

SEMIANNUAL REPORT

**Post-Closure Groundwater Monitoring
REALM Coldwater Road Landfill
Flint, Michigan
MID 005 356 860**

Motors Liquidation Company
Detroit, Michigan

August 2009

SEMIANNUAL REPORT

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*Motors Liquidation Company
Detroit, Michigan*



Scott L. Cormier, P. E.
Vice President

August 2009



O'BRIEN & GERE



August 31, 2009

Mr. Richard Conforti, P.E.
Environmental Engineer
Michigan Department of Environmental Quality
Waste and Hazardous Material Division
P.O. Box 30241
Lansing, Michigan 48909-7741

Re: 2009 Semiannual Report,
Coldwater Road Landfill
Post-Closure Groundwater Detection
Monitoring Results - Flint, Michigan

File: 4966 / 39196 #5

Dear Mr. Conforti:

On behalf of Motors Liquidation Company, O'Brien & Gere is pleased to present the results of the semiannual groundwater sampling event conducted in June 2009 for the Coldwater Road Landfill site (Figure 1). The groundwater samples were analyzed for total organic carbon (TOC, Method 415.1), total organic halogen (TOX, Method 9020A), specific conductivity (Method 120.1), chloride (Method 300.0), cyanide (CN, Method 335.4), sulfate (Method 300.0), phenols (Method 420.1), volatile organic compounds (VOCs, Method 8260B), and dissolved metals (chromium (Cr), copper (Cu), nickel (Ni), zinc (Zn), iron (Fe), manganese (Mn) and sodium (Na), Method 200.8). The event also included field measurements for pH, specific conductivity and temperature. Groundwater samples were collected using a bladder or peristaltic pump, and low-flow sampling techniques in accordance with O'Brien & Gere procedures and General Motors Field Method Guides (Appendix A). Samples for dissolved metals were field filtered. Groundwater sampling logs are included as (Appendix B).

Gauging and sampling were conducted on June 24, 2009 and June 25, 2009. The results are presented in four separate tables: Table 1 - Depth to Groundwater Levels in Monitoring Wells; Table 2 - Post-Closure Monitoring - Historical Analytical Results (Physical Parameters, TOC, TOX and Metals); Table 3 - Post-Closure Monitoring - Historical Analytical Results (Chloride, Cyanide, Phenols and Sulfate); and Table 4 - Post-Closure Monitoring - Analytical Results (Volatile Organics). Laboratory analytical reports are included in Appendix C.

A site location map (Figure 1) and monitoring well location map (Figure 2) are also included. A groundwater elevation map was completed for the shallow perched water zone (Figure 3) and a groundwater potentiometric surface map was completed for the deeper drift aquifer (Figure 4).

Contours were not plotted for groundwater in the shallow perched zone because water level elevations exhibited no consistent flow direction.

The drift aquifer static water elevations, which were calculated from depth to water measurements collected on June 24, 2009, were consistent with historical values. Groundwater in the drift aquifer flows in a southerly direction as shown on Figure 4.

Groundwater samples were collected from six monitoring wells screened in the perched zone and six monitoring wells screened in the drift aquifer during this sampling event.

A review of the analytical data presented in the attached tables indicates analytical results similar to previous sampling events with the following exceptions:

- Chromium and nickel values were not detected.
- Copper values stayed similar or were not detected; however, copper increased in B-2D.
- Zinc values stayed similar or were not detected; however, zinc increased in B-2D and B-18A.
- TOC values stayed similar or decreased; however, TOC increased in B-2D and B-24r.
- TOX values were not detected.
- Specific conductivity stayed similar or decreased; however, specific conductivity increased in B-2D.
- Iron values stayed similar or decreased; however, iron increased in B-22D, B-24r, and D-27D.
- Manganese values stayed similar or decreased; however, manganese increased in B-2, B-7, and B-28.
- Sodium values stayed similar or increased slightly.
- Cyanide and phenols were not detected.
- Chloride and sulfate values stayed similar or increased slightly.
- pH values stayed similar or increased slightly.

The duplicate sample results collected from monitoring well B-20D were comparable to the original sample. VOCs concentrations were not detected during this sampling event.

No exceedences of the Shewart control limits resulted from this monitoring event. Copper (203 µg/L) and zinc (113 µg/L) concentrations spiked in B-2D during this sampling event. It appears the spikes were not part of a release or an ongoing trend due to equal or lower corresponding constituent concentrations in the adjacent vaults. (*i.e.*, the concentration of copper in vault A, which is adjacent to B-2D, was 11 µg/L and the concentration of zinc was 36 µg/L). Furthermore, B-2D is upgradient to the landfill. There was a decreasing trend for pH at monitoring well B-24r. The decrease in pH ranged from 7.13 to 6.62 and will continue to be monitored during future sampling events, and does not suggest a release from the landfill. No other trends or spikes were observed during this monitoring event.

Mr. Richard Conforti
August 31, 2009
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The next sampling event (annual event) is currently scheduled for November 2009. If you have any questions, please feel free to contact either of us at (248) 477-5701.

Very truly yours,


O'BRIEN & GERE ENGINEERS, INC.



Scott L. Cormier, P.E.
Vice President

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.



Clifford S. Yantz, P.G.
Technical Associate

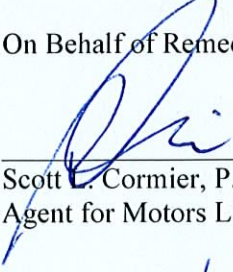
Enclosure

cc: Scott Haeger – Motors Liquidation Company
Marianne Secrest – O'Brien & Gere

Mr. Richard Conforti
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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

On Behalf of Remediation and Liability Management Company, Inc.



Scott V. Cormier, P.E.
Agent for Motors Liquidation Company

Vice President – O'Brien & Gere Engineers, Inc.
Title

Date

9/3/09

cc: file

Tables

Table 1
REALM - Coldwater Road Facility
Depth to Ground Water Levels in Monitoring Wells
June 24, 2009

Well	Top Of Casing Elev. (ft) *	Depth To Water (ft)	Static Water Elev. (ft)
B-2D	805.18	53.63	751.55
B-7	815.20	22.51	792.69
B-9	809.16	3.23	805.93
B-18A	812.25	24.07	788.18
B-19A	813.89	6.65	807.24
B-19AR	813.15	37.45	775.70
B-20D	816.61	70.21	746.40
B-21D	822.60	81.48	741.12
B-22D	823.73	86.21	737.52
B-23DR	813.72	83.71	730.01
B-24R	817.37	12.50	804.87
B-27D**	814.36	77.85	736.51
B-28	818.07	5.95	812.12

Notes

Casing elevations were provided by Bartow & King Engineers and are in feet relative to National Geodetic Vertical Datum

* - Top of casing elevations were resurveyed in May 2005 after the installation of the replacement wells.

R - Indicates a replacement well location.

** - Top of casing elevation was surveyed in December 2005 after the installation of the new well.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-2D	6/21/1995	5.3	<10	9.0	434	15.0	<20	<20	<30	<20	--	--	--
	8/31/1995	6.3	130	8.3	479	14.4	<20	<20	<40	<20	--	--	--
	2/9/1996	--	--	--	--	--	--	--	--	--	--	--	--
	6/19/1996	5.2	<100	7.5	580	12.4	<20	<20	<20	<20	--	--	--
	8/21/1996	7.4	<5	7.7	641	13.9	<20	<20	<20	50	--	--	--
	11/13/1996	11.0	<5	7.3	769	7.6	<20	<20	<20	30	--	--	--
	5/6/1997	26.0	<100	6.3	1500	7.0	10	<10	28	30	--	--	--
	11/6/1997	15.0	<100	6.9	660	9.0	<10	<10	39	<10	280	577	--
	5/4/1998	29.0	12	6.7	549	12.4	<10	<10	<5	<10	--	--	--
	11/5/1998	52.0	18	4.7	498	8.6	<10	<10	<5	10	<10	17	33,600
	4/26/1999	52.0	<100	8.5	523	14.5	<10	<10	<5	<10	--	--	--
	11/5/1999	6.4	<100	7.4	405	12.8	<10	<10	<5	40	70	21	35,100
	4/26/2000	5.4	<100	8.0	770	17.4	<10	<10	<5	<10	--	--	--
	12/8/2000	5.5	<10	6.7	610	9.7	<10	<10	9	<10	40	--	22,900
	5/15/2001	5.5	<100	7.8	890	13.2	<10	<10	<5	<10	--	--	--
	10/18/2001	4.1	<100	7.4	1830	9.4	<10	<10	<5	<10	230	--	12,900
	Dup. 10/18/2001	3.6	<100	7.4	1780	7.8	<10	<10	<5	<10	210	--	12,700
5/16/2002	4.0	<100	7.2	1000	11.6	<10	<10	<5	<10	--	--	--	
11/7/2002	2.6	<30	7.4	490	9.5	<5	<5	<5	<5	140	8	11,900	
Dup. 11/7/2002	2.7	<30	--	--	--	<5	<5	<5	<5	140	6	11,200	
6/3/2003	4.4	<30	6.9	530	12.9	<5	<5	<5	<5	--	--	--	
11/13/2003	2.8	<30	8.0	630	7.7	<5	<5	<5	<5	110	7	--	
6/30/2004	4.2	<30	6.3	570	15.8	<5	<5	<5	7	--	--	--	
12/10/2004	2.0	<30	6.8	550	10.2	<5	<5	<5	10	760	145	10,700	
6/8/2005	2.0	<30	8.0	620	11.5	<5	<5	<5	<5	660	199	10,900	
12/8/2005	3.0	<30	6.9	642	10.2	9	<4	<5	<10	140	120	13,300	
6/28/2006	6.3	<30	7.4	671	12.2	<5	<4	<5	8	110	70	15,000	
Dup. 6/28/2006	5.1	<30	7.4	682	12.2	<5	<4	<5	8	120	70	15,200	
11/30/2006	5.1	43.3	7.2	677	8.4	<5	<4	<5	18	--	--	--	
6/8/2007	2.4	69.1	6.8	644	14.1	8	2	1	6	110	104	14,800	
11/14/2007	5.2	<30	7.1	783	14.9	1	1	4	9	--	--	--	
6/25/2008	5.7	<60	6.9	920	18.4	<5	1	5	7	350	32	26,100	
11/20/2008	4.5	<30	6.8	806	9.1	<5	<1	<5	<5	--	--	--	
6/25/2009	5.6	<30	7.0	924	23.7	<5	203	<5	113	22	77	29,700	

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	
B-7	6/21/1995	8.7	23	7.5	1509	13.8	<20	<20	<30	<20	--	--	--	
	8/31/1995	--	--	--	--	--	<20	<20	<40	<20	--	--	--	
	2/9/1996	14.0	120	--	--	--	<20	<20	<40	22	--	--	--	
	6/19/1996	20.0	<100	6.9	1508	13.2	<20	<20	<20	20	--	--	--	
	8/21/1996	55.0	26	7.6	1567	17.1	<20	<20	<20	60	--	--	--	
	11/13/1996	27.0	<5	8.0	1960	7.2	<20	<20	<20	50	--	--	--	
	5/6/1997	16.0	<100	7.2	780	11.0	<10	10	14	10	--	--	--	
	11/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	5/4/1998	6.0	<5	6.6	1270	10.7	<10	<10	<5	20	--	--	--	
	11/5/1998	4.0	<10	4.6	1240	11.2	<10	<10	8	30	10	424	31,000	
	4/26/1999	3.9	<100	7.5	1413	14.2	<10	<10	10	<10	--	--	--	
	11/5/1999	5.1	<100	6.5	1230	14.2	<10	<10	8	30	260	313	41,800	
	4/26/2000	4.8	<100	7.6	1450	10.2	<10	<10	<5	<10	--	--	--	
	Dup.	4/26/2000	5.9	<100	NS	NS	NS	<10	<10	6	10	--	--	--
		12/8/2000	4.2	<10	7.1	1180	9.5	<10	<10	20	10	50	--	58,900
5/16/2001		5.0	<100	7.3	1330	13.0	<10	<10	7	<10	--	--	--	
10/18/2001		5.3	<100	7.2	1210	12.5	<10	<10	5	<10	330	--	60,800	
5/16/2002		3.9	<100	7.2	1850	11.9	<10	<10	<5	10	--	--	--	
11/7/2002		NR	NR	7.4	1120	10.3	<5	<5	5	5	250	<5	65,500	
6/4/2003		3.3	<30	6.9	1460	12.6	<5	<5	<5	<5	--	--	--	
11/13/2003		3.9	<30	6.9	1590	9.6	<5	<5	<5	5	190	<5	--	
6/30/2004		4.3	43	7.1	1353	16.0	<5	<5	9	7	--	--	--	
12/9/2004		4.0	<30	5.3	1290	10.8	<5	<5	7	14	180	74	71,200	
6/8/2005		7.0	86	7.4	1121	10.9	5	<5	9	13	170	31	81,900	
12/7/2005		7.5	<30	8.7	1430	12.2	10	<4	6	20	150	50	85,300	
6/29/2006		4.3	<30	7.2	1470	11.7	5	<4	9	18	190	150	76,900	
11/29/2006		4.4	<30	6.9	1380	15.3	<5	<4	9	11	--	--	--	
6/7/2007		3.9	23.7	6.9	1400	13.4	11	27	5	14	130	42	87,300	
11/14/2007	3.5	<30	6.9	1350	13.4	14	6	16	20	--	--	--		
6/25/2008	3.8	72.9	6.9	1410	20.7	<5	3	6	<5	350	10	94,800		
11/17/2008	4.6	20.5	6.8	1258	5.5	<5	3	5	17	--	--	--		
6/24/2009	4.5	<30	6.9	1184	20.0	<5	3	<5	14	67	36	84,500		

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-9	6/21/1995	3.5	34	7.7	2400	14.6	<20	<20	<30	<20	--	--	--
	8/31/1995	3.9	<10	7.7	1829	14.8	37	43	<40	<20	--	--	--
	2/9/1996	3.1	<10	7.3	2860	8.0	<20	<20	<40	<20	--	--	--
	6/19/1996	2.1	<100	6.8	2550	11.5	<20	<20	<20	<20	--	--	--
	8/21/1996	2.3	<5	8.0	2310	16.4	<20	<20	<20	70	--	--	--
	11/13/1996	71.0	<5	6.8	3280	9.2	<20	<20	<20	40	--	--	--
	5/6/1997	3.0	<100	6.8	2600	10.0	<10	<10	51	20	--	--	--
	11/6/1997	2.0	<100	6.5	2800	11.0	<10	<10	183	40	650	741	--
	5/4/1998	3.0	<5	6.6	2400	14.5	10	10	18	40	--	--	--
	11/5/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/1999	4.0	<100	7.7	1860	12.2	<10	<10	19	20	--	--	--
	11/5/1999	2.5	<100	6.8	2340	15.4	<10	<10	20	30	610	1280	47,100
	4/26/2000	5.5	<100	7.6	2780	9.5	<10	<10	12	30	--	--	--
	12/8/2000	5.0	<10	7.6	2400	7.8	<10	<10	46	<10	50	--	69,500
	5/16/2001	4.8	<100	7.4	1070	12.6	<10	<10	7	10	--	--	--
	10/17/2001	4.0	<100	7.5	2130	10.8	<10	<10	8	20	940	--	66,000
	5/16/2002	1.9	<100	7.2	2470	11.6	<10	<10	7	10	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/4/2003	2.2	57	6.8	2690	10.7	<5	<5	15	13	--	--	--
	11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/30/2004	3.8	NS	6.9	2379	12.7	<5	8	19	28	--	--	--
	12/9/2004	3.0	<30	5.9	2480	11.4	<5	<5	11	19	570	248	55,900
	6/8/2005	4.0	<30	7.1	2116	10.3	6	6	12	17	480	701	58,300
12/7/2005	5.0	<30	8.6	2830	11.9	11	5	12	40	320	410	58,500	
6/29/2006	1.9	<30	6.8	2820	12.4	6	6	13	19	390	330	63,600	
11/30/2006	2.7	36.7	7.2	2830	12.5	<5	6	<5	14	--	--	--	
6/5/2007	2.1	<30	6.7	2770	11.0	12	6	24	21	320	1,900	67,300	
11/16/2007	2.0	27.4	6.7	3000	9.4	2	6	24	18	--	--	--	
7/2/2008	1.8	36.4	6.4	3060	19.7	<5	4	13	19	780	812	64,200	
11/20/2008	2.2	15.9	6.4	3290	8.1	<5	<1	13	<5	--	--	--	
Dup.	11/20/2008	2.0	127	6.4	3280	8.1	<5	<1	13	<5	--	--	--
	6/25/2009	1.6	<30	6.7	2700	19.8	<5	<1	<5	<5	59	173	65,300

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-14	6/21/1995	4.0	<10	--	--	--	<20	<20	<30	<20	--	--	--
	8/31/1995	--	25	--	--	--	<20	<20	<40	<20	--	--	--
	2/9/1996	3.0	<10	7.6	776	8.9	<20	<20	<40	<20	--	--	--
	6/19/1996	1.7	<100	7.3	704	13.6	<20	<20	<20	<20	--	--	--
	8/21/1996	2.6	<5	8.9	748	13.1	<20	<20	<20	60	--	--	--
	11/13/1996	76.0	<5	7.8	980	7.2	<20	<20	<20	40	--	--	--
	5/6/1997	3.0	<100	7.0	670	10.0	<10	<10	11	<10	--	--	--
	11/6/1997	2.0	<100	6.8	670	10.0	<10	<10	43	10	550	67	--
	5/4/1998	6.0	<5	6.7	558	13.3	<10	<10	<5	<10	--	--	--
	11/5/1998	2.0	<10	6.4	642	9.9	<10	<10	<5	10	<10	<5	13,900
	4/26/1999	4.5	<100	8.0	488	13.3	<10	<10	<5	30	--	--	--
	11/5/1999	NS	NS	7.3	609	14.2	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	7.1	<100	7.4	510	14.7	<10	<10	<5	960	--	--	--
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/15/2001	5.0	--	7.8	510	13.2	<10	<10	6	380	--	--	--
	10/18/2001	2.1	<100	7.3	750	10.7	<10	<10	8	90	260	--	21,500
	5/16/2002	2.3	NR	7.1	1790	12.1	<10	<10	<5	60	--	--	--
	11/7/2002	NR	NR	7.5	540	9.9	<5	<5	<5	31	170	15	14,400
	6/3/2003	2.4	<30	6.9	710	12.4	<5	<5	<5	54	--	--	--
	11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6/29/2004	2.8	<30	7.3	693	14.9	<5	<5	<5	26	--	--	--	
12/9/2004	5.0	<30	6.6	560	10.5	<5	<5	<5	1260	160	62	4,390	
Re-sample	2/10/2005	--	--	--	--	--	--	--	160	--	--	--	
	6/8/2005	4.0	<30	7.6	647	11.4	<5	<5	12	40	110	56	18,500
	12/8/2005	4.6	<30	6.1	818	1.6	8	<4	<5	30	210	40	16,000
Re-sample	2/14/2006	--	--	8.1	603	9.5	--	--	--	100	--	--	--
	6/27/2006	3.5	<30	7.1	767	13.2	<5	<4	<5	1090	160	90	14,600
Re-sample	8/3/2006	--	--	7.5	840	12.4	--	--	--	203	--	--	--
	12/1/2006	3.2	<30	7.4	873	12.3	<5	<5	<5	1440	--	--	--
Re-sample	1/30/2007	--	--	8	607	10.1	--	--	--	1850	--	--	--
	6/5/2007	1.6	26.1	7.0	849	11.0	9	3	1	355	520	245	15,200
	11/15/2007	1.2	16.1	7.1	803	7.8	2	1	4	134	--	--	--

