = -55
			0925				100		2.67	67.8				
				1120			285							Arm on pump broken, shut down pump
	2	1403					285							Pump arm repaired, restart pump.
			1640				395		20.2	62.7				
			1800	1901			~~685~~ 690 (est)		13.4	65.5				Total purge volume today (1-15-06) = 690 gal
								01/16/06						
01-16-06	~~0852~~ 2	0850					0							
	2		0919				75		67.5	73.0				
		(NR) 1029	~~0946~~				175		23.2	85.9				
			1245				500		10-7	59.5				
			1648	1648			1,365		6.81	55.3				
								01/17/06						
01-17-06	~~0900~~	0940	0950				25		20.4	87.0				
			1155				215		27.6	62.1				
			1255				350		111	59.9				

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-10B

Date: ~~3/4/06~~ (DSI) 3/4/06 → 3/6/06

Well Diameter (in ID): 2 inch

Method of Development:

Total Well Depth (ft TOC): _____

Initial Depth to Water (ft TOC): 133.90 Time: 9:05 on 3/2/06

Initial Water Column: Length _____ (ft); Volume _____ (gal)

Recorded by: _____ Sheet ____ of ____

Screen Lengths (ft): 1_____; 2_____; 3_____; 4_____

Top of Screen (ft TOC): 1_____; 2_____; 3_____; 4_____

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Incremental Time (min)	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Incremental Volume Purged (gal)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Level (ft TOC)	Water Quality Parameters: Turbidity (NTU)	Water Quality Parameters: Bromide (mg/l)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3/4/06	1	~~1~~ 1707						0	0					
			1714					4	4	~0.6		9.58	126.3	
			1812					86	90	1.5		7.63	154.4	
			1903	1905				55	145	1.0		6.23	152.2	
3/5/06	1	0818						0	145					
			0920					75	220	1.25		2.1	109.9	
			0945					30	250	1.1		2.3	116.9	switch tank
			1312					245	495	1.2		2.8	119.5	switch tank
			1705					255	750	1.1		1.3	97.8	switch tanks
			1858	1900				130	880	1.1		2.6	114.9	
3.6.06	1	0758						0	880				~~82.0~~	~~switch tanks~~
			0958					130	1,010	1.1		5.5	82.8	switch tanks
			1350					240	1,250					switch tanks
			1807	1810				225	1475	1.1		4.9	95.7	Generator was found out of gas, restarted.
3-7-06	1	0850						0	1475					
			1125					250	1725	1.6				switch tanks
			1228					70	1795	1.3		500	110.3	
			~~1620~~					~~300~~	2095	0.9				switch tanks
			1810					125	2220	1.1		90	106.8	
				1857				50	2270	1.1				
3.8.06	1	0745						0	2270					
			0800					15	2285	1.0		~~24~~ (DSI) ~~56.3~~	56.2	
			0910					65	2350	1.3				switch tanks
			1315					250	2600	1.0				switch tanks

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-108 | Total Well Depth (ft TOC): | Recorded by: P. Bohmann | Sheet 2 of

Date: 3/4/06 → | Initial Depth to Water (ft TOC): | Time: | Screen Lengths (ft): 1 ; 2 ; 3 ; 4

Well Diameter (in ID): 2inch Westbay | Initial Water Column: Length (ft); Volume (gal) | Top of Screen (ft TOC): 1 ; 2 ; 3 ; 4

Method of Development: Waterra Pump

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Incremental Time (min)	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Incremental Volume Purged (gal)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Level (ft TOC)	Water Quality Parameters		Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
											Turbidity (NTU)	Bromide (mg/l)	
1		1653					240	2840	1.1				Switch tanks
			1910				150	2990	1.1				
1	0733						0	2990					
		0917					130	3120	1.2				Switch tanks
		1141					260	3380	1.2		9.2	88.5	
		~~1712~~					~~3605~~	~~3605~~					
		1222					50	3430	1.2				Switch tanks
		1530					200	3630	1.1		12.9	63.6	Switch tanks
		1835					215	3845	1.2			82.2	
		1955	1955				100	3945	1.2			~~89.3~~	

3-9-06

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLO[illegible]N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-11B
Date: 1-13-06
Well Diameter (In ID): 2 inch Westbay
Method of Development: Waterra Pump

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D.Buhmann/S. Ullmann Sheet 1 of 4
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____
Initial Casing Volume (gal): _____

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
01/13/06	4	1718	1735				50		24.1	6.3				
				1743			80							
								- 01/14/06 -						
01/14/06	4	0725												
	4	0730	CALIBRATE HORIBA U-22-2					[pH = 4.0 @ 25°C] 3.98					TOT.	VOL = 80 (PUMPED FROM 1-13-06)
								COND = 0.445 S/m						
								ORP = 292 mV						WL = 131.0 FT TOC
								TEMP = 12.69°C						PORT OPENING = 1 7/8 IN.
								TURB = 0.1 NTU						
	4	0740	0740	pH = 5.85	COND = 48.0 mS		ORP = 233 mV	TEMP = 18.55°C	TURB = 15.8 NTU	TOTAL VOL = 83 GAL				
	4	0745		pH = 7.59	COND = 43.7 mS		ORP = -130 mV	TEMP = 20.06°C	TURB = 14.0 NTU	DO = 1.61 mg/L				
	4	0750		pH = 7.77	COND = 42.2 mS		ORP = -200 mV	TEMP = 21.64°C	TURB = 16.7 NTU	DO = 1.71 mg/L				VOL = 90
	4	0800		pH = 7.90	COND = 43.3 mS		ORP = -130 mV	TEMP = 21.64°C	TURB = 41.6 NTU	DO = 1.66 mg/L				VOL = 100 95
	4	0805		pH = 7.93	COND = 43.4 mS		ORP = -121 mV	TEMP = 22.21°C	TURB = 47.5 NTU	DO = 1.94 mg/L				VOL = 100
	4	0810		pH = 7.94	COND = 43.5 mS		ORP = -118 mV	TEMP = 21.90°C	TURB = 46.3 NTU	DO = 1.55 mg/L				VOL = 105
		0813	TURNED OFF PUMP.											
														TOTAL VOLUME FOR ZONE 4 = 105

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLOR N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-11B
Date: 1-14-05
Well Diameter (in ID): 2IN (WEST BAY)
Total Well Depth (ft bgs):
Initial Depth to Water (ft bgs): Time:
Initial Water Column (ft):
Recorded by: S. HILLMANN Sheet 2 of 4
Screen Lengths (ft): 1 ; 2 ; 3 ; 4
Initial Casing Volume (gal):
Method of Development: WATERRA PUMP - FINAL DEVELOPMENT.

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
0940	OPEN	PORT TO ZONE 3. WL = 109.16 FT TOC BEFORE OPENING PORT.											
0955						WL = 132.22 FT TOC AFTER OPENING PORT							
3	0959	START PUMP AT INITIAL TANK VOL = 105 GAL											
3	1004	pH: 8.16 COND: 43.0mS ORP: 32mV TEMP: 17.49°C TURB: 42.5 NTU DO: 10.31 mg/L VOL = 115 GAL											Tank Volume used to track Purge volumes
		BROMIDE: 4.3 mg/L											
3	1010	pH: 8.14 COND = 40.4 mS ORP = -132mV TEMP = 22.14°C TURB = 919 NTU DO = 2.31 mg/L VOL = 125 GAL											
3	1015	pH: 8.08 COND: 43.7mS ORP: -151mV TEMP = 23.49°C TURB = 283 NTU DO: 1.60 mg/L VOL = ~~107~~ 137 GAL SKIL.											
3	1020	pH: 7.85 COND: 44.0mS ORP: -150mV TEMP: 23.68°C TURB: 135 NTU DO: 2.35 mg/L VOL = 155 GAL											
		H_2S ODOR											
3	1025	pH: 7.90 COND: 44.8mS ORP: -153mV TEMP: 23.71°C TURB: 148 NTU DO: 1.75 mg/L VOL: 175 GAL BROMIDE = 12.9 mg/L											
3	1031	pH: 7.89 COND: 44.8mS ORP: -145mV TEMP: 22.71°C TURB: 86 NTU DO: 2.54 mg/L VOL = 177 GAL											
3	1037	pH: 7.91 COND: 44.6mS ORP: -135mV TEMP: 21.44°C TURB: 64.1 NTU DO: 3.89 mg/L VOL: 178 GAL.											
3	1044	pH: 7.86 COND: 44.6mS ORP: -133mV TEMP: 20.50°C TURB: 52.2 NTU DO: 3.39 mg/L VOL: 180 GAL.											
													TOTAL VOLUME FOR ZONE 3 = 75 GAL.
	1120	DRILLERS EMPTY TANK											

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLO[illegible]N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-11B
Date: 1-14-06
Well Diameter (in ID): 2-inch Westbay Well
Method of Development: Waterra Pump (Final Development)

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: S. WILLMANN. Sheet 3 of 4.
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
2	1142	START		PUMPING ZONE 2		[INITIAL TANK MEAS. = 5GAL]							
2	1147	pH: 7.95		COND: 41.2mS		ORP: -166mV		TEMP: 23.10°C	TURB: 707 NTU				DO: 1.55 mg/L CUM. TOTAL VOL (ZONE 2): 20GAL
		pH:		COND:		ORP:		TEMP:		TURB			DO: CUM. VOL:
~~2~~	~~1151~~	~~STOP~~		~~PUMP~~									
2	1151	STOP		PUMPING BRIEFLY TO FIX PUMP									
2	1153	pH: 7.94		COND: 43.6mS		ORP: -138mV		TEMP: 22.82°C	TURB >1000 NTU				DO: 1.28 mg/L CUM VOL: 40GAL
2	1158	pH: 7.84		COND: 44.4mS		ORP: -125mV		TEMP: 23.37°C	TURB: 1055 NTU				DO: 2.34 mg/L CUM VOL: 55GAL
2	1203	pH: 7.83		COND: 44.7mS		ORP: -125mV		TEMP: 23.47°C	TURB: 336 NTU				DO: 1.90 mg/L CUM VOL: 70 GAL
~~2~~	~~1208~~	~~pH:~~		H_2S ODOR DETECTED									
2	1208	pH: 7.84		COND: 45.2mS		ORP: -125mV		TEMP: 23.68°C	TURB: 165 NTU				DO: 2.05 mg/L CUM VOL: 82GAL
													TOTAL PURGE VOL FOR [2] = 82GAL

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLO[illegible]N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-11B
Date: 1-14-06
Well Diameter (In ID): 2 IN. WESTBAY WELL
Method of Development: WATERRA PUMP - FINAL DEVELOPMENT

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: S. HILLMANN Sheet 4 of 4
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measure-ment Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
1	1317	START PUMPING ZONE 1					[INITIAL TANK VOL = 87 GAL]						
1	1319	pH=7.83	COND=40.1mS	ORP=-6mV	TEMP=21.61°C	TURB=269NTU	DO=6.36mg/L	CUM VOL=13GAL					
1	1324	pH=8.05	COND=35.4mS	ORP=-152mV	TEMP=23.52°C	TURB=505NTU	DO=3.23mg/L	CUM VOL=38GAL					
1	1330	pH=8.23	COND=36.4mS	ORP=-164mV	TEMP=23.23°C	TURB=300NTU	DO=3.10mg/L	CUM VOL=63GAL					
1	1335	pH=8.17	COND=37.2mS	ORP=-183mV	TEMP=23.54°C	TURB=191NTU	DO=2.37mg/L	CUM VOL=75GAL.					
1	1338	pH=8.14	COND=38.2mS	ORP=-196mV	TEMP=23.71°C	TURB=773NTU	DO=1.24mg/L	CUM VOL=93GAL					

WELL DEVELOPMENT FORM KOPPERS SITE, UPPER FLO[illegible]N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: EW-12 Total Well Depth (ft bgs): _____ Recorded by: _____ Sheet ____ of ____

Date: 1-19-06 Initial Depth to Water (ft bgs): _____ Time: _____ Screen Lengths (ft): 1____; 2____; 3____; 4____

Well Diameter (in ID): 2 inch Westbay Initial Water Column (ft): _____ Initial Casing Volume (gal): _____

Method of Development: Waterra pump

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	[illegible] depths (Cond)	Cum. Volume Purged (gal)	[illegible] (pH)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: TEMP	other: ORP	other: pH	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
1-19-06	4	1215					↓							
			1225	1315		11.4	10	8.0	33	0.75	22.02	86	8.60	
1-20-06	4	1350											[redacted]	
			1355			40.4	|	6.71	296	24	23.64	118	8.17	
			1420			40.7	|	6.00	999		25.04	-67	7.12	
			1495			41.6	↓	2.51	999	33	25.02	-168	7.65	
			1600	1605		41.9	50	5.15	999	25.5	24.48	-165	7.72	CLOUDY SKIES 60 GALLONS TOTAL
1-21-06	3	1020												
			1030			38.7	|	3.60	999	15	25.05	-106	7.97	
			1040			40.8	|	4.78	999		24.92	-148	7.46	
			1110			41.4	|	3.51	999	39.4	24.88	-183	7.73	
			1120			41.5	↓	3.62	537		24.93	-194	7.64	
			1130	1135		41.5	60	5.00	514		25.09	-189	7.65	60 GALLONS TOTAL
1-21-06	2	1325												
			1330		[redacted]	42.2	|	5.45	354	16.6	26.86	-149	7.93	
			1340		[redacted]	39.6	↓	3.31	441		26.20	-165	7.84	
			1350		[redacted]	45.6	25	1.50	999	32.7	25.60	-181	7.88	
		[redacted]		1415										Stopped Pump to help Bob setup 16
	2	1440	1441		[redacted]	45.4	|	5.62	999	27.9	28.26	-129	8.19	
			1450		[redacted]	46.3	|	3.50	999		25.66	-156	7.85	
			1500		[redacted]	46.9	↓	3.67	999	37.2	25.22	-168	7.71	
			1515		[redacted]	47.2	35	4.00	999	43.4	25.17	-167	7.70	60 GALLONS TOTAL
				1515										

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLOR[illegible]N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW12B Zone 1 | Total Well Depth (ft bgs): | Recorded by: BN | Sheet 1 of

Date: 1-22-06 | Initial Depth to Water (ft bgs): | Time: | Screen Lengths (ft): 1 ; 2 ; 3 ; 4

Well Diameter (in ID): 2" Vinyl Buy | Initial Water Column (ft): | Initial Casing Volume (gal):

Method of Development: Waterra

ORP (mV) Temp °C mS/m mg/L

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Cond.	other: D.O.	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
1	0755					0	0.6						
	~~0855~~ BN	0830		40	23.82	21	0.6	361.0	69.4	9.13	36.3	2.13	
		0915		-97	24.24	48	0.6	155.0	52.6	8.41	43.7	1.15	
		0940		-130	24.49	63	0.6	125.0	56.1	8.33	43.9	1.32	
		1025		-127	24.69	90	0.6	133.0	56.3	8.27	44.8	1.29	