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-18A	6/21/1995	2.7	<10	7.5	1048	13.3	<20	<20	<30	150	--	--	--
	8/31/1995	3.0	<10	7.9	989	13.2	<20	<20	<40	<20	--	--	--
	2/9/1996	2.3	<10	7.4	1021	9.3	<20	<20	<40	<20	--	--	--
	6/19/1996	1.4	<100	7.0	944	13.2	<20	<20	<20	<20	--	--	--
	8/21/1996	2.4	<5	7.5	1041	12.8	<20	<20	<20	60	--	--	--
	11/13/1996	19.0	<5	7.2	1331	6.4	<20	<20	<20	70	--	--	--
	5/6/1997	2.0	<100	6.5	900	10.0	<10	<10	13	10	--	--	--
	11/6/1997	4.0	<100	6.4	1100	10.0	<10	<10	62	10	380	62	--
	5/4/1998	2.0	<5	6.7	862	11.8	<10	<10	<5	20	--	--	--
	11/5/1998	1.0	<10	6.0	1090	11.8	<10	<10	<5	10	240	128	46,000
	4/26/1999	2.1	<100	8.1	921	14.0	<10	<10	<5	20	--	--	--
	11/5/1999	4.3	<100	7.1	832	14.0	<10	<10	<5	60	180	155	39,200
	4/26/2000	2.4	<100	7.5	980	10.4	<10	<10	<5	30	--	--	--
	12/8/2000	2.6	<10	7.0	990	9.9	<10	<10	15	<10	<10	--	34,500
	Dup. 12/8/2000	2.6	<10	--	--	--	<10	<10	13	<10	40	--	35,100
	5/16/2001	2.4	<100	7.9	1160	12.9	<10	<10	<5	10	--	--	--
10/17/2001	2.2	<100	7.1	1020	12.2	<10	<10	<5	<10	350	--	35,400	
5/16/2002	1.5	<100	7.2	2080	12.2	<10	<10	<5	10	--	--	--	
11/7/2002	1.9	<30	7.2	820	10.1	<5	<5	<5	<5	190	26	40,800	
6/4/2003	1.6	<30	6.9	790	13.1	<5	<5	<5	5	--	--	--	
11/13/2003	1	<30	7.7	1180	7.1	<5	<5	<5	<5	160	<5	--	
6/29/2004	1.2	<30	7.2	863	12.0	<5	<5	7	10	--	--	--	
12/9/2004	3	<30	6.2	960	10.5	<5	<5	9	12	900	363	37,900	
6/8/2005	2	<30	7.4	819	10.9	<5	<5	6	16	170	80	40,000	
12/8/2005	2.6	<30	9.7	1120	10.1	11	<4	<5	10	390	170	47,000	
6/27/2006	1.2	<30	7.1	1110	13.2	5	4	<5	46	170	50	48,200	
11/30/2006	1.4	119	7.2	1100	11.5	5	<4	<5	9	--	--	--	
6/4/2007	1	19.9	7.0	1070	13.2	9	3	3	14	110	22	51,800	
11/14/2007	<1	19	6.9	1090	13.7	1	2	6	11	--	--	--	
6/25/2008	12	34.1	7.1	1060	20.4	<5	2	<5	11	310	<5	54,800	
11/18/2008	<1	<30	6.6	1088	2.9	<5	<1	<5	<5	--	--	--	
6/24/2009	<1	<30	7.3	1060	26.2	<5	1	<5	15	<20	<5	53,100	

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Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-19A	6/21/1995	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/31/1995	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	2/9/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/19/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/21/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/13/1996	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/6/1997	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/4/1998	3.0	<5	6.8	1480	10.1	<10	<10	<5	30	--	--	--
	11/5/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/5/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2001	4.0	<100	7.1	1050	11.8	<10	<10	<5	<10	--	--	--
	10/17/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2002	6.0	<100	7.2	1740	10.6	<10	<10	<5	10	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/4/2003	5.8	<30	6.9	1350	12.9	<5	<5	<5	<5	--	--	--
	11/13/2003	3.4	<30	7.6	1620	10.2	<5	<5	<5	<5	20	<5	--
6/29/2004	3.9	<30	7.2	1316	14.7	<5	<5	<5	8	--	--	--	
12/9/2004	5.0	33	6.2	1340	9.9	<5	<5	<5	9	240	11	111,000	
Dup	12/9/2004	5.0	<30	--	--	--	<5	<5	<5	7	170	<5	114,000
B-19AR	6/7/2005	3.0	<30	7.1	829	12.2	<5	<5	7	<5	1,320	228	15,700
Dup	12/8/2005	5.5	<30	--	1390	--	10	<4	<5	20	160	<20	81,400
	12/8/2005	5.3	<30	7.1	1390	12.3	10	<4	<5	<10	150	<20	74,800
Re-sample	2/14/2006	--	--	8.0	840	5.9	<5	--	--	--	--	--	--
	6/29/2006	2.7	<30	7.6	860	12.0	<5	<4	12	21	240	210	22,400
	11/30/2006	6.2	33.7	7.2	1300	11.4	5	<4	<5	<5	--	--	--
	6/7/2007	2	<30	7.0	899	11.4	6	4	4	9	70	21	19,700
	11/13/2007	1.5	<30	7.3	1070	12.1	3	7	26	11	--	--	--
	6/25/2008	2.4	38.8	7.1	1060	17.4	<5	3	<5	16	380	9	18,500
	11/18/2008	1.3	<30	7.0	1052	8.0	<5	1	<5	14	--	--	--
	6/24/2009	1.0	<30	7.7	911	17.3	<5	2	<5	<5	36	<5	21,200

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Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-20D	6/21/1995	2.8	<10	8.3	771	15.1	<20	<20	<30	<20	--	--	--
	8/31/1995	4.7	47	8.1	1204	14.6	<20	20	<40	<20	--	--	--
	2/9/1996	21.0	38	7.1	801	9.1	32	28	54	120	--	--	--
	6/19/1996	2.4	<100	7.9	745	11.9	<20	<20	<20	<20	--	--	--
	8/21/1996	3.0	<5	8.0	750	13.1	<20	<20	<20	40	--	--	--
	11/13/1996	16.0	<5	7.7	1075	6.7	<20	<20	<20	40	--	--	--
	5/6/1997	3.0	<100	6.8	640	10.0	<10	<10	15	10	--	--	--
	11/6/1997	5.0	<100	6.7	700	10.0	<10	20	41	<10	260	35	--
	5/4/1998	4.0	<5	6.8	579	12.2	<10	<10	<5	<10	--	--	--
	11/5/1998	3.0	11	6.5	667	13.5	<10	<10	<5	10	<10	18	31,000
	Dup. 11/5/1998	5.0	16	6.5	677	13.6	<10	<10	<5	10	170	8	30,300
	4/26/1999	3.2	<100	8.4	506	13.0	<10	<10	<5	10	--	--	--
	11/5/1999	5.3	<100	7.5	677	12.5	<10	<10	<5	60	130	60	31,400
4/26/2000	3.2	<100	7.4	760	14.9	<10	<10	<5	<10	--	--	--	
12/8/2000	3.2	<10	7.5	780	4.7	<10	<10	15	<10	20	--	19,700	
5/15/2001	2.7	<100	7.0	590	13.0	<10	<10	<5	<10	--	--	--	
10/18/2001	2.5	<100	7.9	930	10.4	<10	<10	<5	<10	300	--	20,600	
5/16/2002	3.2	<100	7.2	780	11.9	<10	<10	<5	10	--	--	--	
11/7/2002	1.8	<30	7.6	610	8.7	<5	<5	<5	<5	250	74	20,900	
6/3/2003	2.5	<30	7.4	620	12.8	<5	<5	<5	<5	--	--	--	
11/13/2003	1.3	<30	8.0	630	7.7	<5	<5	5	<5	200	15	--	
6/29/2004	9.4	<30	7.5	666	13.1	<5	<5	11	<5	--	--	--	
12/10/2004	2.0	<30	6.6	830	10.8	<5	<5	11	10	2,110	92	16,800	
6/7/2005	4.0	<30	7.3	707	11.9	7	<5	5	<5	2,140	66	16,500	
12/8/2005	4.1	<30	4.8	957	11.1	11	<4	26	<10	120	120	20,600	
6/28/2006	1.7	<30	7.4	979	12.5	7	<4	<5	5	2,120	60	17,600	
11/30/2006	3.4	<30	7.5	980	12.5	6	<4	6	<5	--	--	--	
6/8/2007	3.4	30.9	6.7	929	13.4	10	22	19	124	610	160	25,500	
11/13/2007	2.1	<30	7.2	932	13.5	3	1	13	9	--	--	--	
6/25/2008	<1	<60	7.0	946	15.5	<5	2	<5	7	2,400	55	19,500	
11/18/2008	1	36.1	6.9	1006	12.6	<5	4	6	22	--	--	--	
6/24/2009	1.1	<30	7.2	1000	19.4	<5	<1	<5	<5	1,720	56	21,000	
Dup. 6/24/2009	<1	<30	7.2	1010	19.4	<5	<1	<5	<5	1,640	56	20,800	

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Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-21D	6/21/1995	4.2	<10	8.3	870	14.5	<20	<20	<30	61	--	--	--
	8/31/1995	3.3	19	8.1	684	14.2	<20	21	<40	<20	--	--	--
	2/9/1996	4.1	<10	7.7	646	8.6	<20	<20	<40	<20	--	--	--
	6/19/1996	5.3	<100	7.6	577	14.1	<20	<20	<20	<20	--	--	--
	8/21/1996	2.5	<5	7.9	576	13.8	<20	<20	<20	50	--	--	--
	11/13/1996	17.0	<5	7.3	810	8.8	<20	<20	<20	40	--	--	--
	5/6/1997	2.0	<100	6.8	530	10.2	<10	<10	8	<10	--	--	--
	11/6/1997	3.0	<100	6.7	540	10.0	<10	<10	30	<10	240	27	--
	5/4/1998	16.0	<5	6.9	480	11.5	<10	<10	<5	20	--	--	--
	11/5/1998	5.0	<10	7.2	565	7.8	<10	<10	<5	10	240	43	26,700
	4/26/1999	11.0	<100	8.2	506	13.0	<10	<10	<5	10	--	--	--
	11/5/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	2.5	<100	8.2	660	14.1	<10	<10	<5	<10	--	--	--
	12/8/2000	4.2	<10	8.4	680	7.1	<10	<10	11	<10	<10	--	29,600
	Dup	5/15/2001	1.9	<100	7.9	570	13.0	<10	<10	<5	10	--	--
5/15/2001		1.9	<100	8.3	560	13.0	<10	<10	<5	10	--	--	--
10/18/2001		3.4	<100	7.6	570	13.7	<10	<10	<5	<10	200	--	22,200
5/16/2002		6.1	<100	7.2	630	11.7	<10	<10	<5	<10	--	--	--
11/7/2002		NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6/3/2003		5.8	<30	7.3	510	13.0	<5	<5	<5	6	--	--	--
11/13/2003		1.0	<30	7.8	710	8.7	<5	<5	<5	9	100	<5	--
6/30/2004		4.0	<30	6.8	570	14.8	<5	<5	<5	7	--	--	--
12/10/2004		2.0	<30	6.4	600	9.9	<5	<5	<5	7	1,330	44	20,100
6/8/2005		3.0	<30	7.7	560	14.2	<5	<5	12	6	1,350	72	21,000
12/8/2005		4.4	<30	5.5	741	11.4	8	<4	8	<10	1,070	60	21,500
6/28/2006		1.5	<30	7.4	718	12.8	<5	6	5	13	430	60	23,500
11/30/2006		1.8	49.1	7.6	693	11.5	<5	<4	<5	<5	--	--	--
6/8/2007		1.2	<30	6.3	709	13.2	10	2	5	7	1,200	49	21,500
11/14/2007		<1	<30	7.3	738	14.5	2	1	5	8	--	--	--
6/26/2008	1.8	16.8	7.1	738	16.9	<5	1	<5	<5	1,390	40	22,700	
11/19/2008	1.1	<30	6.9	739	11.0	<5	<1	5	<5	--	--	--	
6/25/2009	<1	<30	6.7	743	16.1	<5	<1	<5	<5	1,210	34	25,100	

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Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-22D	6/21/1995	2.6	<10	7.7	573	15.5	<20	<20	370	<20	--	--	--
	8/31/1995	4.5	47	8.3	739	14.3	<20	<20	<40	47	--	--	--
	2/9/1996	6.9	<10	NS	NS	NS	<20	<20	<40	80	--	--	--
	6/19/1996	1.8	<100	7.5	600	13.4	<20	<20	<20	20	--	--	--
	8/21/1996	1.7	<5	8.1	608	14.2	<20	<20	<20	50	--	--	--
	11/13/1996	10.0	<5	7.2	817	7.7	<20	<20	<20	50	--	--	--
	5/6/1997	2.0	<100	6.7	550	10.1	<10	<10	<5	<10	--	--	--
	11/6/1997	7.0	<100	6.9	550	10.0	<10	<10	29	10	1,360	55	--
	5/4/1998	5.0	<5	7.1	501	11.7	<10	<10	<5	<10	--	--	--
	11/5/1998	6.0	<10	6.6	559	9.8	<10	<10	<5	10	1,180	47	23,800
	4/26/1999	18.0	<100	8.2	485	13.2	<10	<10	<5	10	--	--	--
	11/5/1999	2.6	<100	7.3	474	13.6	<10	<10	<5	20	90	31	27,900
	4/26/2000	2.5	<100	8.2	670	14.2	<10	<10	<5	<10	--	--	--
	12/8/2000	2.5	<10	7.5	510	5.4	<10	<10	8	<10	<10	--	26,500
	5/15/2001	6.7	<100	8.0	690	13.7	<10	<10	6	30	--	--	--
	10/18/2001	1.7	<100	7.6	2610	10.2	<10	<10	<5	<10	200	--	27,800
	5/16/2002	3.2	<100	7.1	630	12.1	<10	<10	<5	<10	--	--	--
	11/7/2002	1.5	<30	7.4	480	8.8	<5	<5	<5	<5	120	11	25,200
	6/3/2003	2.3	<30	6.8	570	13.1	<5	<5	<5	<5	--	--	--
	11/14/2003	1.6	<30	8.1	660	9.8	<5	<5	<5	9	6	<5	--
	6/30/2004	1.7	<30	6.3	610	15.5	<5	<5	<5	6	--	--	--
	12/10/2004	2.0	<30	7.0	600	10.3	<5	<5	<5	6	1,280	37	25,100
	6/8/2005	2.0	<30	7.7	531	13.2	6	<5	<5	<5	1,370	38	23,700
12/8/2005	2.7	<30	5.8	702	11.7	10	<4	46	<10	2,200	250	25,400	
6/28/2006	<1	<30	7.5	682	13.0	<5	<4	<5	<5	1,290	30	25,800	
11/30/2006	2.2	<30	7.5	684	13.3	<5	<4	<5	7	--	--	--	
Dup.	11/30/2006	5.3	<30	7.5	676	13.3	<5	<4	<5	--	--	--	
	6/8/2007	3.8	<30	6.6	680	14.3	7	2	1	5	1,180	32	28,100
Dup.	6/8/2007	3.1	21.1	6.6	669	14.3	9	2	1	4	1,210	31	28,400
	11/14/2007	1.1	<30	7.3	710	14.2	2	2	3	6	--	--	--
	6/26/2008	1.7	22.6	7.1	694	19.3	<5	<1	<5	5	1,100	33	25,900
Dup.	6/26/2008	2.6	<30	7.1	710	19.3	<5	<1	<5	7	1,150	34	26,400
	11/19/2008	8.9	<30	6.9	699	8.2	<5	<1	8	8	--	--	--
	6/25/2009	1.1	<30	6.7	705	16.6	<5	<1	<5	<5	1,340	30	28,500