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-12B
Date: 3/3/06
Well Diameter (in ID): 2 Inch Westbay well
Method of Development: Waterra Pump

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D. Pohlmann Sheet 1 of ____
Screen Lengths (ft): 1____; 2____; 3____; 4____
Initial Casing Volume (gal): _____

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other	other	other	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3-3-06	1	1740		1744			2							~~Pump~~ Generator ran out of gas.
	1	1805	1836				20	~0.7	3.15	52.5				
			2205	2208			165	~0.75	2.32	50.2				
3-4-06	1	0718					165							
			0830				200	~0.7	2.69	37.1				
				0937			240	~0.6						Stop pump to empty tank
	1	1000		1320			245							Pump was not generating water. Stopped
	1	1445					245							
			1817				460	1.0	3.07	51.1				
			1909	~~1920~~			500	1.0	3.89	57.8				
			2211	2211			675	1.0	2.92	37.6				
3-5-06	1	0745				(DJ)	~~765~~ 675							~~Switch tanks~~
			0913				765	1.0	2.3	23.2				Switch tanks
			1230				915	0.9	6.2	14.1				
			1445				995	1.0	6.1	11.5				Switch tank
			1905	1908			1,180	0.7	1.8	25.5				

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLO. .N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-13B
Date: 01-15-06
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra Pump - Final Development

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: _____ Sheet 1 of 1
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	~~K-Packer depths (ft bgs/ft bgs)~~ Cond (mS/cm)	Cum. Volume Purged (gal)	~~Pumping Rate Q (gpm)~~ Temp (C)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: DO	other: ORP	other: pH	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
(4)	12:05					0							
4	~~12:13~~		12:13			20							Stop pump to reconnect tubing
4	12:28	12:30	~~12:30~~ (DD)		42.5	25	24.11	>999		2.71	-156	7.31	
4		12:34			43.9	30	24.21	543		2.27	-158	7.30	
4		12:43			45.1	50	24.23	192		2.48	-166	7.27	
4		12:48			44.6	65	24.20	107		2.09	-173	7.27	
4		12:53			45.1	~~80~~	24.26	94	8.3	1.71	-178	7.26	
4			12:55										Stop pump to reconnect tubing
4	13:20	13:23			46.4	85	23.76	69.1		1.51	-162	7.37	
4		13:28			46.1	95	23.82	64.4	7.4	0.83	-169	7.31	
4		13:33			46.0	105	23.01	58.7	7.6	0.91	-165	7.35	
4		13:38	13:41		45.9	115	23.24	47.8		0.67	-163	7.32	Stop development on zone 4
(3)	1510	1515	"		45.4	(DD) 10	23.37	80.9	3.7	1.30	-174	7.28	Start development on zone 3 *
3		1522			43.7	25	22.69	>999	3.3	1.04	-160	7.40	
3		1528			44.9	40	22.61	>999		1.14	~~-165~~	7.39	ORP = -169
3		1534			45.1	45	23.63	>999		0.81	-190	7.34	
3		1543			45.6	55	23.65	>999		0.88	-192	7.34	
3		1550			46.2	65	23.65	>999	4.7	0.75	-194	7.34	Slowed pumping rate
3		1608	1608		46.3	70	21.44	596		1.35	-192	7.37	

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLO N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-13B
Date: 01-16-06
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra Pump - Final Development

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: _____ Sheet 1 of 1
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	~~K-Packer depths (ft bgs/ ft bgs)~~ cond (ms/m)	Cum. Volume Purged ~~(gal)~~	~~Pumping Rate Q (gpm)~~ DO	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other Temp(°C)	other ORP	other pH	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
01-16-06 2	0750	0753			51.9	5	2.64	218	33	17.72	-95	7.20	
		0801			45.1	12	0.85	248	5.0	21.34	-139	7.35	
		0806			44.1	20	1.14	>999	6.4	22.01	-167	7.66	
		0814			46.3	30	1.50	>999	14.1	21.97	-159	7.71	~~Hydr~~ Hydrogen Sulfide odor
		0821			47.8	40	1.55	>999	17.5	22.83	-182	7.71	
		0829			48.7	55	1.75	>999	16.9	22.41	-174	7.77	
		0837			48.4	65	2.52	>999	18.2	22.01	-168	7.86	
		0844			48.7	80	1.11	>999	18.3	22.59	-165	7.84	LOWERED PUMP RATE
		0853			48.5	85	3.00	>999	18.9	20.50	-153	7.91	
		0903	0906		48.9	87	1.35	>999		21.38	-166	7.81	STOPPED PUMP TO BEGIN NEXT ZONE
WL	1301	2@	1016										
1	1041	1045	"		48.6	4	—	>999		19.87	-110	7.87	
		1050			23.1	5	4.64	576		22.38	—	8.03	
		1102	1106		48.7	10	2.37	>999		23.16	-120	7.91	Stop pump, no water being produced. Lower tubing.
1	1110		1112			12							Stop pump, no water being produced
1	1140	1226			50.0	45	1.31	586		23.91	-111	7.61	
		1234			50.2	47	1.37	605		24.53	-146	7.60	
		1244			50.5	50	1.06	344		24.84	-159	7.62	
		1253	1253		50.6	60	0.88	841		24.84	-168	7.60	Complete final development of zone 1

WELL DEVELOPMENT FORM KOPPERS SITE, UPPER FLO[illegible]N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-14B | Total Well Depth (ft bgs): | Recorded by: Bohmann / Helms | Sheet 1 of

Date: 1-16-06 → | Initial Depth to Water (ft bgs): | Time: | Screen Lengths (ft): 1 ; 2 ; 3 ; 4

Well Diameter (in ID): 2 inch Westbay | Initial Water Column (ft): | Initial Casing Volume (gal):

Method of Development: Waterra Pump - Final Development

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs) (ft bgs) Cond (s/m)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm) DO	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other Temp (°C)	other ORP	other pH	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
01-16-06 4	1535					0							
		1600			52.1	30	1.30	476	30.7	24.20	-153	7.80	
		1609			53.1	40	2.37	231	31.8	23.07	-144	7.78	
		1615			53.6	48	2.18	227	33.6	23.45	-156	7.80	
		1621			54.2	56	2.24	198	39.1	23.18	-150	7.78	
		1627			54.5	62	2.10	142	44.1	23.88	-153	7.76	
		1633	1635		54.1	70	1.75	114	47.4	23.11	-154	7.77	
							01/17/06						
01-17-06 3	0957	1000			51.6	[redacted]3	2.26	580		22	-88	6.37	
		1005			45.0	75	2.61	999.0	14.4	22.75	-148	7.45	
		1010			44.0	40	2.52	489		23.46	-156	7.61	
		1020			[redacted]43.8	50	3.64	465		23.35	-157	7.71	
		1030	1030		43.7	60	3.60	207	13.6	24.0	-160	7.69	
2	1124												
		1130			40.5	10	8.76	289		24.30	11	7.68	
		1140			40.8	20	3.95	862	23.0	23.66	-58	8.02	
		1150			36.7	30	4.17	602		23.74	-122	8.06	
		1200			40.6	50	4.12	530		24.14	-123	7.93	
		1215	1215		41.6	60	4.02	213	16.2	23.81	-123	7.81	
1	1300												
		1310			37.6		3.34	653	37.3	24.62	-57	8.09	
		1320			37.3		3.24	999		24.13	-114	8.24	
		1330			38.4		3.50	680		23.84	-135	8.19	
		1340			40.7		3.09	447	22.5 (18)	25.12	-79	8.11	