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Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	
B-23D	6/21/1995	3.4	<10	7.3	680	15.1	<20	<20	<30	<20	--	--	--	
	8/31/1995	3.9	96	8.2	845	15.4	<20	<20	<40	<20	--	--	--	
	2/9/1996	3.8	34	7.5	751	11.3	<20	<20	<40	<20	--	--	--	
	6/19/1996	2.2	<100	8.3	632	14.2	<20	<20	<20	<20	--	--	--	
	8/21/1996	1.7	<5	8.9	691	14.6	<20	<20	<20	50	--	--	--	
	11/13/1996	40.0	<5	7.7	977	7.6	<20	<20	<20	40	--	--	--	
	5/6/1997	2.0	<100	6.8	610	11.0	<10	<10	9	<10	--	--	--	
	11/6/1997	3.0	<100	6.0	620	10.0	<10	<10	31	<10	160	15	--	
	5/4/1998	2.0	<5	6.4	558	12.2	<10	<10	<5	<10	--	--	--	
	11/5/1998	5.0	<10	6.5	639	9.8	<10	<10	<5	70	<10	<5	29,700	
	4/26/1999	3.6	<100	8.1	552	13.3	<10	<10	<5	<10	--	--	--	
	Dup	4/26/1999	3.0	<100	NS	NS	NS	<10	<10	<5	<10	--	--	--
	Dup	11/5/1999	3.4	<100	7.4	546	13.3	<10	<10	<5	<10	80	14	34,700
	Dup	11/5/1999	3.1	<100	NS	NS	NS	<10	<10	<5	<10	90	15	33,300
	4/26/2000	3.2	<100	7.9	800	13.7	<10	<10	<5	<10	--	--	--	
12/8/2000	2.0	<10	7.0	570	7.0	<10	<10	7	<10	60	--	35,400		
5/15/2001	3.2	<100	7.9	790	13.1	<10	<10	<5	10	--	--	--		
10/17/2001	1.8	<100	7.5	600	11.3	<10	<10	<5	<10	170	--	32,800		
5/16/2002	5.4	<100	7.2	1200	11.2	<10	<10	<5	10	--	--	--		
11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
6/3/2003	3.9	<30	6.9	640	12.9	<5	<5	<5	<5	--	--	--		
Dup	6/3/2003	3.7	<30	--	--	--	<5	<5	<5	<5	--	--	--	
11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS		
6/30/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--		
12/10/2004	2.0	<30	6.7	640.0	11.3	<5	<5	11	10	500	65	30,500		
B-23DR	6/7/2005	2.0	<30	7.3	594.0	12.2	<5	<5	<5	<5	2,520	49	20,600	
Dup	6/7/2005	2.0	<30	--	--	--	<5	<5	<5	<5	2,580	48	20,600	
B-23DR	12/8/2005	3.8	<30	6.2	700.0	6.1	7	<4	<5	<10	370	60	39,200	
6/27/2006	1.2	<30	7.1	760.0	13.4	5	<4	<5	5	2,280	50	20,500		
11/30/2006	2.2	<30	7.6	568.0	11.8	<5	<4	<5	6	--	--	--		
6/8/2007	1.1	33.7	6.5	736	13.1	7	1	1	5	1,100	43	23,800		
11/16/2007	<1	<30	7.3	780	21.4	2	1	3	8	--	--	--		
6/26/2008	2.0	27.2	7.0	753	18.2	<5	1	<5	<5	1,850	44	23,700		
11/21/2008	<1	<30	6.7	763	6.0	<5	<1	<5	19	--	--	--		
6/25/2009	<1	<30	6.7	776	18.9	<5	<1	<5	<5	1,500	43	23,900		

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-24	6/21/1995	--	--	--	--	--	--	--	--	--	--	--	--
	8/31/1995	--	--	--	--	--	--	--	--	--	--	--	--
	2/9/1996	--	--	--	--	--	--	--	--	--	--	--	--
	6/19/1996	--	--	--	--	--	--	--	--	--	--	--	--
	8/21/1996	5.6	<5	7.8	1502	12.7	<20	<20	<20	90	--	--	--
	11/13/1996	20.0	<5	7.1	2030	7.8	<20	<20	<20	50	--	--	--
	5/6/1997	5.0	<100	6.4	1700	10.0	<10	<10	31	10	--	--	--
	11/6/1997	--	--	--	--	--	--	--	--	--	--	--	--
	5/4/1998	4.0	<5	6.5	1410	11.6	<10	<10	8	20	--	--	--
	11/5/1998	4.0	23	5.5	1595	10.4	<10	<10	9	20	60	120	27,700
	4/26/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	11/5/1999	NS	NS	7.2	1152	13.8	NS	NS	NS	NS	NS	NS	NS
	4/26/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/15/2001	NS	NS	6.4	1450	12.9	NS	NS	NS	NS	NS	NS	NS
	10/17/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/3/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
6/30/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
12/9/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	
B-24R	6/7/2005	8.0	<30	7.3	857	10.6	8	<5	<5	<5	10,600	448	27,100
B-24R	12/8/2005	6.6	<30	5.2	1120	11.9	11	<4	<5	10	3,180	210	28,700
	6/28/2006	4.7	<30	7.3	1080	11.9	6	<4	<5	<5	3,760	210	27,700
	11/30/2006	4.8	30	7.3	1100	11.7	6	<4	<5	<5	--	--	--
	6/4/2007	4.5	110	7.2	1080	11.0	9	2	2	19	2,400	194	27,900
	11/13/2007	4.1	30.1	7.1	1130	14.0	3	1	5	7	--	--	--
	6/26/2008	4.3	<30	7.0	1130	19.0	<5	1	<5	8	3,490	175	39,600
	11/18/2008	3.8	<30	6.8	1125	5.3	<5	<1	<5	<5	--	--	--
	6/24/2009	5.2	<30	6.6	1120	17.4	<5	<1	<5	<5	4,000	155	38,400

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-27D	12/8/2005	3.7	<30	5	714	4.8	9	<4	6	<10	240	140	34,200
	6/27/2006	1.3	<30	7.1	644	13.5	6	<4	7	6	1,050	110	32,300
	11/30/2006	<1	<30	7.5	540	11.7	<5	<4	<5	6	--	--	--
	6/8/2007	4	25.7	6.6	628	14.6	9	2	3	36	1,520	58	36,300
	11/15/2007	1.9	<30	7.3	649	11.6	2	1	5	32	--	--	--
	6/26/2008	1.7	<30	7.1	659	16.3	<5	<1	<5	<5	300	59	33,900
	11/21/2008	1.3	<30	6.8	667	6.6	<5	<1	<5	<5	--	--	--
	6/25/2009	<1	<30	6.8	651	16.5	<5	1	<5	<5	2,030	52	37,200

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-28	11/21/2005	--	--	6.2	994	12.3	--	--	--	<5	--	--	--
Dup.	11/21/2005	--	--	6.2	--	12.3	--	--	--	7	--	--	--
	6/27/2006	3	<30	7.1	828	13.2	5	<4	<5	18	2,380	210	17,000
	12/1/2006	2.4	<30	7.5	812	12.3	<5	<4	<5	5	--	--	--
Dup.	12/1/2006	3.3	<30	7.5	810	12.3	<5	<4	<5	<5	--	--	--
	6/5/2007	2.1	<30	6.8	845	10.6	9	2	3	6	1,690	160	25,100
	11/15/2007	2.5	15	6.8	816	9.1	3	2	5	11	--	--	--
	6/27/2008	1.8	<30	6.9	840	17.6	<5	1	<5	5	370	84	16,300
	11/19/2008	1.1	<30	6.8	804	7.0	<5	<1	<5	<5	--	--	--
	6/24/2009	1.1	<30	7.0	822	19.5	<5	<1	<5	<5	204	132	14,600

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-29	11/21/2005	--	--	6.8	1870	11.7	--	--	--	11	--	--	--
	6/27/2006	--	--	7.1	1480	12.3	6	<4	<5	28	1,480	140	47,300
	12/1/2006	--	--	7.3	--	11.4	8	<4	5	9	--	--	--
	6/5/2007	2.4	31.1	6.9	1,402	10.3	11	3	3	8	800	118	46,300
	11/15/2007	3.2	17.3	6.9	1,370	12.2	4	2	7	14	--	--	--
Dup.	11/15/2007	2.7	16.5	6.9	1,380	12.2	3	2	7	10	--	--	--

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
B-30	11/21/2005	--	--	6.8	1450	12.1	--	--	--	212	--	--	--
	6/27/2006	--	--	7.1	1330	12.3	6	<4	<5	16	2,690	100	21,300
	12/1/2006	--	--	7.3	--	10.6	6	<4	<5	8	--	--	--
	6/5/2007	2.7	<30	7.0	1542	10.9	11	4	4	17	1,260	171	25,000
	11/15/2007	2.4	17.4	7.0	1510	9.3	4	3	7	14	--	--	--

See notes on page 16.

Table 2
REALM-Coldwater Road Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, and Metals

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na
Equipment Blank	12/10/2004	<1	<30	--	--	--	<5	<5	<5	11	<20	13	810
	6/8/2005	<1	<30	--	--	--	<5	<5	<5	<5	<20	<5	120
	12/8/2005	<1	<30	--	5	--	<5	<4	<5	<10	<100	<20	<1000
	6/28/2006	<1	<30	--	12	--	<5	<4	<5	<5	<100	<20	<1000
	12/1/2006	<1	<30	--	26	--	<5	<4	<5	<5	--	--	--
	6/8/2007	<1	26	--	13	--	<5	1	1	13	<20	11	340
	11/15/2007	<1	<30	--	4	--	<5	1	1	9	--	--	--
	6/26/2008	<1	<30	--	3	--	<5	1	<5	<5	100	7	420
	11/19/2008	<1	<30	--	6	--	<5	1	<5	<5	--	--	--
	6/25/2009	<1	<30	--	24	--	<5	<1	<5	<5	110	<5	200

Notes

- 1) < = Not detected.
- 2) NS = Not sampled, insufficient liquid encountered.
- 3) NR = No Result, insufficient sample volume.
- 4) T = Temperature in degrees Celsius.
- 5) -- = Not analyzed.
- 6) Dup = Duplicate sample.

Table 3
REALM - Coldwater Road Facility
Post-Closure Monitoring -Historical Analytical Results
Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Inorganics (mg/L)			
		Chloride	Cyanide	Phenols	Sulfate
B-2D	11/6/1997	12	<0.005	<0.020	79
	12/23/1998	13	<0.005	<0.020	40
	11/5/1999	4	<0.005	<0.020	42
	12/8/2000	7	<0.005	<0.020	81
	10/18/2001	2	<0.005	<0.020	32
	Dup 10/18/2001	1	<0.005	<0.020	32
	11/7/2002	2	<0.005	<0.020	32
	Dup 11/7/2002	2	<0.005	<0.020	30
	11/13/2003	2	<0.005	<0.010	31
	12/10/2004	2	<0.005	<0.010	35
	6/8/2005	<5	<0.005	<0.010	34
	6/28/2006	2	<0.005	<0.010	50
	Dup 6/28/2006	3	<0.005	<0.010	50
	6/8/2007	4	<0.005	<0.010	44
6/25/2008	10	<0.005	<0.010	98	
6/25/2009	10	<0.005	<0.010	104	
B-7	11/6/1997	NS	NS	NS	NS
	12/23/1998	58	<0.005	<0.020	161
	11/5/1999	64	<0.005	<0.020	301
	12/8/2000	79	<0.005	<0.020	227
	10/17/2001	81	<0.005	NA	205
	11/7/2002	NA	NA	NA	NA
	11/13/2003	85	<0.005	<0.010	279
	12/9/2004	78	<0.005	<0.010	251
	6/8/2005	80	<0.005	<0.010	254
	6/29/2006	73	<0.005	<0.010	270
	6/7/2007	72	<0.005	<0.010	208
	6/25/2008	68	<0.005	<0.010	222
	6/24/2009	40	<0.005	<0.010	154
	B-9	11/6/1997	141	<0.005	<0.020
12/23/1998		NS	NS	NS	NS
11/5/1999		128	<0.005	<0.020	1,222
12/8/2000		142	<0.005	<0.020	1,246
10/17/2001		122	<0.005	NA	1,150
11/7/2002		NS	NS	NS	NS
11/13/2003		NS	NS	NS	NS
12/9/2004		149	<0.005	<0.010	1,350
6/8/2005		128	<0.005	<0.010	1,160
6/29/2006		125	<0.005	<0.010	1,150
6/5/2007		112	<0.005	<0.010	1,120
7/2/2008		133	<0.005	<0.010	1,280
6/25/2009		107	<0.005	<0.010	1,120
B-14		11/6/1997	12	<0.005	<0.020
	12/23/1998	8	<0.005	<0.020	47
	11/5/1999	NS	NS	NS	NS
	12/8/2000	NS	NS	NS	NS
	10/17/2001	6	<0.005	NA	72
	11/7/2002	NA	NA	NA	NA
	11/13/2003	NS	NS	NS	NS
	12/9/2004	5	<0.005	<0.010	84
	6/8/2005	8	<0.005	<0.010	79
	6/27/2006	6	<0.005	<0.010	93
	6/5/2007	10	<0.005	<0.010	82
B-18A	11/6/1997	12	<0.005	<0.020	130
	12/23/1998	10	<0.005	<0.020	133
	11/5/1999	8	<0.005	<0.020	130
	12/8/2000	7	<0.005	<0.020	126
	Dup 12/8/2000	7	<0.005	<0.020	112
	10/17/2001	7	<0.005	<0.020	132
	11/7/2002	10	<0.005	<0.020	134
	11/13/2003	10	<0.005	<0.010	129
	Dup 11/13/2003	11	<0.005	<0.010	130
	12/9/2004	14	<0.005	<0.010	127
	6/8/2005	11	<0.005	<0.010	120
	6/27/2006	13	<0.005	<0.010	125
	6/4/2007	15	<0.005	<0.010	114
	6/25/2008	15	<0.005	<0.010	110
	6/24/2009	16	<0.005	<0.010	111

Table 3
REALM - Coldwater Road Facility
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Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Inorganics (mg/L)					
		Chloride	Cyanide	Phenols	Sulfate		
B-19A	11/6/1997	WD	WD	WD	WD		
	12/23/1998	NS	NS	NS	NS		
	11/5/1999	NS	NS	NS	NS		
	12/8/2000	NS	NS	NS	NS		
	10/17/2001	NS	NS	NS	NS		
	11/7/2002	NS	NS	NS	NS		
	11/13/2003	148	<0.005	<0.010	229		
	12/9/2004	116	<0.005	<0.010	233		
	Dup	12/9/2004	116	<0.005	<0.010	233	
	B-19AR	6/7/2005	52	<0.005	<0.010	130	
		6/29/2006	51	<0.005	<0.010	153	
		6/7/2007	58	<0.005	<0.010	136	
		6/25/2008	58	<0.005	<0.010	148	
		6/24/2009	60	<0.005	<0.010	147	
B-20D	11/6/1997	5	<0.005	<0.020	101		
	12/23/1998	3	<0.005	<0.020	92		
	Dup	12/23/1998	3	<0.005	<0.020	89	
	11/5/1999	33	<0.005	<0.020	105		
	12/8/2000	2	<0.005	<0.020	113		
	10/17/2001	2	<0.005	<0.020	105		
	11/7/2002	3	<0.005	<0.020	115		
	11/13/2003	5	<0.005	<0.010	127		
	12/10/2004	3	<0.005	<0.010	148		
	6/7/2005	<5	<0.005	<0.010	155		
	6/28/2006	2	<0.005	<0.010	169		
	6/8/2007	4	<0.005	0.074	144		
	6/25/2008	4	<0.005	<0.010	164		
	6/26/2008	3	<0.005	<0.010	60		
	6/24/2009	3	<0.005	<0.010	180		
	Dup	6/24/2009	3	<0.005	<0.010	183	
	B-21D	11/6/1997	2	<0.005	<0.020	33	
		12/23/1998	2	<0.005	<0.020	15	
11/5/1999		NS	NS	NS	NS		
12/8/2000		2	<0.005	<0.020	36		
10/18/2001		1	<0.005	<0.020	41		
11/7/2002		NS	NS	NS	NS		
11/13/2003		4	<0.005	<0.010	48		
12/10/2004		2	<0.005	<0.010	50		
6/8/2005		<5	<0.005	<0.010	44		
6/28/2006		2	<0.005	<0.010	53		
6/8/2007		4	<0.005	<0.010	60		
6/26/2008		3	<0.005	<0.010	60		
6/25/2009		3	<0.005	<0.010	64		
B-22D		11/6/1997	2	<0.005	<0.020	32	
	12/23/1998	2	<0.005	<0.020	28		
	11/5/1999	2	<0.005	<0.020	29		
	12/8/2000	2	<0.005	<0.020	31		
	10/17/2001	1	<0.005	<0.020	33		
	11/7/2002	2	<0.005	<0.020	35		
	11/14/2003	3	<0.005	<0.010	37		
	12/10/2004	2	<0.005	<0.010	42		
	6/8/2005	<5	<0.005	<0.010	40		
	6/28/2006	2	<0.005	<0.010	42		
	6/8/2007	3	<0.005	<0.010	46		
	Dup	6/8/2007	4	<0.005	<0.010	47	
	6/26/2008	3	<0.005	<0.010	46		
	Dup	6/26/2008	3	<0.005	<0.010	46	
6/25/2009	2	<0.005	<0.010	54			
B-23D	11/6/1997	2	<0.005	<0.020	25		
	12/23/1998	2	<0.005	<0.020	21		
	11/5/1999	3	<0.005	<0.020	26		
	Dup	11/5/1999	3	<0.005	<0.020	25	
	12/8/2000	2	<0.005	<0.020	22		
	10/17/2001	2	<0.005	<0.020	23		
	11/7/2002	NS	NS	NS	NS		
	11/13/2003	NS	NS	NS	NS		
	12/10/2004	2	<0.005	<0.010	25		
	B-23DR	6/7/2005	25	<0.005	<0.010	60	
		Dup	6/7/2005	25	<0.005	<0.010	59
		6/27/2006	26	<0.005	0.010	67	
		6/8/2007	28	<0.005	<0.010	62	
		6/26/2008	22	<0.005	<0.010	54	
6/25/2009	29	<0.005	<0.010	63			

Table 3
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Well ID	Sample Date	Inorganics (mg/L)			
		Chloride	Cyanide	Phenols	Sulfate
B-24	11/6/1997	NS	NS	NS	NS
	12/23/1998	163	<0.005	<0.020	205
	11/5/1999	NS	NS	NS	NS
	12/8/2000	NS	NS	NS	NS
	10/17/2001	NS	NS	NS	NS
	11/7/2002	NS	NS	NS	NS
	11/13/2003	NS	NS	NS	NS
	12/9/2004	NS	NS	NS	NS
B-24R	6/7/2005	49	<0.005	<0.010	206
	6/28/2006	48	<0.005	<0.010	182
	6/4/2007	47	<0.005	<0.010	184
	6/26/2008	46	<0.005	<0.010	189
	6/24/2009	48	<0.005	<0.010	201
B-27D	6/8/2007	4	<0.005	<0.010	23
	6/26/2008	2	<0.005	<0.010	23
	6/25/2009	2	<0.005	<0.010	20
B-28	6/5/2007	12	<0.005	<0.010	87
	6/27/2008	10	<0.005	<0.010	88
	6/24/2009	10	<0.005	<0.010	84
B-29	6/5/2007	70	<0.005	<0.010	218
B-30	6/5/2007	35	<0.005	<0.010	452
EB	12/10/2004	<2	<0.005	<0.010	<2
	6/8/2005	<5	<0.005	<0.010	<5
	6/28/2006	<1	<0.005	<0.010	<1
	6/8/2007	<2	<0.005	<0.010	<2
	6/26/2008	<2	<0.005	<0.010	<2
	6/25/2009	<2	<0.005	<0.010	<2

NS = Well not sampled, no liquid encountered

NA = Not analyzed, insufficient water

WD = Well destroyed

<= Not detected above specified laboratory limits

EPA Methods Used = chloride 300.0, cyanide 335.4, phenols 420.1, sulfate 300.0.