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLO[illegible]N MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-15B
Date: 1-17-06, 1-18-06
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra pump

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: DLMS _____ Sheet ____ of ____
Screen Lengths (ft): 1____; 2____; 3____; 4____
Initial Casing Volume (gal): _____

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	~~Purge depths (ft bgs - ft bgs)~~ COND.	Cum. Volume Purged (gal)	~~Pumping Rate (gpm)~~ DO	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other TEMP	other ORP	other pH	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
1-17-06	4	1610												
			1620			18.7		6.77	26.1	0.36	24.77	114	8.25	
			1630			50.7		3.85	999		24.19	-85	7.85	
			1640			48.9		5.02	999		24.16	-125	7.81	
			1650			48.6		4.85	596		24.13	-132	7.68	
			1700			48.4	↓	4.75	554	14.1	24.14	-136	7.67	
			1710	1712		48.6	60	4.49	462	10.6	23.79	-137	7.78	
1-18-06	3	0725				[illegible]								
			0726			50.1		2.77	348	12.2	20.54	152	8.08	
			0740			48.3		2.77	999		21.70	-94	7.76	
			0750			47.6		3.60	851	15.1	21.76	-130	7.71	
			0800			47.9	↓	2.40	75		21.22	-133	7.70	
			0820	0822		48.0	60	1.82	962	14.4	21.68	-156	7.64	
1-18-06	2	0945												
			0947			47.0		5.49	668	13.5	14.03	-131	7.62	
			0955			47.8		5.00	678		18.60	-155	7.68	
			1005			47.5		4.26	999		20.55	-152	7.65	
			1015			48.6	↓	5.29	999		19.84	-141	7.70	
			1045	1047		48.4	60	263	121	13.5	21.34	-148	7.67	
1-18-06	1	1430												
			1435			47.2		6.10	114	8.5	21.47	22	8.05	
			1445			46.3		3.70	999		22.33	-114	7.66	
			1505			46.3	↓	4.00	369		21.84	-133	7.64	
			1530	1532		47.0	60	3.66	169	26.5	21.63	-131	7.67	

WELL DEVELOPMENT FORM KOPPERS SITE, UPPER FLOR MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW16B | Total Well Depth (ft bgs): | Recorded by: RN | Sheet 1 of

Date: 1-22-09 | Initial Depth to Water (ft bgs): | Time: | Screen Lengths (ft): 1 ; 2 ; 3 ; 4

Well Diameter (In ID): 2" Used Bay | Initial Water Column (ft): | Initial Casing Volume (gal):

Method of Development:

ORP (mV) → Temp °C → ms/cm → mg/L

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Cond.	other: D.O.	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3	1225					0	~~1.75~~						H_2S odor, Turbid, Gray
	~~1240~~	1240		-212	25.39	~~1625~~	~~1.75~~	658	42.2	7.59	~~506~~	1.70	
	~~1310~~	1310	1310	-224	25.34	78.0	1.75	316	53.5	7.59	51.6	1.52	
2	1530					0	1.5						H_2S odor, Turbid, Gray
	~~1550~~	1550		-202	25.20	30	1.5	999+	51.6	7.60	53.2	0.99	
	~~1600~~	1600		-215	24.85	60	1.5	999+	54.7	7.37	52.7	0.97	
	~~1610~~	1610	1610	-230	25.05	75	1.5	776	61.6	7.50	52.4	0.92	
1	1723						0.4						Variable Flow Rate 0.4 AVG.
		1735		-170	24.46	4.8	0.4	614	172.8	8.29	68.6	7.84	Slight H_2S odor, Turbid, Gray
	~~1850~~	1850	1850	-220	23.76	34.8	0.4	137	116.4	8.68	57.1	4.38	Cavitation in Flow
													→ NOTE: TANK VOLUME CLOSER TO 75 GAL – 100 GAL RANGE OF PURGE WATER

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-16B
Date: 3/1/06
Well Diameter (in ID): 2 Inch Westbay
Method of Development: Waterra Pump

Total Well Depth (ft TOC): _____
Initial Depth to Water (ft TOC): 128.33 Time: _____
Initial Water Column: Length _____ (ft); Volume _____ (gal)

Recorded by: D. Bohman Sheet 1 of 1
Screen Lengths (ft): 1_____; 2_____; 3_____; 4_____
Top of Screen (ft TOC): 1_____; 2_____; 3_____; 4_____

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Incremental Time (min)	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Incremental Volume Purged (gal)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Level (ft TOC)	Water Quality Parameters: Turbidity (NTU)	Water Quality Parameters: Bromide (mg/l)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3/1/06	1	1518	1535					10	~~0.33~~ 0.15 (10)	~0.75		23	16.0	
				1645 –	The Waterra pump was found to be not working. Water running,									turn not active
				1645					20					
								3/2/06						
3/2/06	1	0942						0	20					
				1000				0	20					Pump not producing water
	1	1120						0	20					Restart pump WDP; replaced foot valve
			1242					55	75	~1.0		2.30	39.9	
			1348					45	120	~0.75		0.87	41.3	
			1448					40	160	~0.7		0.39	52.6	
			1620					60	220	~0.7		1.21	593	
			1850					95	315	~0.65		2.17	63.9	
			2355					210	525	~0.65		1.76	54.2	
3-3-06	1		0345	0348				200	725	~0.65		1.63	55.5	
	1	0710						0	725					
			0800					40	765	~0.15		0.70	73.7	
		0855		0845				30	795	~0.7				Stop pump to empty tank
	1	0920						0	795					
			0920					20	815	~0.15		2.36	62.3	
			1125					120	935	~0.25		1.88	60.6	
			1225					60	995	~1.0		1.51	61.8	
				1233				5	1000					

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-17B
Total Well Depth (ft bgs): _____
Recorded by: D. Bohmann Sheet 1 of 3

Date: 3/5/06 → 3/7/06
Initial Depth to Water (ft bgs): _____ Time: _____
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____

Well Diameter (in ID): 2 Inch Westbay
Initial Water Column (ft): _____
Initial Casing Volume (gal): _____

Method of Development: Waterra Pump DO(mg/L) Temp(°C) pH Cond ORP

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	~~Pump Intake Depth (ft bgs)~~	~~K-Packer depths (ft bgs / ft bgs)~~	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Cond (mS/cm)	other: ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3-5-06 4	1045	1052				2	~0.75	3.4	1.4				
		1115		1.43	23.3	30	1.0	50	2.8	6.27	58	-61	
		1125		1.21	23.4	40	1.0	44	3.3	6.36	54	-80	
		1240		1.39	23.5	115	1.0	38	2.8	6.54	55	-105	
		1248		1.65	23.5	123	1.0	35	2.5	6.60	55	-108	
		1255		1.40	23.3	130	1.0	40	1.8	6.79	53	-126	
		1302		0.74	23.2	137	1.0	37	1.9	6.83	52	-133	
		1320		1.35	23.3	155	1.0	45	2.9	6.82	51	-128	
		1330	1335	1.18	23.4	165	1.0	40	2.1	6.81	50	-126	
3	1425					0							
		1510		1.38	23.7	20	0.5	170	0.5	6.99	52	-110	
		1530		0.14	23.4	45	1.1	23	0.3	6.99	48	-143	
		1540		0.13	23.4	58	1.1	13	0.5	7.02	49	-147	
		1550	1553	0.16	23.5	70	1.1	10	0.8	7.01	48	-150	
2	1655					0				-	~~55~~		
		1720		1.70	24.3	20	~0.9	420	2.0	7.02	55	-118	
		1730		0.95	23.5	25	~0.7	440	1.6	7.07	50	-127	
		1740		0.83	23.1	32	~0.6	270	0.86	7.15	46	-132	
		1750		0.36	22.8	42	1.0	760	0.77	7.09	46	-139	
		1900		0.21	22.8	50	0.9	>999	1.1	7.05	47	-145	
		1850	1853	0.58	22.8	95	0.9	>999	0.32	7.07	48	-147	
3-6-06 2	0720					95							
		0938				195	~0.8	300	0.25				
		1009		0.43	22.5	235	~1.2	200	0.53	~~5.47~~ 6.16	51	~~-95~~ -132 (DUP)	