Dup = Duplicate Analysis

Table 4
REALM - Coldwater Road Facility
Post-Closure Monitoring - Analytical Results
Volatile Organics (VOC's)

Sample Tag	B2D	B7	B9	B18A	B19AR	B20D	B20D Dup	B21D	B22D
Sample Date	6/25/2009	6/24/2009	6/25/2009	6/24/2009	6/24/2009	6/24/2009	6/24/2009	6/25/2009	6/25/2009
Volatiles Organics (mg/L)									
Acrolein	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acrylonitrile	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromodichloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromoform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Carbon tetrachloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2-Chloroethylvinyl ether	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
trans-1,2-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis-1,3-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
trans-1,3-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methylene chloride	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vinyl chloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

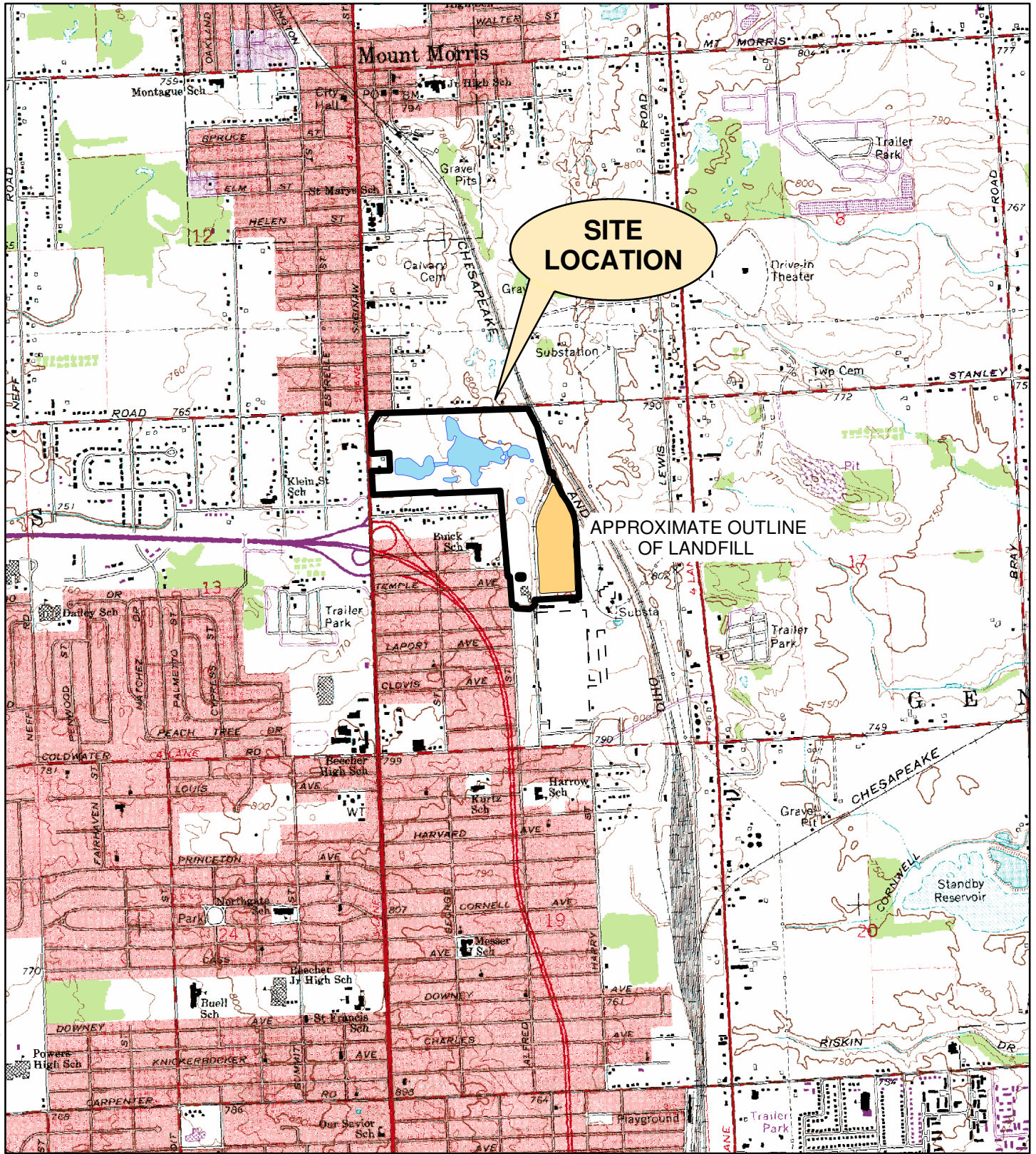
Table 4
REALM - Coldwater Road Facility
Post-Closure Monitoring - Analytical Results
Volatile Organics (VOC's)

Sample Tag	B23DR	B24R	B27D	B28	TB-02	TB-03	EB-01
Sample Date	6/25/2009	6/24/2009	6/25/2009	6/24/2009	6/18/2009	6/25/2009	6/25/2009
Volatile Organics (mg/L)							
Acrolein	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acrylonitrile	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromodichloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromoform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Bromomethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Carbon tetrachloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chlorobenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
2-Chloroethylvinyl ether	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloroform	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Dibromochloromethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
trans-1,2-Dichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,2-Dichloropropane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
cis-1,3-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
trans-1,3-Dichloropropene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Ethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Methylene chloride	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
1,1,2,2-Tetrachloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Tetrachloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Toluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,1-Trichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
1,1,2-Trichloroethane	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Trichloroethene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Vinyl chloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Figures

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PLOT DATE: 8/5/2009 jmo



REALM
COLDWATER ROAD FACILITY
FLINT, MICHIGAN

SITE LOCATION MAP



10781PROJECTS4966 CW39196-04M 2009.DOC\DWG\004.MXD

PLOT DATE: 8-5-2009 jmo

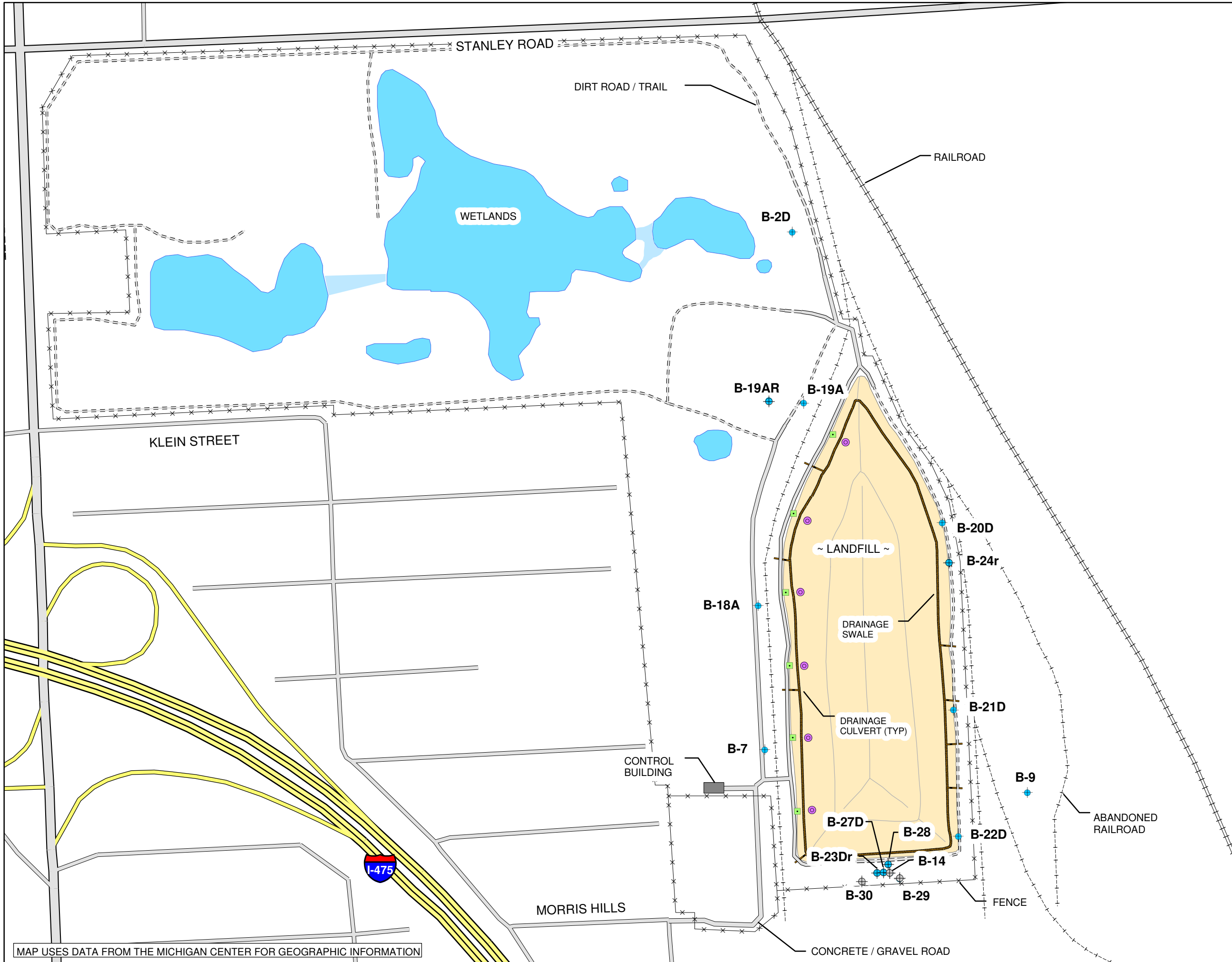






FIGURE 2



LEGEND

-  LEACHATE COLLECTION SUMP
-  ACCESS PORT FOR LEAK DETECTION VAULT
-  MONITORING WELL
-  ABANDONED WELL

REALM
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

SITE LAYOUT



AUGUST 2009
4966/39196-004

MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

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PLOT DATE: 8/5/2009 jmc

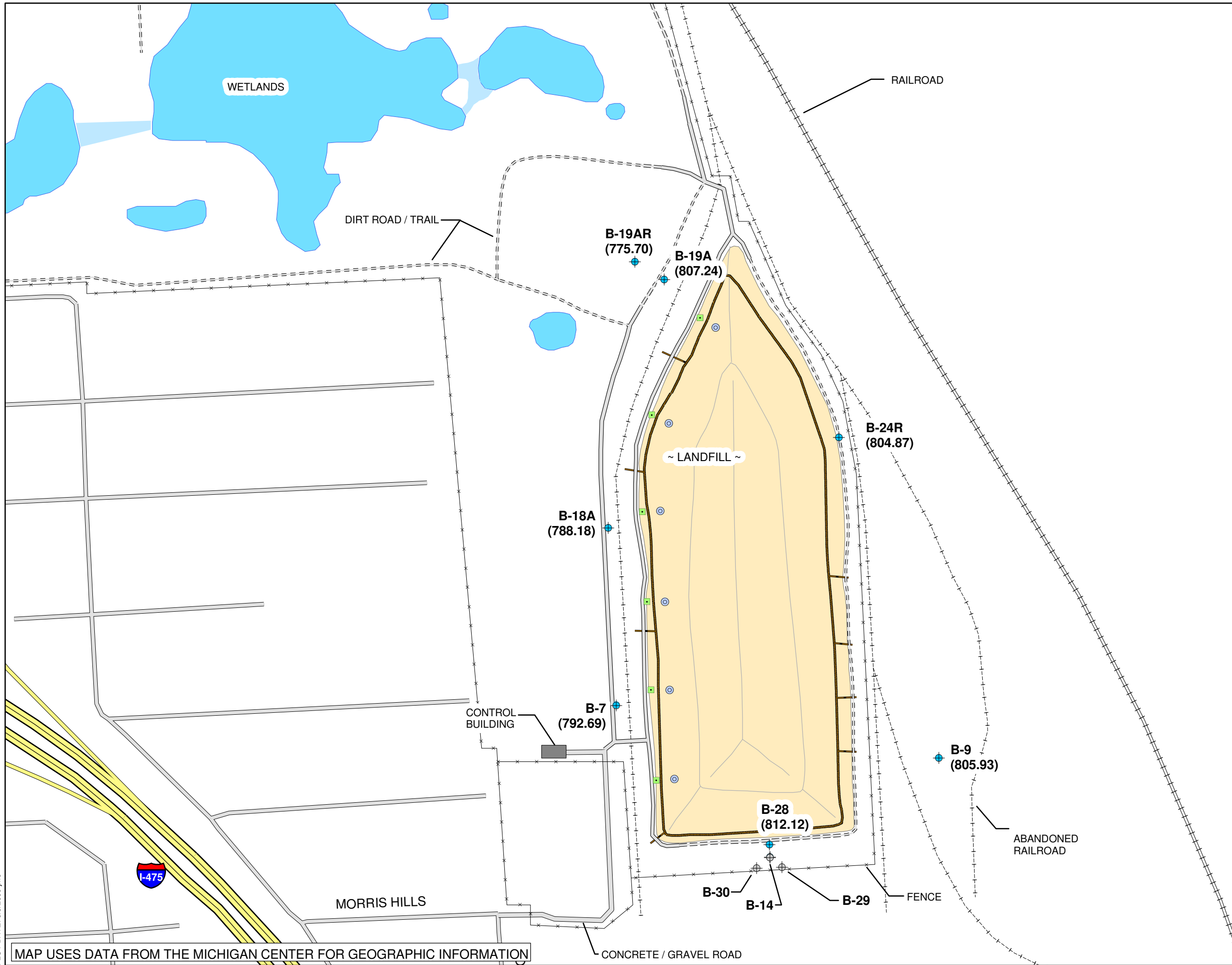





FIGURE 3

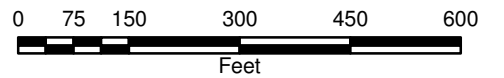


LEGEND

-  MONITORING WELL
-  (775.70) GROUND WATER ELEVATION ON
-  ABANDONED WELL

REALM
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

**SHALLOW GROUND
WATER ELEVATION
MAP
JUNE 24, 2009**



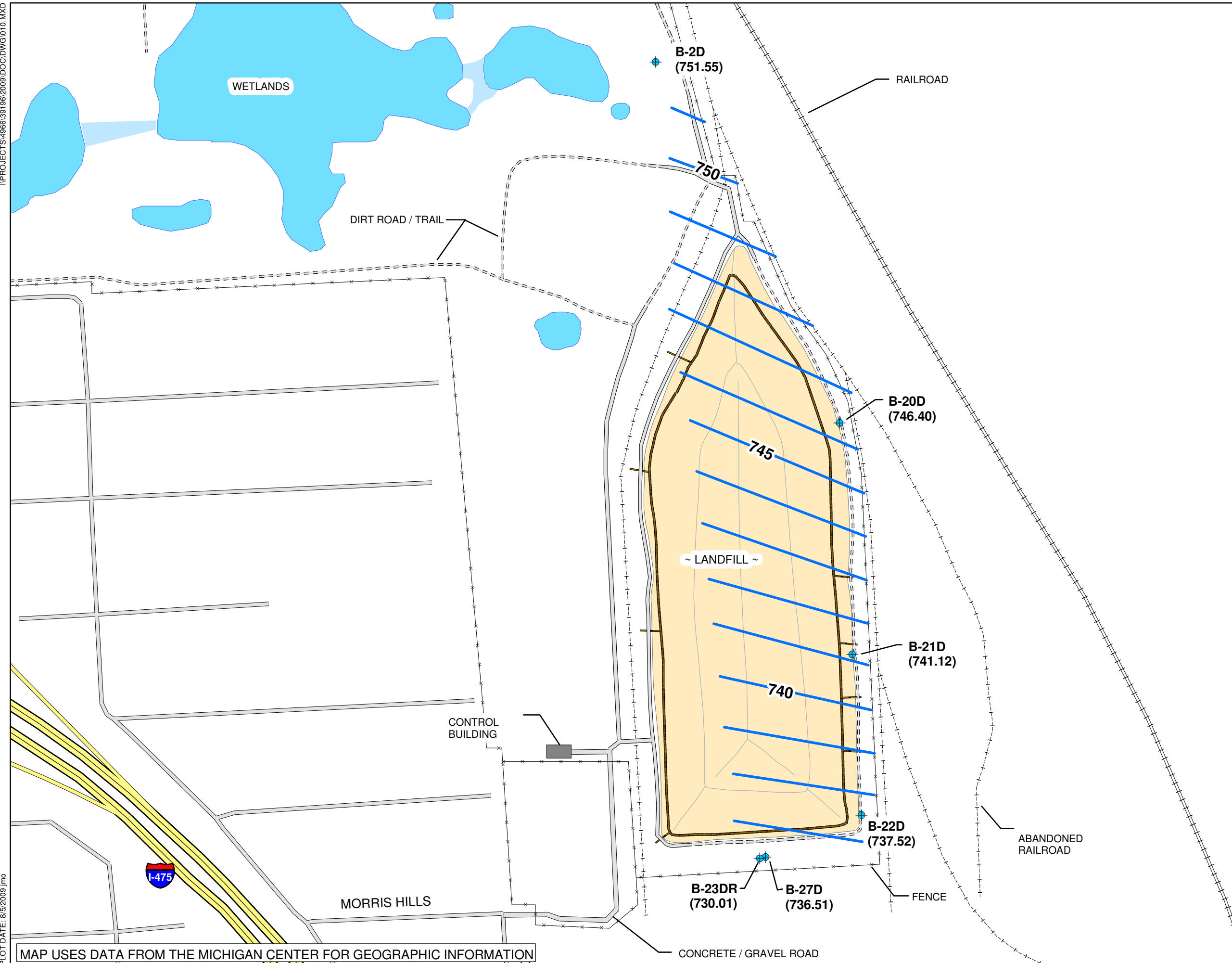
AUGUST 2009
4966/39196-009



MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

CONCRETE / GRAVEL ROAD

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

PLOT DATE: 8/5/2009 jmo

MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

FIGURE 4

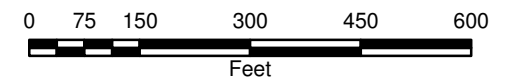


LEGEND

-  MONITORING WELL
-  (797.04) GROUND WATER ELEVATION ON
-  740 GROUND WATER POTENTIOMETRIC ELEVATION

REALM
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

**DRIFT AQUIFER
WATER FLOW
POTENTIOMETRIC
MAP
JUNE 24, 2009**



AUGUST 2009
4966/39196-010



APPENDIX A

Sampling Procedures

**GROUND WATER SAMPLING STANDARD OPERATING PROCEDURE
COLDWATER ROAD LANDFILL
FLINT, MICHIGAN**

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Introduction 1
GM Procedures Referenced..... 1
Procedural Guidelines..... 2
Equipment/Materials 5
References 7

List of Forms (*Following Text*)

Ground Water Sampling Log

Introduction

This procedure is for the collection of ground water samples for laboratory analysis.