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-17B
Date: 3/5/06 → 3/7/06
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra Pump DO(mg/L) Temp(°C) Cond. ORP

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D. Bhuiyan Sheet 2 of 3
Screen Lengths (ft): 1____; 2____; 3____; 4____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	~~Pump Intake Depth (ft bgs)~~	~~R-Packer depths (ft bgs / R bgs)~~	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Cond (mS/cm)	other: ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3-6-06 continued													
2		1035		0.06	22.5	265	1.1	120	0.40	6.68	50	-161	
		1045		0.51	72.5	275	1.1	120	0.48	6.79	50	-162	
		1055	1056	1.72	72.6	287	1.1	120	0.41	6.84	50	-163	Stop pump to empty tank
	1135					287							
		1219		0.77	23.0	350	1.3	110	0.30	6.90	50	-170	
		1235		0.21	22.7	370	1.3	120	0.27	6.88	50	-175	
		1254		0.42	22.6	390	1.1	110	0.20	6.93	50	-171	
		1310		2.76	22.9	397	0.5	87	0.16	6.94	49	-168	
		1435	1440	1.75	23.0	485	1.0	110	0.06	7.03	50	-165	
1	1600						1.0						
	~~1644~~	1640		1.42	23.2	40	1.0	30	0.33	7.22	48	-194	
		1650		2.24	23.5	50	1.0	31	0.20	7.09	48	-187	
		1700		5.99	23.2	60	1.0	~~60~~	~~0.37~~	7.13	48	-176	
		~~175~~		6.57	23.1	75	1.0	360	0.38	7.16	48	-175	
		1740		2.06	23.0	100	1.0	>999	0.50	7.09	49	-172	
			1755			115	~1.0						
3-7-06 1	0750	~~0828~~ ~~0850~~		2.45	19.6	145	1.0	7999	0.79	6.16	49	-134	
		0845		1.41	20.4	190	1.0	7999	10.4	6.51	52	-181	
		0945		0.90	20.2	250	1.0	530	1.3	6.53	54	-179	
		1015		2.21	20.9	280	1.0	360 DUP: 400	5.3	6.66	54	-172	
		1040		1.13	21.3	305	1.0	>999	2.3	6.63	53	-170	
		~~1105~~		~~1.73~~	~~22.0~~	~~325~~	~~1.0~~	~~7999~~	~~0.55~~	~~6.78~~	~~44~~	~~161~~	~~SU~~
		1105		1.25	21.6	330	1.0	7999	10.4	6.63	53	-183	

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FMW17B

Date: 3-7-06 (3/5/06 → 3/7/06)

Well Diameter (in ID): 2.N WESTBAY

Total Well Depth (ft bgs): _____

Initial Depth to Water (ft bgs): _____ Time: _____

Initial Water Column (ft): _____

Recorded by: D. Bahmann Sheet 3 of 3

Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____

Initial Casing Volume (gal): _____

Method of Development:

WATERA PUMP DO TEMP

Screen Interval ID (1 on top)	Start Time	Measure-ment Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters					Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
								Turbidity (NTU)	Bromide (mg/l)	other pH	other COND (mS/m)	other ORP (mV)	
1		1235			23.3	420	1.0	290	4.4	6.71	53	-171	
		1330		2.80	22.9	475	1.0	270	0.53	6.66	53	-175	
		1430		1.91	22.8	535	1.0	230	8.2	6.69	53	-174	
		1500	1505	0.93	23.1	565	1.0	220	0.43	6.63	54	-188	

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-10B
Date: 3/6/06 – 3/8/06
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra Pump DO(mg/L) Temp(°C) pH Cond. ORP

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D. Bohmann Sheet 1 of 2
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	~~Pump Intake Depth (ft bgs)~~	~~X-Packer depths (ft bgs / ft bgs)~~	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other pH	other Cond(mS/cm)	other ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
4	0919					0							
		0930				8	0.75	220	4.7				
	0945												Generator turned off at 0945, restart.
		1020		1.10	22.5	45	~1.0	31	1.2	6.56	44	-120	
		1030		0.74	22.6	55	1.0	14	0.62	6.71	44	-126	
		1040		0.51	22.8	65	1.0	16	0.88	6.78	44	-161	
		1050		0.31	22.9	75	1.0	16	0.74	6.83	45	-170	
		1100	1103	0.49	23.0	85	1.0	10	1.3	6.86	45	-172	
3	1215				~~22.4~~	0		~~50~~			~~42~~	~~-145~~	
		1245		0.89	22.9	30	1.0	58	0.10	6.95	42	-145	
		1305		1.00	23.2	50	1.0	22	0.19	6.97	42	-149	
		1325		0.56	22.9	70	1.0	29	0.49	7.01	42	-153	
		1340		0.0	23.3	95	1.0	7	0.19	7.00	42	-176	
		1348	1350	0.79	23.2	103	1.0	5	0.26	7.00	42	-174	
2	1430					0							
		1505		11.79	24.0	25	1.0	500	1.5	7.13	46	-193	
		1530		1.03	24.2	60	1.0	220	2.7	7.15	48	-215	
		1610		0.37	23.7	100	1.0	87	11.0	7.10	49	-258	
		1620		1.21	23.6	110	1.0	63	13.1	7.22	49	-254	
		1630		1.83	23.0	120	1.0	72	13.6	7.20	49	-257	
		1645		0.56	22.8	135	1.0	85	16.7	7.17	49	-261	
		1650		1.72	23.2	140	1.0	83	17.5	7.10	49	-240	
		1710		1.15	22.9	150	1.0	64	19.9	7.10	50	-291	
		1720		2.27	23.2	160	1.0	67	17.8	7.20	49	-243	

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW 18B
Date: 3/06/06 → 3/8/06
Well Diameter (in ID): 2
Method of Development: Waterra Pump DO (mg/L) Temp °C

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D. Behmann Sheet 2 of 2
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	~~Pump Intake Depth~~ (ft bgs)	~~Packer depths~~ (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other pH	other Cond (mS/cm)	other ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
2		1745		0.0	22.5	185	1.0	74	20.4	7.16	50	-261	
		1830		1.15	22.6	230	1.0	69	21.4	7.21	49	-272	
		1838		0.35	22.4	238	1.0	55	20.4	7.15	50	-277	
		1845	1848	0.05	22.5	245	1.0	55	21.8	7.18	50	-279	
3-7-06 2	0730	0810		1.07	12.8	285	1.0	55	32.1	5.81	50	-169	
		0835		3.67	20.2	310	1.0	48	27.3	6.43	51	-212	
		0850	0856	3.63	20.6	325	1.0	27 LAMOTE 25 HOR	25.1	6.58	51	-218	
1	0945	0947		1.13	21.6	0	1.0	38 LAMOTE 26 HOR	18.6	6.66	51	-233	
		1005		2.13	21.7	20	1.0	>999	0.08	6.79	42	-143	
		1035		0.90	22.0	50	1.0	>999	0.13	6.71	43	-159	
		1105	"	1.73	22.0	80	1.0	>999	0.35	6.78	44	-161	
		1240	1242	2.18	22.3	175	1.0	370	1.8	6.74	46	-183	STOPPED PUMP IN ZONE 1 TO BEGIN SAMPLING LOWER ZONES
3-8-06 1	0720					175				-			
		~~0752~~	~~0757~~			~~205~~	~~1.6~~						stop to empty tank
		0820		3.05	21.8	235	1.0	130	3.7	6.43	47	-197	
		0920		2.75	21.9	295	1.0	280	4.6	6.65	48	-194	
		1000				245	1.2	85					switch tanks
		1038		1.39	23.0	285	1.2	32	5.0	6.69	47	-198	
		1045		1.65	22.6	295	1.2	26	~~8.7~~ 8.1	6.64	47	-200	Br = 8.7 mg/L
		1055		1.45	22.5	~~308~~	1.2	27	13.4	6.67	47	-203	
			1059	"		310							