The objective of most ground water quality monitoring programs is to obtain samples that are representative of existing ground water conditions, or samples that retain the physical and chemical properties of the ground water within an aquifer.

One of the most important aspects of ground water sampling is acquiring samples that are free of suspended silt, sediment, or other fine grained particulates. Fine grain materials may often have a variety of chemical components sorbed to the particle or have the ability to sorb chemicals from the aqueous phase to the particle, which will bias the subsequent analytical results.

Constituents known to have an affinity for fine-grained particulates are: polychlorinated biphenyls (PCBs), semi-volatile organic compounds (SVOCs), and inorganics. Monitoring programs where these constituents are suspected or known to be prevalent must employ sampling methods that minimize particulate presence.

The sampling method of "preference" for sites where particulate sorption is an issue is the "low stress/low flow" technique described herein. Experience has shown that the "low stress/low flow" technique typically achieves representative ground water samples with minimal particulate interference.

Lastly, in "extreme" cases "ultra-low flow" techniques have been employed at select sites where "low stress/low flow" methods were used, yet particulate-sensitive constituents continue to bias the analytical results. Ultra-low flow techniques are conducted at purging rates below 100 mL per minute, and should only be utilized after careful review and a procedural variance has been approved.

GM Procedures Referenced

- FMG 1.4 - Data Recording - Field Books/Digital Recording.
- FMG 5.1 - Water Level Measurements.
- FMG 8.0 - Field Instruments - Use/Calibration
- FMG 9.0 - Equipment Decontamination.

Procedural Guidelines

The following describes the "Low Stress/Low Flow Methods" technique for ground water sampling.

"Low Stress/Low Flow Methods" will be employed at the Coldwater Road Landfill site to collect ground water samples truly representative of the ground water present, and to minimize the impact of sediment/ colloid presence. Analyses typically sensitive to turbidity/sediment issues are PCBs, SVOCs, and inorganic constituents.

Preparatory Requirements

1. Verify well identification and location using borehole log details and location layout figures. Note the condition of the well and inform the Project Manager of any required repair work.
2. For new wells, prior to opening the well cap, measure the breathing space above the well casing with a PID to establish baseline levels. Repeat this measurement once the well cap is opened. If either of these measurements exceeds the air quality criteria in the Health and Safety Plan, field personnel should adjust their PPE accordingly.
3. Prior to commencing the ground water purging/sampling tasks, water level and total well depth measurements must be obtained to determine the volume of water in the well. Refer to FMG 5.1 - Water Level Measurements for details, as necessary. In some settings it may be necessary to allow time for the water level to equilibrate. This condition exists if a watertight seal exists at the well cap and the water level has fluctuated above the top of screen, creating a vacuum or pressurized area within the well casing. Three water level checks will verify static water level conditions or changing conditions.
4. Calculate the water volume in the well. Typically overburden well volumes consider only the quantity of water standing in the well screen and riser; bedrock well volumes are calculated on the quantity of water within the open core hole and within the overburden casing.
5. Estimate the natural ground water flow rate into well to determine the approximate pumping rate for purging/sampling activities.

Well Purging and Stabilization Monitoring (Low Stress/Low Flow Method)

1. The GM method of preference for ground water sampling will be the low stress/low flow method described below.
2. Bladder pumps/submersible variable rate pumps (i.e., Grundfos™ Rediflo or equivalent) or peristaltic pumps are typically employed.
3. Slowly lower the pump, safety cable, tubing and electrical lines into the well to the depth specified by the project requirements. The pump or tubing should be placed in the well as early as possible before sampling is initiated (this is to minimize well disturbance). Peristaltic tubing placement should include a tubing "clamp" at the well head, to minimize vibration transfer into

the water column. The pump or tubing intake must be at the mid-point of the well screen to prevent disturbance and re-suspension of any sediment in the screen base. Bedrock well sampling may require pump/tubing placement in specific fracture zone areas or other areas, which will be identified within the project Work Plan.

4. Before starting the pump, measure the water level again with the pump in the well leaving the water level measuring device in the well when completed.
5. Purge the well at 100 to a maximum of 500 milliliters per minute (mL/min). During purging, the water level should be monitored approximately every 5 minutes, or as appropriate. A steady flow rate should be maintained which results in drawdown of 0.3 ft or less. The rate of pumping should not exceed the natural flow rate conditions of the well being sampled. Care should be taken to maintain pump suction and to avoid entrainment of air in the tubing. Record adjustments made to the pumping rates and water levels immediately after each adjustment.

If drawdowns of 0.3 feet or less can not be maintained because of the permeability of the formation at a particular well location, “ultra-low flow” purge techniques will be employed. Ultra-low flow purge rates are rates below 100 mL/min. However, if ultra-low flow purging still results in the well purging “dry,” the well will be allowed to recharge for the balance of the day. As a sufficient volume of water enters the well, field parameter measurements will be collected and purging will continue up to a maximum of 24 hours from the beginning of purging, at which time the ground water sample from the well will be collected.

6. Calibrate field instrument and document calibration activity. Calibration shall be performed in accordance with manufacturer's recommendations and FMG 8.0 - Field Instruments - Use/Calibration.
7. During the purging of the well, monitor and record the field indicator parameters (pH, temperature, conductivity, oxidation-reduction (redox) reaction potential (ORP), dissolved oxygen (DO), and turbidity) approximately every 5 minutes. Stabilization is considered achieved when the final ground water flow rate is achieved, and three consecutive readings for each parameter are within the following limits:

- pH ± 0.1 pH units of the average value of the three readings;
- temperature ± 3 percent of the average value of the three readings;
- conductivity ± 0.005 milliSiemen per centimeter (mS/cm) of the average value of the three readings for conductivity < 1 mS/cm and ± 0.01 mS/cm of the average value of the three readings for conductivity > 1 MS/cm;
- ORP ± 10 millivolts (mV) of the average value of the three readings;
- DO ± 10 percent of the average value of the three readings; and
- turbidity ± 10 percent of the average value of the three readings, or a final value of less than 5 nephelometric turbidity units (NTU).

8. Should stabilization not be achieved for all field parameters, purging is continued until a maximum of 3 well volumes have been purged from the well. After purging 3 well volumes, purging is continued if the purge water remains visually turbid and appears to be clearing, or if stabilization parameters are varying slightly outside of the stabilization criteria listed above and appear to be approaching stabilization.
9. The pump must not be removed from the well between purging and sampling.

Sampling Techniques

1. Samples are typically collected directly from the pump with the ground water being discharged directly into the appropriate sample container. Avoid handling the interior of the bottle or bottle cap and don new gloves for each well sampled to avoid contamination of the sample.
2. Order of sample collection:
 - VOCs;
 - SVOCs and PCBs;
 - Total organic carbon (TOC);
 - Total organic halogens (TOX);
 - Extractable organics;
 - Total metals;
 - Dissolved metals;
 - Phenols;
 - Cyanide;
 - Sulfate and chloride; and
 - Nitrate and ammonia.
3. For low stress/low flow sampling, samples should be collected at a flow rate between 100 and 250 mL/min and such that drawdown of the water level within the well does not exceed the maximum allowable drawdown of 0.3 ft, except as noted in item 5. under well purging and stabilization monitoring.
4. The pumping rate used to collect a sample for VOCs should not exceed 100 mL/min. Samples should be transferred directly to the final container 40 mL glass vials completely full and topped with a teflon cap. Once capped the vial must be inverted and tapped to check for headspace/air presence (bubbles). If air is present the sample vial will be discarded, and re-collected until free of air.
5. Field filtration will be performed as indicated in the Post-Closure Care Plan. Sediment presence can interfere or bias sample results; false positive findings have been observed when turbid samples for inorganic (and other analytes) are analyzed. Field filtration can eliminate this concern; generally applicable to only inorganic/PCB analysis. In-line disposable filter cartridges are generally the easiest and quickest method for field filtration.

6. Sample labels/sample identification. All samples must be labeled with:
 - A unique sample number;
 - Date and time;
 - Parameters to be analyzed;
 - Project Reference ID; and
 - Sampler's initials.
7. Labels should be secured to the bottle(s) and should be written in indelible inks.

Equipment/Materials

1. pH, conductivity, nephelometric (i.e., turbidity), ORP, DO, and temperature multimeter. A separate turbidity meter may be utilized if necessary.
2. Flow-through cell for multimeter.
3. Field filtration units (if required).
4. Purging/sampling equipment:
 - Peristaltic pump (not suitable for VOCs¹/SVOCs, or drawing water from depths greater than 25 ft²);
 - Suction pumps (not suitable for VOCs/SVOCs, or depths greater than 25 ft);
 - Submersible pumps (suitable for VOCs/SVOCs only at low flow rates); and
 - Bladder pumps (suitable for VOCs/SVOCs).
5. Water level probe.
6. Sampling materials (containers, log book/forms, coolers, chain-of-custody).
7. Post-Closure Care Plan.
8. Health and Safety Plan.

Note¹: Peristaltic pump use for VOC collection is acceptable on select EPA/RCRA and MDEQ sites; this technique has gained acceptance in select areas (MDEQ allows VOC sampling with the peristaltic pump).

Note²: Exception is noted in locations that the suction line can be placed at the desired sample depth (i.e., 100 ft), and the natural recharge maintains a water level within 25 feet of the ground surface.

Field Notes

Field notes must document field activities and measurements collected during the sampling activities. FMG 1.4 - Data Recording - Field Books/Digital Recording describes the data/recording procedure for field activities. The log book/field file should document the following for each well sampled:

- Identification of well.
- PID readings before and after well opening (if required).
- Well depth.
- Static water level depth and measurement technique.
- Sounded well depth.
- Presence of immiscible layers and detection/collection method.
- Well yield – high or low.
- Purge volume, pumping rate, and final disposition.
- Time well purged.
- Measured field parameters and meter calibration records.
- Purge/sampling device used.
- Well sampling sequence.
- Sample appearance.
- Sample odors.
- Sample volume.
- Types of sample containers and sample identification.
- Preservative(s) used.
- Parameters requested for analysis.
- Field analysis data and method(s).
- Sample distribution and transporter.
- Analytical laboratory.
- Chain-of-custody number for shipment to laboratory.
- Field observations on sampling event.
- Name(s) of sampling personnel.
- Climatic conditions including air temperature.
- Problems encountered and any deviations made from the established sampling protocol.

A standard ground water sampling log form for documentation and reporting ground water purging and sampling events will be utilized.

Ground water/Decontamination Fluid Disposal

The Post-Closure Care Plan will identify the required disposal procedures for ground water and decontamination fluids. Ground water disposal methods will vary on a case-by-case basis but may range from:

1. Off-site treatment at private treatment/disposal facilities or public owned treatment facilities.
2. On-site treatment at Facility-operated facilities.

3. Direct discharge to the surrounding ground surface, allowing ground water infiltration to the underlying subsurface regime.

Decontamination fluids should be segregated and collected separately from wash waters/ground water containers.

References

ASTM D5474 - Guide for Selection of Data Elements for Ground water Investigations.

ASTM D4696 - Guide for Pore-Liquid Sampling from the Vadose Zone.

ASTM D5979 - Guide for Conceptualization and Characterization of Ground water Systems.

ASTM D5903 - Guide for Planning and Preparing for a Ground water Sampling Event.

ASTM D4448 - Standard Guide for Sampling Ground water Wells.

ASTM D6001 - Standard Guide for Direct Push Water Sampling for Geo-Environmental Investigations.

USEPA Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures (EPA/540/S -95/504).

USEPA RCRA Ground water Monitoring: Draft Technical Guidance (EPA/530-R-93-001).

MDEQ RRD Operational Memorandum No. 2: Sampling and Analysis.

Ground Water Sampling Logs

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/25/09
 Site Name Coldwater Road Landfill Weather Partly cloudy 80°F
 Location Flint, MI Well # B-2D
 Project No. 4966/39196 Evacuation Method submersible pump
 Personnel KBS / SMD Sampling Method Low-flow

Well Information:

Depth of Well * 72.97 ft.
 Depth to Water * 53.55 ft.
 Length of Water Column 19.42 ft.
 Volume of Water in Well 3116 gal.(s)

Water Volume /ft. for:	X	2" Diameter Well = 0.163 X LWC
		4" Diameter Well = 0.653 X LWC
		6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1.5 gal.(s)
 Did well go dry? No

* Measurements taken from Well Casing Protective Casing (Other, Specify)

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1500 initial	130 initial	53.55 initial	21.05 initial	1.027 initial	9.29 initial	6.89 initial		378 initial
1505		53.55	24.22	1.022	5.72	6.91		173
1510		53.55	25.48	1.026	5.27	6.95	101.6	129
1515		53.55	27.41	1.020	4.99	6.98	100.1	117
1520		53.55	28.32	1.025	4.70	7.00	98.3	106
1525		53.55	26.71	1.025	5.60	7.00	98.8	88.9
1530		53.55	24.55	1.008	5.48	6.96	102.2	73.3
1535		53.55	24.31	0.987	4.84	6.94	104.1	75.6
1540		53.55	24.08	0.975	4.49	6.94	106.6	71.8
1545		53.55	23.72	0.970	4.46	6.95	109.1	68.4
1545								

Water Sample:

Time Collected 1550

Physical Appearance at Start

Physical Appearance at Sampling

Color rust color
 Odor -
 Turbidity (> 100 NTU) 378
 Sheen/Free Product -

Color clear
 Odor -
 Turbidity (> 100 NTU) 68.4
 Sheen/Free Product -

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: Rental Flow Cell

Date 6/24/09
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. 4966/39196
 Personnel KBS / SMD

Weather cloudy 80°F
 Well # B-7
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 31.59 ft.
 Depth to Water * 22.51 ft.
 Length of Water Column 9.08 ft.
 Volume of Water in Well 1.48 gal.(s)

Water Volume /ft. for:	X	2" Diameter Well = 0.163 X LWC
		4" Diameter Well = 0.653 X LWC
		6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)
 Did well go dry? NO

* Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration:

Calibrated within Range

pH ✓
 ORP ✓
 Conductivity ✓
 DO ✓

Began pumping at 8:30

Water parameters:

Time	Pumping Rate (mL/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
<u>8:40</u> initial	<u>80</u>	<u>23.42</u> initial	<u>18.91</u> initial	<u>1.264</u> initial	<u>4.99</u> initial	<u>7.07</u> initial	<u>131.7</u> initial	<u>98.5</u> initial
<u>8:45</u>	<u>80</u>	<u>23.71</u>	<u>18.76</u>	<u>1.254</u>	<u>3.86</u>	<u>6.97</u>	<u>134.2</u>	<u>64.4</u>
<u>8:50</u>	<u>80</u>	<u>24.03</u>	<u>19.62</u>	<u>1.250</u>	<u>3.41</u>	<u>6.98</u>	<u>132.0</u>	<u>46.5</u>
<u>8:55</u>	<u>80</u>	<u>24.33</u>	<u>19.98</u>	<u>1.247</u>	<u>3.36</u>	<u>7.00</u>	<u>130.5</u>	<u>37.5</u>
<u>9:00</u>	<u>80</u>	<u>24.65</u>	<u>19.60</u>	<u>1.254</u>	<u>3.57</u>	<u>6.98</u>	<u>128.1</u>	<u>32.9</u>
<u>9:05</u>	<u>80</u>	<u>24.94</u>	<u>19.45</u>	<u>1.246</u>	<u>3.46</u>	<u>6.93</u>	<u>129.6</u>	<u>27.2</u>
<u>9:10</u>	<u>80</u>	<u>25.24</u>	<u>19.99</u>	<u>1.245</u>	<u>3.18</u>	<u>6.96</u>	<u>127.3</u>	<u>26.0</u>
<u>9:15</u>	<u>80</u>	<u>25.55</u>	<u>19.88</u>	<u>1.247</u>	<u>2.84</u>	<u>6.95</u>	<u>127.4</u>	<u>24.7</u>
<u>9:20</u>	<u>80</u>	<u>25.84</u>	<u>20.05</u>	<u>1.242</u>	<u>2.42</u>	<u>6.95</u>	<u>121.7</u>	<u>19.1</u>
<u>9:25</u>	<u>80</u>	<u>26.10</u>	<u>20.28</u>	<u>1.240</u>	<u>2.48</u>	<u>6.96</u>	<u>118.1</u>	<u>20.7</u>
<u>9:30</u>	<u>80</u>	<u>26.34</u>	<u>20.04</u>	<u>1.241</u>	<u>2.47</u>	<u>6.90</u>	<u>115.9</u>	<u>20.3</u>

Water Sample:
 Time Collected 9:35

Physical Appearance at Start

Physical Appearance at Sampling

Color cloudy
 Odor No
 Turbidity (> 100 NTU) 98.5
 Sheen/Free Product No

Color Clear
 Odor No
 Turbidity (> 100 NTU) 20.3
 Sheen/Free Product No

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: Rental Flow Cell

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/25/09
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. 4966/39196
 Personnel KBS / SMD

Weather Partly cloudy 81°F
 Well # B-9
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 25.35 ft.
 Depth to Water * 3.53 ft.
 Length of Water Column 21.82 ft.
 Volume of Water in Well 3.55 gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1 gal.(s)
 Did well go dry? No

* Measurements taken from Well Casing Protective Casing (Other, Specify)

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
9:25	initial 110	initial 4.42	initial 16.06	initial 2.577	initial 1.67	initial 6.69	initial 128.2	initial 27
9:30	110	5.02	17.71	2.579	0.89	6.67	120.9	24
9:35	110	5.41	18.39	2.579	0.79	6.68	116.3	18
9:40	110	5.83	19.11	2.587	0.65	6.68	112.9	18
9:45	110	6.16	19.58	2.598	0.38	6.69	107.0	16
9:50	110	6.47	19.67	2.602	0.33	6.68	106.0	16
9:55	110	6.81	19.76	2.601	0.30	6.68	103.9	12
10:00	110	7.08	19.75	2.599	0.33	6.67	102.3	14

Water Sample:

Time Collected 10:55

Physical Appearance at Start

Physical Appearance at Sampling

Color clear
 Odor —
 Turbidity (> 100 NTU) 27
 Sheen/Free Product —

Color clear
 Odor —
 Turbidity (> 100 NTU) 14
 Sheen/Free Product —

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: Rental Flow cell

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/24/09
 Site Name Coldwater Road Landfill Weather Partly cloudy 86°F
 Location Flint, MI Well # B-18A
 Project No. 4966/39196 Evacuation Method peristaltic pump
 Personnel KBS / SMD Sampling Method Low-flow