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-19B
Date: 3/3/06 →
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra Pump DO(mg/L) Temp(°C) pH (mS/m) (mV)

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D. Blumann Sheet 1 of ____
Screen Lengths (ft): 1____; 2____; 3____; 4____
Initial Casing Volume (gal): _____

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Cond	other: ORP	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3/3/06	4	10:30					0							
			11:30		8.63	23.5	240	~1.0	390	26.1	6.98	48	-190	
			11:37		8.50	23.0	247	1.0	380	45.7	6.99	47	-201	
			11:45	1448	8.63	22.8	255	1.0	380	33.4	7.05	48	-206	Empty tank
	4	1615	1620		2.84	23.2	260	1.0	430	27.0	7.08	49	-180	
			1628		2.32	22.9	268	1.0	364	29.8	7.35	48	-203	
			1634		7.48	22.7	274	1.0	290	33.7	7.48	48	-202	
			1640		5.91	22.7	280	1.0	240	33.0	7.52	49	-204	
			1646		3.58	22.6	286	1.0	230	43.3	7.56	49	-208	
			1653	1655	3.56	22.5	293	1.0	280	28.5	7.57	49	-205	
3/4/06	3	0909 offline					0							
			0915				6	1.0	223	41.5				
			0945		2.63	20.4	~~30~~ 35	~0.9	86.5	40.7	6.14	50	-104	
			1007		1.80	20.9	45	~0.8	37.8	52.0	6.71	50	-149	
			1017		1.21	20.7	55	1.0	10.1	54.3	6.92	50	-190	
			1025		1.73	20.9	65	~1.1	7.93	56.3	7.04	50	-195	
			1032		1.41	21.1	72	1.0	7.84	53.8	7.07	50	-199	
			1039	1041	1.27	21.1	80	1.0	5.48	52.8	7.08	50	-201	
3/4/06	2	1304					0							
			1310				6	~1.0	33.4	20.8				
			1354		1.45	23.1	25	0.5	10.81	18.5	7.14	49	-154	
			1402		1.41	22.8	28	0.5	4.36	19.6	7.18	49	-163	
			1455		1.08	23.3	60	0.6	4.93	20.2	7.24	49	-169	
			1503		1.35	22.9	65	~0.7	6.16	22.4	7.23	49	-173	

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-19B
Date: 3/3/06 →
Well Diameter (in ID): 2 Inch Westbay
Method of Development: Waterra Pump DO(mg/L) Temp(°C)

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D. Bohmann Sheet 2 of ____
Screen Lengths (ft): 1____; 2____; 3____; 4____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measure-ment Time	Stop Time	~~Pump Intake Depth (ft bgs)~~	~~K-Packer depths (ft bgs / ft bgs)~~	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Conductivity	other: ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
2		1513		1.44	22.7	70	~0.7	5.57	28.1	7.23	50	-175	
			1520			75							
1	1741					0							
	"	1759		3.10	22.3	10	~0.5	34.5	29.7	7.40	52	-48	
		1823		3.85	20.6	30	1.0	16.5	44.2	7.38	52	-26	
		1833		3.73	20.9	40	1.0	9.81	39.7	7.33	51	-23	
		1843		3.96	20.6	50	1.0	7.53	33.6	7.31	52	-21	
		1853		4.35	20.5	60	1.0	6.25	34.5	7.29	51	-20	
			1915			75							

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-20B
Date: 3/8/06 → 3/9/06
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra Pump DO(mg/L) Temp(°C) pH Cond. ORP

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D. Bohmann Sheet 1 of 2
Screen Lengths (ft): 1 ____; 2 ____; 3 ____; 4 ____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	~~Pump~~ Intake Depth (ft bgs)	~~K-Packer~~ depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other pH	other Cond. (mS/m)	other ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
4	1307												
		1427		3.91	24.0	75	1.0	87	0.32	6.72	52	-180	
		1435		2.40	23.3	88	1.0	62	0.47	6.64	52	-183	
		1440		2.15	22.8	93	1.0	54	0.31	6.67	52	-182	
		1445		2.04	23.2	98	1.0	58	0.43	6.65	53	-183	
		1450		2.02	23.1	103	1.0	93	0.53	6.62	52	-185	
		1455		1.99	23.1	108	1.0	93	0.40	6.61	52	-188	
		1500		1.70	23.2	113	1.0	97	0.55	6.61	53	-187	
		1505		2.04	23.2	118	1.0	97	0.45	6.60	53	-189	
		1625	1628	3.44	23.5	198	1.0	18	3.0	6.65	52	-187	
3	1740					0							
			1905			85	1.0						
3	0735		"			85							
		0815		1.83	21.2	125	1.0	26	4.2	5.83	55	-148	
		0820		2.01	21.6	130	1.0	23	3.7	5.92	56	-156	
		0825		1.78	21.8	135	1.0	28	3.5	6.10	55	-162	
		0830		1.89	21.9	140	1.0	25	3.8	6.17	55	-167	
		0840		1.49	21.2	150	1.0	23	3.8	6.37	55	-177	
		0845	0849	1.65	21.7	155	1.0	20	4.0	6.41	55	-179	
2	0940					0						[illegible]	Early pH may have been affected by cold air temps
		1118		0.0	23.3	90	1.2	16	12.1	6.78	52	-185	
		1125		0.0	23.2	99	1.2	15	12.3	6.75	51	-188	
		1130		0.0	23.0	105	1.2	12	16.4	6.72	51	-188	
		1135	1138	0.0	23.0	111	1.2	12	16.0	6.71	51	-189	

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: GW-20B
Date: 3/8/06 → 3/9/06
Well Diameter (in ID): 2 Inch Westbay
Method of Development: Waterra Pump DO (mg/L) Temp (°C) pH Cond ORP

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: D. Behrmann Sheet 2 of 2
Screen Lengths (ft): 1 _____; 2 _____; 3 _____; 4 _____
Initial Casing Volume (gal): _____

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	~~Pump Intake Depth (ft bgs)~~	~~K-Packer depths (ft bgs / ft bgs)~~	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Cond (mS/cm)	other: ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
1	1240					0							
		1325		2.43	23.3	50	1.1	2.3	35.0	6.78	55	-230	
		1330		2.14	23.2	55	1.1	2.1	38.8	6.77	56	-227	
		1335		0.79	23.0	61	1.1	2.1	44.0	6.77	56	-224	
		1340		0.09	23.0	66	1.1	2.8	42.3	6.76	55	-219	
		1345	1348	0.43	23.1	72	1.1	2.5	45.0	6.75	55	-217	