Well Information:
 Depth of Well * 43.4 ft.
 Depth to Water * 23.95 ft.
 Length of Water Column 19.45 ft.
 Volume of Water in Well 3.17 gal.(s)

Water Volume /ft. for:	X	2" Diameter Well = 0.163 X LWC
		4" Diameter Well = 0.653 X LWC
		6" Diameter Well = 1.469 X LWC

Volume removed before sampling 0.6 gal.(s)
 Did well go dry? No
 * Measurements taken from Well Casing Protective Casing (Other, Specify)

Instrument Calibration: Calibrated within Range
 pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
<u>1135</u> initial	<u>80</u> initial	<u>24.71</u> initial	<u>21.26</u> initial	<u>0.1561</u> initial	<u>6.24</u> initial	<u>7.23</u> initial	<u>114.5</u> initial	<u>15</u> initial
<u>1140</u>		<u>24.91</u>	<u>23.68</u>	<u>1.056</u>	<u>3.29</u>	<u>7.18</u>	<u>109.3</u>	<u>15</u>
<u>1145</u>		<u>25.19</u>	<u>24.42</u>	<u>1.059</u>	<u>3.50</u>	<u>7.19</u>	<u>108.1</u>	<u>10</u>
<u>1150</u>		<u>25.21</u>	<u>25.51</u>	<u>1.056</u>	<u>3.17</u>	<u>7.21</u>	<u>106.6</u>	<u>7</u>
<u>1155</u>		<u>25.29</u>	<u>26.08</u>	<u>1.058</u>	<u>3.23</u>	<u>7.23</u>	<u>105.2</u>	<u>3</u>
<u>1200</u>		<u>25.31</u>	<u>26.23</u>	<u>1.061</u>	<u>3.30</u>	<u>7.25</u>	<u>101.5</u>	<u>3</u>

Water Sample:
 Time Collected 1200

Physical Appearance at Start	Physical Appearance at Sampling
<u>clear</u>	<u>clear</u>
Color <u>—</u>	Color <u>—</u>
Odor <u>—</u>	Odor <u>—</u>
Turbidity (> 100 NTU) <u>15</u>	Turbidity (> 100 NTU) <u>3</u>
Sheen/Free Product <u>—</u>	Sheen/Free Product <u>—</u>

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: Rental Flow cell

Date 6/24/09
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. 4966/39196
 Personnel KBS / SMD

Weather Partly cloudy 86 °F
 Well # B-19Ar
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 46.5 ft.
 Depth to Water * 36.79 ft.
 Length of Water Column 9.71 ft.
 Volume of Water in Well 1.58 gal.(s)

Water Volume /ft. for:
 X 2" Diameter Well = 0.163 X LWC
4" Diameter Well = 0.653 X LWC
6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1.8 gal.(s)
 Did well go dry? No

* Measurements taken from Well Casing Protective Casing (Other, Specify)

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
11:06	initial 120	initial 38.56	initial 15.67	initial 659	initial 2.70	initial 8.06	initial -33.3	initial 443
11:05	100	38.80	15.95	645	1.50	8.22	-39.0	292
11:10	100	39.04	15.93	630	1.35	8.29	-43.5	243
11:15	100	39.21	16.02	618	1.34	8.38	-45.8	211
11:20	100	39.43	15.91	589	1.55	8.49	-49.3	137
11:25	100	38.66	15.57	540	1.80	8.63	-52.9	115
11:30	100	39.85	15.69	516	2.08	8.59	-50.8	97.9
11:35	100	40.03	15.71	520	2.15	8.43	-46.7	76.1
11:40	100	40.44	16.23	551	1.89	8.15	-40.0	69.9
11:45	100	40.61	16.33	573	1.81	8.09	-38.1	47.5

Water Sample:
 Time Collected 1220

Physical Appearance at Start

Physical Appearance at Sampling

Color cloudy
 Odor —
 Turbidity (> 100 NTU) 443
 Sheen/Free Product —

Color clear
 Odor —
 Turbidity (> 100 NTU) 22
 Sheen/Free Product —

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: OBG Flow cell

<u>Time</u>	<u>Rate</u>	<u>Draw</u>	<u>Temp</u>	<u>Cond</u>	<u>DO</u>	<u>PH</u>	<u>ORP</u>	<u>Turb</u>
11:50	100	40.83	16.63	612	1.58	7.83	-30.8	43.3
11:55	-	40.97	16.89	626	1.51	7.76	-23.8	35.0
12:00	-	41.10	17.40	641	1.42	7.77	-22.0	27.5
12:05	-	41.19	17.22	644	1.40	7.77	-23.9	23.5
12:10	-	41.32	17.30	647	1.41	7.74	-22.4	22.1

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date: 10/24/09
 Site Name: Coldwater Road Landfill
 Location: Flint, MI
 Project No.: 4966/39196
 Personnel: KBS / SMD
 Weather: partly cloudy 90°F
 Well #: B-200
 Evacuation Method: submersible pump
 Sampling Method: Low-flow

Well Information:

Depth of Well * 84.97 ft.
 Depth to Water * 70.00 ft.
 Length of Water Column 14.75 ft.
 Volume of Water in Well 2.90 gal.(s)

Water Volume /ft. for:
 X 2" Diameter Well = 0.163 X LWC
 4" Diameter Well = 0.653 X LWC
 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1.8 gal.(s)
 Did well go dry? No

(Other, Specify)

* Measurements taken from Well Casing Protective Casing

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1320	initial 100	initial 70.50	initial 16.04	initial 0.964	initial 9.85	initial 7.33	initial 0.6	initial 224
1325	100	70.50	16.78	0.952	5.62	7.33	-5.4	164
1330		70.50	17.81	0.953	3.49	7.30	-9.1	158
1335		70.50	18.71	0.952	2.64	7.26	-14.7	271
1340		70.50	18.92	0.944	1.90	7.22	-25.0	346
1345		70.50	18.88	0.943	1.39	7.19	-38.8	367
1350		70.50	19.40	0.945	1.14	7.19	-44.2	363
1355		70.50	19.32	0.951	0.80	7.16	-50.3	333
1400		70.50	19.06	0.952	0.67	7.18	-52.8	307
1405		70.50	19.05	0.952	0.61	7.15	-55.2	279
1410		70.50	19.40	0.952	0.53	7.17	-57.0	224

Water Sample: 1430
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color: cloudy
 Odor: -
 Turbidity (> 100 NTU): -
 Sheen/Free Product: -

Color: clear
 Odor: -
 Turbidity (> 100 NTU): 183
 Sheen/Free Product: -

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: DUP-03 collected

Rental Flow Cell

Time	PUMP	PD	Temp	con	Do	pH	ORP	turb
1415	100	70.50	19.34	0.954	0.51	7.17	-57.1	218
1420		70.50	19.30	0.951	0.48	7.17	-58.8	201
1425		70.50	19.41	0.952	0.47	7.18	-58.6	192
1430		70.50	19.45	0.951	0.45	7.17	-57.7	183

collected at 1430

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 10/25/09
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. 4966/39196
 Personnel KBS / SMD

Weather Partly cloudy 80°F
 Well # B-21D
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 97.44 ft.
 Depth to Water * 80.77 ft.
 Length of Water Column 16.67 ft.
 Volume of Water in Well 2.71 gal.(s)

Water Volume /ft. for:	
X	2" Diameter Well = 0.163 X LWC
	4" Diameter Well = 0.653 X LWC
	6" Diameter Well = 1.469 X LWC

Volume removed before sampling 2.6 gal.(s)
 Did well go dry? NO

* Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1645	initial 160	initial 81.50	initial 18.70	initial 521	initial 5.15	initial 7.15	initial -30.9	initial
1650		82.20	19.13	506	2.95	6.92	-19.5	238
1655		82.20	17.97	491	2.34	6.83	-22.0	350
1700		82.20	19.17	509	1.65	6.84	-34.2	361
1705		82.20	17.63	498	1.02	6.77	-72.2	488
1710		82.20	18.30	570	0.82	6.76	-78.1	487
1715		82.11	18.43	579	0.76	6.80	-86.3	427
1720		82.11	17.33	570	0.71	6.75	-91.5	435
1725		82.11	17.23	574	0.69	6.72	-94.3	501
1730		82.11	17.22	521	0.61	6.71	-97.4	508
1735		82.11	18.09	531	0.52	6.71	-92.1	541

Water Sample: 1820
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color cloudy
 Odor _____
 Turbidity (> 100 NTU) 238
 Sheen/Free Product _____

Color Slightly cloudy
 Odor _____
 Turbidity (> 100 NTU) 123
 Sheen/Free Product _____

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NaOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: OBG Flow Cell

Time	Pump	DD	Temp	Con	DO	pH	ORP	Turb
1740		82.11	18.07	543	0.58	6.79	-97.7	431
1745		82.21	16.37	523	0.53	6.70	-95.9	314
1750		82.21	16.18	523	0.51	6.68	-96.6	280
1755		82.21	16.46	526	0.48	6.71	-98.2	217
1800		82.21	16.55	529	0.48	6.71	-98.0	201
1805		82.21	16.30	528	0.49	6.71	-98.0	177
1810		82.21	15.81	523	0.49	6.68	-97.0	167
1815		82.21	15.95	525	0.46	6.68	-97.5	130
1820		82.	16.10	527	0.47	6.69	-97.7	123

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/25/09
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. 4966/39196
 Personnel KBS / SMD

Weather Partly cloudy 90°F
 Well # B-22D
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 97.24 ft.
 Depth to Water * 86.03 ft.
 Length of Water Column 11.21 ft.
 Volume of Water in Well 1.82 gal.(s)

Water Volume /ft. for:	X	2" Diameter Well = 0.163 X LWC
		4" Diameter Well = 0.653 X LWC
		6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1.3 gal.(s)
 Did well go dry? No

* Measurements taken from Well Casing Protective Casing (Other, Specify)

Instrument Calibration:

Calibrated within Range
 pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1315	initial 110	initial 86.35	initial 20.58	initial 566	initial 4.00	initial 6.87	initial -49.5	initial 199
1320		86.37	19.32	552	2.08	6.84	-71.0	179
1325		86.40	17.05	522	1.63	6.82	-87.0	201
1330		86.43	15.78	504	1.46	6.77	-92.5	118
1335		86.47	16.34	513	1.48	6.78	-93.7	113
1340		86.50	15.16	497	1.63	6.72	-92.9	113
1345		86.41	15.44	498	1.37	6.72	-93.3	72.6
1350		86.45	16.02	513	1.33	6.75	-94.5	62.3
1355		86.51	16.14	509	1.36	6.77	-96.6	55.8
1400		86.41	16.60	512	1.24	6.74	-97.4	43.9

Water Sample: 1400
 Time Collected

Physical Appearance at Start

Color cloudy
 Odor -
 Turbidity (> 100 NTU) 199
 Sheen/Free Product -

Physical Appearance at Sampling

Color Clear
 Odor -
 Turbidity (> 100 NTU) 43.9
 Sheen/Free Product -

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: 036 Flow Cell

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/24/09 / 6/25/09
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. 4966/39196
 Personnel KBS / SMD

Weather Partly cloudy 78°F
 Well # B-23Dr
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 107 ft.
 Depth to Water * 83.63 ft.
 Length of Water Column 23.37 ft.
 Volume of Water in Well 3,80 gal.(s)

Water Volume /ft. for:
X 2" Diameter Well = 0.163 X LWC
4" Diameter Well = 0.653 X LWC
6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1.5 gal.(s)
 Did well go dry? NO

* Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
<u>1610</u> initial	<u>140</u>	<u>83.63</u> initial	<u>20.01</u> initial	<u>580</u> initial	<u>10.31</u> initial	<u>7.01</u> initial	<u>-59.0</u> initial	<u>1000+</u> initial
<u>1615</u>	<u>140</u>	<u>83.67</u>	<u>17.03</u>	<u>582</u>	<u>3.91</u>	<u>6.88</u>	<u>-70.4</u>	<u>1000+</u>
<u>1620</u>	<u>140</u>	<u>83.67</u>	<u>16.52</u>	<u>583</u>	<u>1.53</u>	<u>6.73</u>	<u>-96.7</u>	<u>406</u>
<u>1625</u>	<u>140</u>	<u>83.67</u>	<u>16.35</u>	<u>559</u>	<u>1.03</u>	<u>6.68</u>	<u>-105.1</u>	<u>176</u>
<u>1630</u>	<u>140</u>	<u>83.67</u>	<u>16.68</u>	<u>554</u>	<u>0.80</u>	<u>6.67</u>	<u>-106.2</u>	<u>124</u>
<u>1635</u>								
<u>805</u>	<u>120</u>	<u>83.61</u>	<u>15.06</u>	<u>524</u>	<u>8.47</u>	<u>6.90</u>	<u>9.0</u>	<u>83.8</u>
<u>810</u>		<u>83.65</u>	<u>15.68</u>	<u>532</u>	<u>3.06</u>	<u>6.71</u>	<u>15.1</u>	<u>73.7</u>
<u>815</u>		<u>83.65</u>	<u>16.66</u>	<u>553</u>	<u>2.29</u>	<u>6.72</u>	<u>0.1</u>	<u>58.1</u>
<u>820</u>		<u>83.65</u>	<u>17.35</u>	<u>523</u>	<u>1.74</u>	<u>6.74</u>	<u>-13.3</u>	<u>42.0</u>
<u>825</u>	<u>N</u>	<u>83.65</u>	<u>18.13</u>	<u>526</u>	<u>1.34</u>	<u>6.74</u>	<u>-20.8</u>	

Water Sample: 850
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color Cloudy
 Odor _____
 Turbidity (> 100 NTU) 1000+
 Sheen/Free Product _____

Color Clear
 Odor _____
 Turbidity (> 100 NTU) 21.5
 Sheen/Free Product _____

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO3	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H2SO4	
TOC	1	125 ml Plastic	H2SO4	
TOX	1	125 ml Plastic	H2SO4	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: Pump failed after 25 min of monitoring, overheated. Restarted monitoring 6/25/09
086 Flow cell

Time	Pump	DD	Temp	Con	DG	pH	ORP	Turb
830	120	83.65	18.63	583	1.14	6.75	-23.9	36.2
835	↓	83.65	19.25	593	1.04	6.74	-36.8	33.6
840		83.65	18.83	591	1.01	6.74	-53.3	24.4
845		83.65	18.87	590	0.96	6.73	-56.6	22.8
850		83.65	18.89	592	0.91	6.73	-59.1	21.5

collected sample at 850

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/24/09
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. 4966/39196
 Personnel KBS / SMD

Weather Partly cloudy 90 °F
 Well # B-24r
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 29.5 ft.
 Depth to Water * 12.48 ft.
 Length of Water Column 17.02 ft.
 Volume of Water in Well 2.77 gal.(s)

Water Volume /ft. for:
 X 2" Diameter Well = 0.163 X LWC
4" Diameter Well = 0.653 X LWC
6" Diameter Well = 1.469 X LWC

Volume removed before sampling 1.5 gal.(s)
 Did well go dry? NO

* Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1400 initial	110	13.64 initial	16.21 initial	816 initial	2.26 initial	6.90 initial	-126.1 initial	
1405	110	13.98	18.39	849	0.78	6.74	-123.0	64
1410	110	14.19	19.64	875	0.77	6.72	-122.3	74.9
1415	110	14.42	20.48	895	0.69	6.73	-111.4	39.6
1420	110	14.58	20.92	906	0.45	6.74	-109.2	20.9
1425	110	14.66	21.04	909	0.43	6.72	-117.6	17.8
1430	110	14.75	21.23	914	0.38	6.71	-121.1	15.4
1435	110	14.80	21.40	917	0.33	6.70	-123.1	12.5
1440	110	14.86	21.36	920	0.32	6.71	-120.3	23.1
1445	110	14.97	21.46	938	0.26	6.64	-122.1	13.3

Water Sample:
 Time Collected 1500

Physical Appearance at Start

Physical Appearance at Sampling

Color clear
 Odor —
 Turbidity (> 100 NTU) 64
 Sheen/Free Product —

Color clear
 Odor —
 Turbidity (> 100 NTU) 12
 Sheen/Free Product —

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: OBG Flow Cell

Ground Water Sampling Log

Station: 1455 Date: 12/14/03
 Well ID: 2003-100 Well Depth: 110
 Location: 1455 - 110

Operator: [Blank] Recorder: [Blank]
 Splicer: [Blank]

Time of Day: 1455-110

Time	Draw Rate (l/min)	Draw Rate (m³/hr)	Temp (°C)	Cond. (µmhos/cm)	DO (mg/L)	pH	ORP	Turb. (NTU)	Color (PCU)	GP (mg/l)	Turb. (NTU)
1455-110	110	15.19	17.44	835	0.24	6.62	+122.1	12.0			
1450-110	110	15.05	17.34	832	0.25	6.64	-123.4	12.1			
		<u>Draw</u>	<u>Temp</u>	<u>Cond.</u>	<u>DO</u>	<u>pH</u>	<u>ORP</u>	<u>Turb.</u>			

Volume of Water in Well: 0.577
 Length of Water Column: 15.05
 Depth to Water: 110
 Depth to Well: 110
 Water in Well: 0.577

Water Yields: 2003-100
 S. Diameter Well = 0.153 x WC
 M. Diameter Well = 0.033 x WC
 B. Diameter Well = 1.453 x WC

Depth to Water: 110
 Volume of Water in Well: 0.577
 Length of Water Column: 15.05
 Depth to Well: 110
 Water in Well: 0.577

100 Flow Cell

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/25/09
 Site Name Coldwater Road Landfill Weather Partly cloudy 86°F
 Location Flint, MI Well # B-27D
 Project No. 4966/39196 Evacuation Method submersible pump
 Personnel KBS / SMD Sampling Method Low-flow

Well Information:

Depth of Well * 89 ft.
 Depth to Water * 77.71 ft.
 Length of Water Column 11.29 ft.
 Volume of Water in Well 1.84 gal.(s)

Water Volume /ft. for:	X	2" Diameter Well = 0.163 X LWC
		4" Diameter Well = 0.653 X LWC
		6" Diameter Well = 1.469 X LWC

Volume removed before sampling 3 gal.(s)
 Did well go dry? NO

* Measurements taken from Well Casing Protective Casing (Other, Specify)

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
1000	initial 7	initial 78.00	initial 15.67	initial 457	initial 6.46	initial 7.16	initial -24.4	initial 1100
1005		78.100	15.56	451	2.62	6.95	-66.8	1100
1010		78.00	17.00	467	2.68	6.84	-60.1	1100
1015		78.08	18.69	485	2.05	6.87	-54.2	1100
1020	120	78.11	19.48	476	2.26	6.90	-40.8	1100
1025		78.11	19.67	499	1.92	6.89	-42.3	1100
1030		78.11	19.82	500	1.58	6.88	-41.3	1100
1035		78.11	20.19	504	1.15	6.87	-43.3	981
1040		78.11	20.195	520	1.12	6.87	-51.5	
1045		78.11	17.89	488	0.79	6.82	-67.3	935
1050		78.11	15.10	450	0.67	6.78	-84.5	823

Water Sample:

Time Collected 1135

Physical Appearance at Start

Color cloudy
 Odor —
 Turbidity (> 100 NTU) 1100
 Sheen/Free Product —

Physical Appearance at Sampling

Color clear
 Odor —
 Turbidity (> 100 NTU) 51.4
 Sheen/Free Product —

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

OBG Flow Cell

Time	Pump	DO	Temp	Con	DO	pH	ORP	Turb
1055	120	78.11	15.75	457	0.50	6.79	-95.5	823
1100		78.11	15.89	461	0.48	6.79	-98.6	581
1105		78.11	16.33	466	0.40	6.80	-102.5	331
1110		78.11	16.48	468	0.38	6.81	-104.6	277
1115		78.11	16.36	468	0.39	6.87	-105.8	202
1120		78.11	16.16	465	0.39	6.79	-105.0	161
1125		78.11	16.54	469	0.38	6.78	-104.3	121
1130		78.11	16.40	469	0.37	6.79	-105.8	114
1135		78.11	16.52	470	0.37	6.79	-105.5	89.1

Turb during sampling 51.4

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/24/09
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. 4966/39196
 Personnel KBS / SMD

Weather Partly cloudy 91°F
 Well # B-28
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well information:

Depth of Well * 31.5 ft.
 Depth to Water * 5.81 ft.
 Length of Water Column 25.69 ft.
 Volume of Water in Well 4.18 gal.(s)

Water Volume /ft. for:	X	2" Diameter Well = 0.163 X LWC
		4" Diameter Well = 0.653 X LWC
		6" Diameter Well = 1.469 X LWC

Volume removed before sampling 0.7 gal.(s)
 Did well go dry? No

* Measurements taken from Well Casing Protective Casing (Other, Specify) _____

Instrument Calibration:

Calibrated within Range

pH
 ORP
 Conductivity
 DO

Water parameters:

Time	Pumping Rate (ml/min.)	Drawdown (ft) 0.3 feet or less	Temperature (Celsius) ±3 percent	Conductivity (mS/cm) ±0.005 (mS/cm)	Dissolved Oxygen (mg/L) ±10 percent	pH ±0.1 pH units	ORP (mV) ±10 millivolts	Turbidity (NTUs) ±10 percent
<u>1615</u>	initial <u>80</u>	initial <u>6.59</u>	initial <u>21.53</u>	initial <u>0.795</u>	initial <u>1.81</u>	initial <u>6.89</u>	initial <u>45.0</u>	initial <u>39</u>
<u>1620</u>		<u>6.83</u>	<u>21.43</u>	<u>0.791</u>	<u>0.63</u>	<u>6.91</u>	<u>45.2</u>	<u>33</u>
<u>1625</u>		<u>7.14</u>	<u>21.06</u>	<u>0.792</u>	<u>0.47</u>	<u>6.97</u>	<u>53.6</u>	<u>30</u>
<u>1630</u>		<u>7.28</u>	<u>19.80</u>	<u>0.788</u>	<u>0.36</u>	<u>6.96</u>	<u>48.1</u>	<u>35</u>
<u>1635</u>		<u>7.52</u>	<u>19.74</u>	<u>0.784</u>	<u>0.31</u>	<u>7.01</u>	<u>31.1</u>	<u>27</u>
<u>1640</u>		<u>7.69</u>	<u>19.89</u>	<u>0.781</u>	<u>0.27</u>	<u>7.98</u>	<u>35.2</u>	<u>22</u>
<u>1645</u>		<u>7.76</u>	<u>19.46</u>	<u>0.784</u>	<u>0.25</u>	<u>6.98</u>	<u>28.9</u>	<u>26</u>

Water Sample:
 Time Collected 1645

Physical Appearance at Start

Physical Appearance at Sampling

Color clear
 Odor -
 Turbidity (> 100 NTU) 39
 Sheen/Free Product -

Color clear
 Odor -
 Turbidity (> 100 NTU) 26
 Sheen/Free Product -

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	2	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	1	125 ml Plastic	HNO ₃	yes
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	1	125 ml Plastic	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes: Rental Flow cell used

Analytical Results



Analytical Laboratory Report

Report ID: S41204.01(02)
Generated on 07/10/2009
Replaces report S41204.01(01) generated on 07/08/2009

Report to
Attention: Clifford Yantz/Marianne Secrest
O'Brien & Gere Engineers, Inc.
33469 West 14 Mile Road Suite 150
Farmington Hills, MI 48331

Phone: 248-477-5701 FAX: 248-661-4057
Email: YantzCS@obg.com/SecresME@obg.com

Report produced by
Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary
Lab Sample ID(s): S41204.01-S41204.08
Project: Coldwater Road Landfill SSOW# R006008
Collected Date: 06/18/2009 - 06/24/2009
Submitted Date/Time: 06/25/2009 14:45
Sampled by: Kevin Schneider
P.O. #: 4018541

Report Notes
Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
"Not detected" indicates that parameter was not found at a level equal to or greater than the RL.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Violetta F. Murshak
Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S41204.01	B-7-062409	Groundwater	06/24/2009 09:35
S41204.02	B-18A-062409	Groundwater	06/24/2009 12:00
S41204.03	B-19Ar-062409	Groundwater	06/24/2009 12:20
S41204.04	B-20D-062409	Groundwater	06/24/2009 14:30
S41204.05	DUP-03-062409	Groundwater	06/24/2009
S41204.06	B-24r-062409	Groundwater	06/24/2009 15:00
S41204.07	B-28-062409	Groundwater	06/24/2009 16:45
S41204.08	TB-02-061809	Water Quality	06/18/2009



Analytical Laboratory Report

Lab Sample ID: S41204.01
 Sample Tag: B-7-062409
 Collected Date/Time: 06/24/2009 09:35
 Matrix: Groundwater
 COC Reference: 04198

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	40	mg/L	2	300.0	06/29/09 09:39	JDP	16887-00-6	
Conductivity	1,184	umhos/cm		120.1	06/29/09 12:20	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:08	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/30/09 15:45	JKB		
Sulfate	154	mg/L	2	300.0	06/29/09 09:39	JDP	14808-79-8	
TOC	4.5	mg/L	1	5310C	07/01/09 12:00	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:38	SLS	7440-47-3	
Copper, Dissolved	0.003	mg/L	0.001	200.8	07/01/09 14:38	SLS	7440-50-8	
Iron, Dissolved	0.067	mg/L	0.02	200.8	07/01/09 14:38	SLS	7439-89-6	
Manganese, Dissolved	0.036	mg/L	0.005	200.8	07/01/09 14:38	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:38	SLS	7440-02-0	
Sodium, Dissolved	84.5	mg/L	1.0	200.8	07/02/09 12:17	SLS	7440-23-5	
Zinc, Dissolved	0.014	mg/L	0.005	200.8	07/01/09 14:38	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/06/09 23:59	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/06/09 23:59	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/06/09 23:59	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/06/09 23:59	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/06/09 23:59	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/06/09 23:59	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	78-87-5	



Analytical Laboratory Report

Lab Sample ID: S41204.01 (continued)

Sample Tag: B-7-062409

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/06/09 23:59	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/06/09 23:59	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/06/09 23:59	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/06/09 23:59	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S41204.02
 Sample Tag: B-18A-062409
 Collected Date/Time: 06/24/2009 12:00
 Matrix: Groundwater
 COC Reference: 04198

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	16	mg/L	2	300.0	06/29/09 10:00	JDP	16887-00-6	
Conductivity	1,060	umhos/cm		120.1	06/29/09 12:30	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:16	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/30/09 15:50	JKB		
Sulfate	111	mg/L	2	300.0	06/29/09 10:00	JDP	14808-79-8	
TOC	Not detected	mg/L	1	5310C	07/01/09 12:30	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:41	SLS	7440-47-3	
Copper, Dissolved	0.001	mg/L	0.001	200.8	07/01/09 14:41	SLS	7440-50-8	
Iron, Dissolved	Not detected	mg/L	0.02	200.8	07/01/09 14:41	SLS	7439-89-6	
Manganese, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:41	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:41	SLS	7440-02-0	
Sodium, Dissolved	53.1	mg/L	1.0	200.8	07/02/09 12:20	SLS	7440-23-5	
Zinc, Dissolved	0.015	mg/L	0.005	200.8	07/01/09 14:41	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 00:17	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 00:17	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 00:17	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 00:17	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 00:17	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 00:17	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	78-87-5	



Analytical Laboratory Report

Lab Sample ID: S41204.02 (continued)

Sample Tag: B-18A-062409

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 00:17	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 00:17	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 00:17	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 00:17	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S41204.03
 Sample Tag: B-19Ar-062409
 Collected Date/Time: 06/24/2009 12:20
 Matrix: Groundwater
 COC Reference: 04198

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	60	mg/L	2	300.0	06/29/09 10:12	JDP	16887-00-6	
Conductivity	911	umhos/cm		120.1	06/29/09 12:35	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:18	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/30/09 15:55	JKB		
Sulfate	147	mg/L	2	300.0	06/29/09 10:12	JDP	14808-79-8	
TOC	1.0	mg/L	1	5310C	07/01/09 12:45	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:44	SLS	7440-47-3	
Copper, Dissolved	0.002	mg/L	0.001	200.8	07/01/09 14:44	SLS	7440-50-8	
Iron, Dissolved	0.036	mg/L	0.02	200.8	07/01/09 14:44	SLS	7439-89-6	
Manganese, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:44	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:44	SLS	7440-02-0	
Sodium, Dissolved	21.2	mg/L	1.0	200.8	07/02/09 12:23	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:44	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 00:35	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 00:35	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 00:35	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 00:35	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 00:35	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 00:35	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	78-87-5	



Analytical Laboratory Report

Lab Sample ID: S41204.03 (continued)

Sample Tag: B-19Ar-062409

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 00:35	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 00:35	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 00:35	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 00:35	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S41204.04
 Sample Tag: B-20D-062409
 Collected Date/Time: 06/24/2009 14:30
 Matrix: Groundwater
 COC Reference: 04198

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	3	mg/L	2	300.0	06/29/09 12:44	JDP	16887-00-6	
Conductivity	1,000	umhos/cm		120.1	06/29/09 12:40	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:20	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/30/09 16:00	JKB		
Sulfate	180	mg/L	2	300.0	06/29/09 10:24	JDP	14808-79-8	
TOC	1.1	mg/L	1	5310C	07/01/09 13:15	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:47	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 14:47	SLS	7440-50-8	
Iron, Dissolved	1.72	mg/L	0.02	200.8	07/01/09 14:47	SLS	7439-89-6	
Manganese, Dissolved	0.056	mg/L	0.005	200.8	07/01/09 14:47	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:47	SLS	7440-02-0	
Sodium, Dissolved	21.0	mg/L	1.0	200.8	07/02/09 12:26	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:47	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 12:59	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 12:59	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 12:59	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 12:59	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 12:59	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 12:59	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	78-87-5	



Analytical Laboratory Report

Lab Sample ID: S41204.04 (continued)

Sample Tag: B-20D-062409

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 12:59	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 12:59	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 12:59	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 12:59	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S41204.05
 Sample Tag: DUP-03-062409
 Collected Date/Time: 06/24/2009 :
 Matrix: Groundwater
 COC Reference: 04198

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	3	mg/L	2	300.0	06/29/09 12:56	JDP	16887-00-6	
Conductivity	1,010	umhos/cm		120.1	06/29/09 12:45	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:22	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/30/09 16:05	JKB		
Sulfate	183	mg/L	2	300.0	06/29/09 10:35	JDP	14808-79-8	
TOC	Not detected	mg/L	1	5310C	07/01/09 13:30	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:51	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 14:51	SLS	7440-50-8	
Iron, Dissolved	1.64	mg/L	0.02	200.8	07/01/09 14:51	SLS	7439-89-6	
Manganese, Dissolved	0.056	mg/L	0.005	200.8	07/01/09 14:51	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:51	SLS	7440-02-0	
Sodium, Dissolved	20.8	mg/L	1.0	200.8	07/02/09 12:29	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:51	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 01:11	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 01:11	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 01:11	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 01:11	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 01:11	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 01:11	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	78-87-5	



Analytical Laboratory Report

Lab Sample ID: S41204.05 (continued)

Sample Tag: DUP-03-062409

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 01:11	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 01:11	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 01:11	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 01:11	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S41204.06
 Sample Tag: B-24r-062409
 Collected Date/Time: 06/24/2009 15:00
 Matrix: Groundwater
 COC Reference: 04198

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	48	mg/L	2	300.0	06/29/09 10:48	JDP	16887-00-6	
Conductivity	1,120	umhos/cm		120.1	06/29/09 12:50	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:24	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/30/09 16:10	JKB		
Sulfate	201	mg/L	2	300.0	06/29/09 13:08	JDP	14808-79-8	
TOC	5.2	mg/L	1	5310C	07/01/09 13:45	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:54	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 14:54	SLS	7440-50-8	
Iron, Dissolved	4.00	mg/L	0.02	200.8	07/01/09 14:54	SLS	7439-89-6	
Manganese, Dissolved	0.155	mg/L	0.005	200.8	07/01/09 14:54	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:54	SLS	7440-02-0	
Sodium, Dissolved	38.4	mg/L	1.0	200.8	07/02/09 12:32	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:54	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 01:29	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 01:29	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 01:29	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 01:29	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 01:29	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 01:29	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	78-87-5	



Analytical Laboratory Report

Lab Sample ID: S41204.06 (continued)

Sample Tag: B-24r-062409

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 01:29	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 01:29	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 01:29	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 01:29	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S41204.07
 Sample Tag: B-28-062409
 Collected Date/Time: 06/24/2009 16:45
 Matrix: Groundwater
 COC Reference: 04198

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	10	mg/L	2	300.0	06/29/09 11:00	JDP	16887-00-6	
Conductivity	822	umhos/cm		120.1	06/29/09 12:55	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:26	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/30/09 16:15	JKB		
Sulfate	84	mg/L	2	300.0	06/29/09 11:00	JDP	14808-79-8	
TOC	1.1	mg/L	1	5310C	07/01/09 14:00	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:57	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 14:57	SLS	7440-50-8	
Iron, Dissolved	0.204	mg/L	0.02	200.8	07/01/09 14:57	SLS	7439-89-6	
Manganese, Dissolved	0.132	mg/L	0.005	200.8	07/01/09 14:57	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:57	SLS	7440-02-0	
Sodium, Dissolved	14.6	mg/L	1.0	200.8	07/02/09 12:35	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 14:57	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 01:47	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 01:47	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 01:47	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 01:47	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 01:47	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 01:47	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	78-87-5	



Analytical Laboratory Report

Lab Sample ID: S41204.07 (continued)

Sample Tag: B-28-062409

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 01:47	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 01:47	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 01:47	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 01:47	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Lab Sample ID: S41204.08
 Sample Tag: TB-02-061809
 Collected Date/Time: 06/18/2009 :
 Matrix: Water Quality
 COC Reference: 04198

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles								
VOCs, TTO List								
Acrolein	Not detected	ug/L	10	624	07/02/09 18:40	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/02/09 18:40	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/02/09 18:40	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/02/09 18:40	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/02/09 18:40	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/02/09 18:40	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/02/09 18:40	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/02/09 18:40	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/02/09 18:40	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/02/09 18:40	JGH	75-01-4	

ANALYTICAL REPORT

PROJECT NO. 41204

41204

Lot #: A9F260230

Paula Shaw

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TESTAMERICA LABORATORIES, INC.



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Approved for release.
Denise D. Heckler
Project Manager
7/9/2009 4:02 PM

July 9, 2009

TestAmerica Laboratories, Inc.

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CASE NARRATIVE

A9F260230

The following report contains the analytical results for seven water samples submitted to TestAmerica North Canton by Merit Laboratories from the 41204 Site, project number 41204. The samples were received June 26, 2009, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 4.8°C.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<u>Volatile (GC or GC/MS)</u>	<u>Semivolatile (GC/MS)</u>	<u>Metals ICP-MS</u>	<u>Metals ICP Trace</u>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada
(#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY,
ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA_CWA 032609.doc

EXECUTIVE SUMMARY - Detection Highlights

A9F260230

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
NO DETECTABLE PARAMETERS				

ANALYTICAL METHODS SUMMARY

A9F260230

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Total Organic Halogens	SW846 9020B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A9F260230

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
LFPP3	001	41204.01	06/24/09	09:35
LFPP6	002	41204.02	06/24/09	12:00
LFPP7	003	41204.03	06/24/09	12:20
LFPP9	004	41204.04	06/24/09	14:30
LFPGA	005	41204.05	06/24/09	
LFPGC	006	41204.06	06/24/09	15:00
LFPGD	007	41204.07	06/24/09	16:45

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Merit Laboratories

Client Sample ID: 41204.01

General Chemistry

Lot-Sample #...: A9F260230-001 Work Order #...: LFPP3 Matrix.....: WG
Date Sampled...: 06/24/09 09:35 Date Received..: 06/26/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1 MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41204.02

General Chemistry

Lot-Sample #...: A9F260230-002 Work Order #...: LFPP6 Matrix.....: WG
Date Sampled...: 06/24/09 12:00 Date Received..: 06/26/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1

MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41204.03

General Chemistry

Lot-Sample #...: A9F260230-003 Work Order #...: LFPP7 Matrix.....: WG
Date Sampled...: 06/24/09 12:20 Date Received..: 06/26/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1 MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41204.04

General Chemistry

Lot-Sample #...: A9F260230-004 Work Order #...: LFPP9 Matrix.....: WG

Date Sampled...: 06/24/09 14:30 Date Received..: 06/26/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1

MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41204.05

General Chemistry

Lot-Sample #...: A9F260230-005

Work Order #...: LFPGA

Matrix.....: WG

Date Sampled...: 06/24/09

Date Received..: 06/26/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1

MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41204.06

General Chemistry

Lot-Sample #...: A9F260230-006 Work Order #...: LFPGC Matrix.....: WG

Date Sampled...: 06/24/09 15:00 Date Received..: 06/26/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1

MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41204.07

General Chemistry

Lot-Sample #...: A9F260230-007 Work Order #...: LFPGD Matrix.....: WG
Date Sampled...: 06/24/09 16:45 Date Received..: 06/26/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1 MDL.....: 19.0

QUALITY CONTROL SECTION

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A9F260230

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331
		Dilution Factor: 1				
		Work Order #: LF4QR1AA		MB Lot-Sample #: A9G060000-331		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A9F260230

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogens		WO#:LF4QR1AC-LCS/LF4QR1AD-LCSD			LCS	Lot-Sample#: A9G060000-331	
	100	(67 - 115)			SW846 9020B	07/06/09	9187331
	99	(67 - 115)	1.4	(0-20)	SW846 9020B	07/06/09	9187331
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.