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-21B
Date: 3/7/06 →
Well Diameter (in ID): 2 inch Westbay
Method of Development: Waterra Pump DO(mg/L) Temp(C) pH Cond ORP

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: P. Behmann Sheet 1 of 2
Screen Lengths (ft): 1 _____; 2 _____; 3 _____; 4 _____
Initial Casing Volume (gal): _____

	Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	~~Pump Intake Depth (ft bgs)~~	~~K-Packer depths (ft bgs / ft bgs)~~	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Cond (mS/cm)	other: ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3-7-06	4	1640					0							
			1755		3.61	23.1	70	~1.0	7.5	47.4	6.68	63	-232	
			2150	2150	4.08	20.3	250	~0.8	3.7	39.9	6.80	65	-236	
3/8/06	4	0720					250							
			0752	0752	3.21	19.5	280	1.0	2.2	26.4	6.19	67	-235	stop to empty tank.
		0807	0815		2.38	22.0	288	1.0	2.7	33.3	6.26	63	-242	
			0842		3.20	21.8	305	1.0	1.9	48.3	6.49	64	-245	
			0915		3.88	21.6	335	1.0	2.3	49.6	6.55	64	-246	
			0930	0935		21.3	350	1.0	1.7	53.8	6.59	64	-250	
	3	1027					0							
			1412		3.39	24.0	225	1.0	1.4	22.5	6.57	62	-254	
			1517		3.53	23.3	290	1.0	2.5	28.6	6.57	62	-255	
			1522		3.23	23.6	295	1.0	1.4	29.7	6.57	61	-261	
			1527	1529	3.24	23.2	300	1.0	1.5	31.6	6.68	61	-265	
	2	1617					0				-			est
				2030			260	1.0						
3-9-06	2	0740					260							
			0950		2.26	~~24~~ 23.1	400	1.1	3.1	37.6	6.61	62	-258	
			0955		2.78	22.9	405	1.1	2.4	46.4	6.63	62	-264	
			1000		3.30	22.5	411	1.1	2.7	52.2	6.67	63	-266	
			1005	1008	2.63	22.5	416	1.1	2.3	48.6	6.69	63	-267	Br=48.6mg/L
	1	1110					0							
			1320		2.94	23.1	140	1.1	2.1	12.9	6.78	61	-243	
			1610		1.98	23.7	330	1.1	1.8	29.6	6.67	61	-254	

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-2(B) Total Well Depth (ft bgs): _____ Recorded by: P. Bohmann Sheet 2 of 3

Date: 03/07/06 → Initial Depth to Water (ft bgs): _____ Time: _____ Screen Lengths (ft): 1____; 2____; 3____; 4____

Well Diameter (in ID): 2 inch Westbay Initial Water Column (ft): _____ Initial Casing Volume (gal): _____

Method of Development: Waterra Pump DO (mg/L) Temp (°C) pH Cond ORP

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	~~Pump Intake Depth (ft bgs)~~	~~K-Packer depths (ft bgs)~~ (ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other: pH	other: Cond (mS/cm)	other: ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
		1615		1.33	23.5	335	1.1	2.6	30.9	6.67	61	-261	
		1620		1.79	23.4	341	1.1	2.8	34.8	6.67	60	-263	
		1625	1629	1.44	23.4	346	1.1	2.2	35.9	6.65	60	-265	

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-22B
Date: 5/19/08 4-inch - 1½" Westbay
Well Diameter (in ID):
Method of Development: waterra pH mS/cm cond

Total Well Depth (ft bgs): 226
Initial Depth to Water (ft bgs): 130.14 Time: 0835
Initial Water Column (ft):

Recorded by: B. Shino Sheet 1 of 2
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): ~6 2/3

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other (mg/L) DO	other (°C) Temp	other (mV) ORP	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
4	0920									4 BFS			
		1016		6.98	0.406	40	~1.1 gpm	82.2	13.7	4.04	23.07	96	0915 Calibrate Horiba U22
		1027		7.74	0.406	52		27.4	0.30	8.07	22.77	73	pH = 5.81 BFS; 0.0 NTU 4.53 mS/cm,
		1038		7.32	0.409	64		16.8	0.20	4.24	22.82	14	Lot 4.0 5169 Exp 1-28-08
		1048		7.32	0.408	76		14.5	0.24	3.28	22.89	-12	
								15.5	BFS				Calibrate LaMotte Turb. ydmeter 1.05 std
		1055		7.29	0.406	87		14.1	0.22	4.30	22.96	-80	reads 1.0, 10 std reads 10.19
		1106		7.34	0.406	99		11.1	0.21	4.33	23.21	-80	SN 4815 5203
		1115	1116	7.38	0.411	110		9.72	0.21	4.29	23.01	-79	
3	1300	1307		7.41	0.410	8	1.2 gpm	65.2	0.08	2.89	23.63	-58	Calibrate Bromide meter,
	1325	1325		7.69	0.415	40		74.8	5.2	7.63	25.52	-80	slope = 22
	BFS 1339	1339		7.75	0.418	46	1.1 gpm	25.3	4.4	3.08	23.55	-151	
		1349		7.80	0.419	57		34.6	BFS 2.0	2.84	23.58	-160	
		1400		7.79	0.418	68		14.6	0.70	3.09	23.45	-146	
		1406		7.81	0.418	74		9.75	0.70	2.94	23.45	-141	
		1414	1416	7.74	0.420	82		7.37	0.65	3.10	23.73	-153	
2	1452	1452					1.1 gpm						
		1504		7.69	0.415	14		0.14	0.35	3.20	24.70	-102	
		1514		7.85	0.415	25		(1093)	6.2	3.30	24.17	-112	
		1524		8.02	0.430	36		661	5.2	3.40	24.40	-121	
		1551		8.08	0.427	66		938	7.0	3.15	23.97	-115	
		1601		7.95	0.430	80		258	7.2	2.94	23.80	-156	
		1608		7.95	0.429	88		134	2.4	3.05	23.81	-165	
		1625		7.93	0.433	125		73.4	2.7	3.16	24.17	-174	

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-22B
Date: 5/19/06
Well Diameter (in ID):
Method of Development: Waterra pH ms/cm cond

Total Well Depth (ft bgs):
Initial Depth to Water (ft bgs): Time:
Initial Water Column (ft):

Recorded by: B. Shore Sheet 2 of 2
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): approx 6.67

Screen Interval ID (1 on top)	Start Time (cont)	Measure-ment Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other (mg/L) DO	other T(°C)	other (mV) ORP	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
2	1452	1630		7.91	0.431	132		59.3	30.0	3.01	23.79	-180	
		1638		7.90	0.430	142		49.0	28.5	3.19	23.73	-180	
		1655		7.90	0.431	165		49.7	31.0	3.08	23.75	-182	
		1702		7.92	0.430	180		27.0	31.4	3.04	23.54	-170	
		1714		7.92	0430	195		24.2	30.5	3.14	23.63	-181	
		1722		7.88	0.433	210		23.2	32.0	3.20	23.47	-175	moderate H_2S odor

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-22R
Date: May 20, 2006
Well Diameter (in ID): 4"/1.5" Westbay
Method of Development: Waterra

Total Well Depth (ft bgs): _____
Initial Depth to Water (ft bgs): _____ Time: _____
Initial Water Column (ft): _____

Recorded by: B. Shiro Sheet 1 of ___
Screen Lengths (ft): 1 10 ; 2 10 ; 3 10 ; 4 10
Initial Casing Volume (gal): approx 6.67

pH Cond (mS/cm)

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	K-Packer depths (ft bgs / ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other (mg/L) DO	other T(°C)	other ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
1	0844	0914		7.45	0.413	35	1.1gpm	481	12.7	2.41	22.40	-142	0745 Calibrate U-22
		0930		7.55	0.409	48		255	18.5	2.60	22.42	-159	pH=7.19 cond=4.49 mS/cm,
		0945		7.65	0.407 0.0407	65		222	23.3	2.64	22.45	-175	0 NTU, Lot 5169 exp 1-28-08
		1000		7.65	0.401	82		86.5	24.0	2.63	22.46	-178	Calibrate Br meter-slope = 33
		1015		7.80	0.408	99		38.6	21.4	2.97	22.64	-183	Calibrate Lamotte turbidimeter
		1030		7.90	0.411	116		110	21.4	2.99	22.65	-184	std 10 = 10.0
		1045		7.85	0.0407	135		70.9	25.4	2.89	22.72	-194	
		1105		8.00	0.413	158		48.7	26.4	2.92	22.80	-192	
		1115		7.98	0.410	170		550	~~28.7~~	2.91	22.90	-195	Moderate H_2S odor
	1125	~~1125~~				182		BS	27.8				no change - water cloudy

WELL DEVELOPMENT FORM — KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc

Well ID: FW-23B
Total Well Depth (ft bgs): 232.85
Recorded by: S ULLMANN Sheet 1 of 1

Date: 5-17-06
Initial Depth to Water (ft bgs): 121.3 Time: 1530
Screen Lengths (ft): 1 ; 2 ; 3 ; 4

Well Diameter (in ID): 4 IN. CASING + 2 IN WESTBAY
Initial Water Column (ft): 111.55
Initial Casing Volume (gal):

Method of Development:
WATTERA PUMP DO mg/L TEMP °C

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump intake Depth (ft bgs)	K Packer depths (ft bgs/ft bgs)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other pH	other COND mS/cm	other ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
~~4~~ SKU							~~1.5~~						
													CALIBRATE METER
													15:15, 5-17-06, HORIBA U-22
													AUTO CAL SOLUTION
													pH: 4.00 0.0 NTU 4.49 µS/cm
													LOT # 5169
													EXP 01-28-2008
4	1550	1556		4.84	22.79	7.5	1.5	>999		7.23	0.366	-27	
4	~~1607~~	1607		4.65	23.56	22.5	1.5	>999		7.54	0.290	-67	Calibrate Br meter - slope is 23
4		1610		4.43	22.67	27	1.5	7999		7.73	0.288	-120	using 3 point cal (0, 10, 100) (15:00)
4		1615		4.34	22.67	34.5	1.5	>999		7.81	0.297	-144	
4		1620		3.87	22.47	42	1.5	633		7.86	0.300	-133	
4		1625		4.42	22.92	49.5	1.5	211		7.90	0.295		
4		1630		3.83	22.89	57.0	1.5	140.0		7.93	0.301	-153	
4		1635		3.75	22.83	64.50	1.5	76.7		7.93	0.296	-153	
4		1640		4.21	22.28	72.0	1.5	56.2		7.94	0.299	-161	
4		1645		4.23	22.78	~~79~~ 79.5	1.5	52.7		7.95	0.296	-159	
4		1650		4.08	22.91	87	1.5	49.3		7.94	0.293	-137	
4		1655		4.12	22.55	94.5	1.5	44.8		7.95	0.293	-151	
4		1710		4.09	22.23	117	1.5	33.4	12.5	8.0	0.305	-152	
4		1725		2.72	22.72	139.5	1.5	28.9	10.5	7.99	0.304	~~-13~~ -144	
4		1740		3.03	23.06	162	1.5	17.7	10.2	7.95	0.304	~~-121~~	

WELL DEVELOPMENT FORM **KOPPERS SITE, UPPER FLORIDAN MONITOR WELL INSTALLATION PROGRAM, GeoTrans, Inc**

Well ID: FW-23B | Total Well Depth (ft bgs): 235.85 | Recorded by: S. ULLMANN | Sheet 1 of ___

Date: 5-18-06 | Initial Depth to Water (ft bgs): 121.35 Time: 1000 | Screen Lengths (ft): 1 ___; 2 ___; 3 ___; 4 ___

Well Diameter (in ID): 4IN CASING, 2IN PVC | Initial Water Column (ft): ___ | Initial Casing Volume (gal): ___

Method of Development: WESTBAY

WATTERA PUMP pH COND (mS/cm)

Screen Interval ID (1 on top)	Start Time	Measurement Time	Stop Time	Pump Intake Depth (ft bgs)	Packer Depths (ft bgs Above)	Cum. Volume Purged (gal)	Pumping Rate Q (gpm)	Water Quality Parameters: Turbidity (NTU)	Bromide (mg/l)	other DO mg/L	other Temp °C	other ORP (mV)	Remarks (e.g., odor, color, sediment load, clarity of water, presence of NAPLs, surging methods, well condition, deviation from plan, success of development, etc....)
3	0815	0820		6.76	0.314	6	1.2	43.2	Ulr*	2.71	21.29	-46	0800 CALIBRATE BROMIDE METER
3		830		7.56	0.305	18	1.2	344.0	Ulr	3.21	21.60	-139	1, 10, 100ppm SOLUTION
3		840		7.64	0.303	30	1.2	92.6	Ulr	3.85	21.48	-133	SLOPE = 25
3		0850		7.70	0.303	42	1.2	47.9	2.3	4.74	21.67	-126	
3		0900		7.69	0.303	54	1.2	15.0(Lab)	2.7	4.34	21.56	-132	0806 CALIBRATE LI-22
3		0910		7.68	0.302	66	1.2	13.1(Lab)	3.1	3.28	21.58	-149	pH=4.00, 10.0NTU, 4.49 mS/cm
3		0920		7.67	0.304	78	1.2	11.3	3.9	2.58	21.74	-153	LOT# 5169, EXP 01-28-01
3		0930		7.70	0.305	90	1.2	10.85	3.7	2.38	21.79	-159	
3		0940		7.68	0.305	102	1.2	10.49	4.4	2.33	21.74	-166	0845 RECAL BROMIDE METER
3		0950	0953	7.68	0.305	114	1.2	9.87	6.2	2.14	21.89	-169	SLOPE = 40
2	1035	1040		7.72	0.303	8	1.6	24.7	0.70	2.87	22.17	-136	0855 CALIBRATE LAMOTT TURBIDIMETER
2		1050		7.74	0.308	24	1.6	30.6	0.84	4.24	22.24	-139	2020 SN- 4815-5203 @10NTU
2		1100		7.73	0.309	40	1.6	15.2	1.6	2.90	22.40	-142	TURB. = 9.81 → 10.0
2		1110		7.72	0.309	56	1.6	10.27	1.6	3.74	22.77	-135	
2		1120		7.70	0.310	72	1.6	10.92	1.7	3.38	22.64	-135	
2		1130	1135	7.67	0.308	88	1.6	8.11	0.39	3.31	22.69	-139	
1	1335	1345		8.75	0.291	17	1.7	32.2	0.42 ~~4.03~~	4.03	23.68	24	
		1355		8.47	0.292	34	1.7	30.0	0.38	2.91	23.21	-110	
		1405		8.11	0.297	51	1.7	14.1	0.51	2.62	23.41	-126	
		1415		7.95	0.302	68	1.7	7.63	0.62	2.89	23.29	-129	
		1425		7.86	0.302	85	1.7	5.86	0.69	3.04	23.32	-143	
		1435	1438	7.85	0.304	102	1.7	4.52	0.65	3.19	23.48	-136	

* Ulr = Under range.