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 Phone (517) 332-0167 Fax (517) 332-6333
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

54082

REPORT TO

CONTACT NAME: Paula Shaw
 COMPANY: Merit
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ FAX NO.: _____
 P.O. NO.: _____ QUOTE NO.: _____
 PROJECT NO./NAME: 41204 SAMPLER(S) - PLEASE PRINT/SIGN NAME: _____

CHAIN OF CUSTODY RECORD

CONTACT NAME: _____
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ FAX NO.: _____
 P.O. NO.: _____

INVOICE TO

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)
 SPECIAL INSTRUCTIONS/NOTES
* Subid to Test America

DELIVERABLES REQUIRED: STANDARD LEVEL I LEVEL III OTHER Preservatives
 MATRIX: GW-GROUNDWATER WW-WASTEWATER S-SOIL L-LIQUID SD-SOLID
 CODE: SL-SLUDGE O-OIL A-AIR W-WASTE M-MISC

MERIT LAB NO.	YEAR		IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives						SEAL INTACT	INITIALS	DATE	TIME	
	DATE	TIME				NONE	HCL	HNO ₃	H ₂ SO ₄	NaOH	MeOH					OTHER
	6-24	0935	41204, 01	GW	1											
	1200		.02									X				
	1220		.03									X				
	1430		.04									X				
	1500		.05									X				
	1645		.06									X				
			.07									X				

RELINQUISHED BY: _____ DATE: 6-25-09 TIME: 1600
 RECEIVED BY: Julie Teague DATE: 26 Jun 09 TIME: 1700
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____ NOTES: _____ TEMP. ON ARRIVAL _____

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE

TestAmerica Cooler Receipt Form/Narrative

Lot Number: AEF260230

North Canton Facility

Client MENT Project H1204 By: Matthew J. P.
 Cooler Received on 26 JUN 2009 Opened on 26 JUN 2009 (Signature)

FedEx UPS DHL FAS Stetson Client Drop Off TestAmerica Courier Other _____
 TestAmerica Cooler # _____ Multiple Coolers Foam Box Client Cooler Other _____

1. Were custody seals on the outside of the cooler(s)? Yes No Intact? Yes No NA
 If YES, Quantity _____ Quantity Unsalvageable _____
 Were custody seals on the outside of cooler(s) signed and dated? Yes No NA
 Were custody seals on the bottle(s)? Yes No
 If YES, are there any exceptions? _____
 2. Shippers' packing slip attached to the cooler(s)? Yes No
 3. Did custody papers accompany the sample(s)? Yes No Relinquished by client? Yes No
 4. Were the custody papers signed in the appropriate place? Yes No
 5. Packing material used: Bubble Wrap Foam None Other PLASTIC BAG
 6. Cooler temperature upon receipt 4.8 °C See back of form for multiple coolers/temps
 METHOD: IR Other
 COOLANT: Wet Ice Blue Ice Dry Ice Water None
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels be reconciled with the COC? Yes No
 9. Were sample(s) at the correct pH upon receipt? Yes No NA
 10. Were correct bottle(s) used for the test(s) indicated? Yes No
 11. Were air bubbles >6 mm in any VOA vials? Yes No NA
 12. Sufficient quantity received to perform indicated analyses? Yes No
 13. Was a trip blank present in the cooler(s)? Yes No Were VOAs on the COC? Yes No
- Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other
 Concerning _____

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 031909-HNO₃; Sulfuric Acid Lot# 100108-H₂SO₄; Sodium Hydroxide Lot# 073007 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 050205-(CH₃COO)₂ZN/NaOH. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
01	7.2	26 JUN 09	MSF
02	7.2		
03	7.2		
04	7.2		
05	7.2		
06	7.2		
07	7.2		

TestAmerica Cooler Receipt Form/Narrative North Canton Facility

<u>Client ID</u>	<u>pH</u>	<u>Date</u>	<u>Initials</u>

<u>Cooler #</u>	<u>Temp. °C</u>	<u>Method</u>	<u>Coolant</u>

Discrepancies Cont'd:

END OF REPORT



ENCORE

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody and ERM DOCUMENT All relevant fields must be completed accurately.

PAGE 1 OF 1

Required Client Information:

Company: O'Brian & Gere	Report To: Cliff Yantz
Address: 37000 Grand River	Copy To:
Farmington Mills	Invoice To:
MI 48335	P.O.:
Phone: 248-477-5701	Project Name: c-Whiter Rd semi-ann
Fax:	Project Number: 39196
E-mail:	

Laboratory: Merit
Laboratory Location: East Lansing, MI
Laboratory Contact:
Requested Due Date: TAT: standard
QA/QC Requirements: standard

ID # N° 04198

SSOW Ref. Code: R006008

41204

Sample Identification:

Valid Matrix Codes:
 WG Groundwater
 WB Borehole Water
 WS Surface Water
 SO Soil
 SE Sediment
 See Back for Additional Codes

Sample ID	Matrix Code	Date Collected	Time Collected	# Containers	Unpreserved	Preservative					Analysis and Method							Remarks (Lab ID)		
						HC	HS04	HNO3	NaOH	Other	VOCS	TOC	TOX	Phenols	Cyanide	sulfate	Chlorides		Specific Conductivity	Dissolved Metals
01	B-7-062409	6/24/09	935	8	1	2	3	1	1		X	X	X	X	X	X	X	X		Metals ARE:
02	B-18A-062409		1200	8	1	2	3	1	1		X	X	X	X	X	X	X	X		Copper, Chromium
03	B-19A-062409		1200	8	1	2	3	1	1		X	X	X	X	X	X	X	X		Nickel, Zinc
04	B-20D-062409		1430	8	1	2	3	1	1		X	X	X	X	X	X	X	X		Iron, Sodium, Manganese
05	DUP-03-062409			8	1	2	3	1	1		X	X	X	X	X	X	X	X		
06	B-24r-062409		1500	8	1	2	3	1	1		X	X	X	X	X	X	X	X		
07	B-28-062409		1645	8	1	2	3	1	1		X	X	X	X	X	X	X	X		
08	TB-02-061809	6/18/09		1		1					X									

TOTAL NUMBER OF CONTAINERS

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
Pick up	1	Cliff Yantz O'Brian & Gere	6/25/09	1225	Kevin Schneider / Merit	6/25/09	1225
AIRBILL NO.		Barbara Beland / Merit	6/25/09	1445	Barbara Beland	6/25/09	1445

Sample Condition	
Temp in °C	4.2
Received un lcu	Y/N
Sealed Cooler	Y/N
Samples Intact	Y/N

Additional Comments:

Sampler Name: Kevin Schneider
 Sampler Signature: *Kevin Schneider*
 Date: 6/24/09



Analytical Laboratory Report

Supplemental Report

Report ID: S41213.01(02)
Generated on 07/14/2009
Replaces report S41213.01(01) generated on 07/08/2009

Report to

Attention: Clifford Yantz/Marianne Secrest
O'Brien & Gere Engineers, Inc.
33469 West 14 Mile Road Suite 150
Farmington Hills, MI 48331

Phone: 248-477-5701 FAX: 248-661-4057
Email: YantzCS@obg.com/SecresME@obg.com

Report produced by

Merit Laboratories
2680 East Lansing Drive
East Lansing, MI 48823

Phone: (517) 332-0167 FAX: (517) 332-6333

Report Summary

Lab Sample ID(s): S41213.01-S41213.08
Project: Coldwater Road Landfill SSOW# R006008
Collected Date: 06/25/2009
Submitted Date/Time: 06/26/2009 12:10
Sampled by: Kevin Schneider
P.O. #: 4018541

Report Notes

Results relate only to items tested as received by the laboratory.
Methods may be modified for improved performance.
Results reported on a dry weight basis where applicable.
""Not detected"" indicates that parameter was not found at a level equal to or greater than the RL.
Report shall not be reproduced except in full, without the written approval of Merit Laboratories.

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Supplemental Report

Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S41213.01	B-23Dr-062509	Groundwater	06/25/2009 08:50
S41213.02	B-9-062509	Groundwater	06/25/2009 10:55
S41213.03	B-27D-062509	Groundwater	06/25/2009 11:35
S41213.04	B-22D-062509	Groundwater	06/25/2009 14:00
S41213.05	B-2D-062509	Groundwater	06/25/2009 15:50
S41213.06	EB-01-062509	Water Quality	06/25/2009 16:15
S41213.07	B-21D-062509	Groundwater	06/25/2009 18:20
S41213.08	TB-03-062509	Water Quality	06/25/2009



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.01
 Sample Tag: B-23Dr-062509
 Collected Date/Time: 06/25/2009 08:50
 Matrix: Groundwater
 COC Reference: 04196

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
----------	---------	-------	----	--------	---------------	---------	-------	-------

Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
-----------------	-----------	--	--	-------	----------------	-----	--	--

Inorganics

Chloride	29	mg/L	2	300.0	06/29/09 11:12	JDP	16887-00-6	
Conductivity	776	umhos/cm		120.1	06/29/09 13:00	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:28	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/06/09 14:20	JKB		
Sulfate	63	mg/L	2	300.0	06/29/09 11:12	JDP	14808-79-8	
TOC	Not detected	mg/L	1	5310C	07/01/09 14:15	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:12	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 15:12	SLS	7440-50-8	
Iron, Dissolved	1.50	mg/L	0.02	200.8	07/01/09 15:12	SLS	7439-89-6	
Manganese, Dissolved	0.043	mg/L	0.005	200.8	07/01/09 15:12	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:12	SLS	7440-02-0	
Sodium, Dissolved	23.9	mg/L	1.0	200.8	07/02/09 12:49	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:12	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 02:05	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 02:05	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 02:05	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 02:05	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 02:05	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 02:05	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	78-87-5	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.01 (continued)

Sample Tag: B-23Dr-062509

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 02:05	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 02:05	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 02:05	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 02:05	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.02
 Sample Tag: B-9-062509
 Collected Date/Time: 06/25/2009 10:55
 Matrix: Groundwater
 COC Reference: 04196

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	107	mg/L	2	300.0	06/29/09 13:20	JDP	16887-00-6	
Conductivity	2,700	umhos/cm		120.1	06/29/09 13:05	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:30	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/06/09 14:30	JKB		
Sulfate	1,120	mg/L	2	300.0	06/29/09 13:32	JDP	14808-79-8	
TOC	1.6	mg/L	1	5310C	07/01/09 14:30	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:15	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 15:15	SLS	7440-50-8	
Iron, Dissolved	0.059	mg/L	0.02	200.8	07/01/09 15:15	SLS	7439-89-6	
Manganese, Dissolved	0.173	mg/L	0.005	200.8	07/01/09 15:15	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:15	SLS	7440-02-0	
Sodium, Dissolved	65.3	mg/L	1.0	200.8	07/02/09 12:52	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:15	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 02:23	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 02:23	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 02:23	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 02:23	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 02:23	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 02:23	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	78-87-5	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.02 (continued)

Sample Tag: B-9-062509

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 02:23	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 02:23	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 02:23	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 02:23	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.03
Sample Tag: B-27D-062509
Collected Date/Time: 06/25/2009 11:35
Matrix: Groundwater
COC Reference: 04196

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	2	mg/L	2	300.0	06/29/09 14:49	JDP	16887-00-6	
Conductivity	651	umhos/cm		120.1	06/29/09 13:10	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:32	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/06/09 14:40	JKB		
Sulfate	20	mg/L	2	300.0	06/29/09 14:49	JDP	14808-79-8	
TOC	Not detected	mg/L	1	5310C	07/01/09 14:45	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:18	SLS	7440-47-3	
Copper, Dissolved	0.001	mg/L	0.001	200.8	07/01/09 15:18	SLS	7440-50-8	
Iron, Dissolved	2.03	mg/L	0.02	200.8	07/01/09 15:18	SLS	7439-89-6	
Manganese, Dissolved	0.052	mg/L	0.005	200.8	07/01/09 15:18	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:18	SLS	7440-02-0	
Sodium, Dissolved	37.2	mg/L	1.0	200.8	07/02/09 12:55	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:18	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 14:47	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 14:47	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 14:47	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 14:47	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 14:47	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 14:47	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	78-87-5	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.03 (continued)

Sample Tag: B-27D-062509

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 14:47	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 14:47	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 14:47	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 14:47	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.04
 Sample Tag: B-22D-062509
 Collected Date/Time: 06/25/2009 14:00
 Matrix: Groundwater
 COC Reference: 04196

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	2	mg/L	2	300.0	06/29/09 15:01	JDP	16887-00-6	
Conductivity	705	umhos/cm		120.1	06/29/09 13:15	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:36	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/06/09 14:45	JKB		
Sulfate	54	mg/L	2	300.0	06/29/09 15:01	JDP	14808-79-8	
TOC	1.1	mg/L	1	5310C	07/01/09 15:00	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:21	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 15:21	SLS	7440-50-8	
Iron, Dissolved	1.34	mg/L	0.02	200.8	07/01/09 15:21	SLS	7439-89-6	
Manganese, Dissolved	0.030	mg/L	0.005	200.8	07/01/09 15:21	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:21	SLS	7440-02-0	
Sodium, Dissolved	28.5	mg/L	1.0	200.8	07/02/09 12:57	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:21	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 03:00	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 03:00	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 03:00	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 03:00	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 03:00	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 03:00	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	78-87-5	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.04 (continued)

Sample Tag: B-22D-062509

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 03:00	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 03:00	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 03:00	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 03:00	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.05
 Sample Tag: B-2D-062509
 Collected Date/Time: 06/25/2009 15:50
 Matrix: Groundwater
 COC Reference: 04196

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	10	mg/L	2	300.0	06/29/09 13:55	JDP	16887-00-6	
Conductivity	924	umhos/cm		120.1	06/29/09 13:20	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:38	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/06/09 14:50	JKB		
Sulfate	104	mg/L	2	300.0	06/29/09 13:55	JDP	14808-79-8	
TOC	5.6	mg/L	1	5310C	07/01/09 15:15	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:24	SLS	7440-47-3	
Copper, Dissolved	0.203	mg/L	0.001	200.8	07/01/09 15:24	SLS	7440-50-8	
Iron, Dissolved	0.022	mg/L	0.02	200.8	07/01/09 15:24	SLS	7439-89-6	
Manganese, Dissolved	0.077	mg/L	0.005	200.8	07/01/09 15:24	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:24	SLS	7440-02-0	
Sodium, Dissolved	29.7	mg/L	1.0	200.8	07/02/09 13:00	SLS	7440-23-5	
Zinc, Dissolved	0.113	mg/L	0.005	200.8	07/01/09 15:24	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 03:18	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 03:18	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 03:18	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 03:18	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 03:18	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 03:18	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	78-87-5	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.05 (continued)

Sample Tag: B-2D-062509

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 03:18	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 03:18	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 03:18	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 03:18	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.06
 Sample Tag: EB-01-062509
 Collected Date/Time: 06/25/2009 16:15
 Matrix: Water Quality
 COC Reference: 04196

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	Not detected	mg/L	2	300.0	06/29/09 14:07	JDP	16887-00-6	
Conductivity	24	umhos/cm		120.1	06/29/09 13:25	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:40	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/06/09 14:55	JKB		
Sulfate	Not detected	mg/L	2	300.0	06/29/09 14:07	JDP	14808-79-8	
TOC	Not detected	mg/L	1	5310C	07/01/09 15:30	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:27	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 15:27	SLS	7440-50-8	
Iron, Dissolved	0.110	mg/L	0.02	200.8	07/01/09 15:27	SLS	7439-89-6	
Manganese, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:27	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:27	SLS	7440-02-0	
Sodium, Dissolved	2.0	mg/L	1.0	200.8	07/02/09 13:03	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:27	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 03:36	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 03:36	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 03:36	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 03:36	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 03:36	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 03:36	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	78-87-5	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.06 (continued)

Sample Tag: EB-01-062509

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 03:36	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 03:36	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 03:36	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 03:36	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.07
 Sample Tag: B-21D-062509
 Collected Date/Time: 06/25/2009 18:20
 Matrix: Groundwater
 COC Reference: 04196

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.2	IR
3	125ml Amber	H2SO4	Yes	4.2	IR
1	500ml Plastic	None	Yes	4.2	IR
2	40ml Glass	HCL	Yes	4.2	IR
1	125ml Plastic	NaOH	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
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Extraction / Prep.

Metal Digestion	Completed			3015A	07/01/09 12:00	SLS		
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Inorganics

Chloride	3	mg/L	2	300.0	06/29/09 15:13	JDP	16887-00-6	
Conductivity	743	umhos/cm		120.1	06/29/09 13:30	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	07/02/09 13:42	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/06/09 15:00	JKB		
Sulfate	64	mg/L	2	300.0	06/29/09 14:19	JDP	14808-79-8	
TOC	Not detected	mg/L	1	5310C	07/01/09 15:45	JKB		

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:30	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.001	200.8	07/01/09 15:30	SLS	7440-50-8	
Iron, Dissolved	1.21	mg/L	0.02	200.8	07/01/09 15:30	SLS	7439-89-6	
Manganese, Dissolved	0.034	mg/L	0.005	200.8	07/01/09 15:30	SLS	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:30	SLS	7440-02-0	
Sodium, Dissolved	25.1	mg/L	1.0	200.8	07/02/09 13:06	SLS	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	07/01/09 15:30	SLS	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	07/07/09 13:35	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 13:35	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 13:35	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 13:35	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 13:35	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 13:35	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	78-87-5	



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.07 (continued)

Sample Tag: B-21D-062509

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 13:35	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 13:35	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 13:35	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 13:35	JGH	75-01-4	
Organics								
TOX	Not detected	ug/L	30.0	9020A	07/06/09 12:00	TestA		O

O-Analysis performed by outside laboratory. See attached report.



Analytical Laboratory Report

Supplemental Report

Lab Sample ID: S41213.08
Sample Tag: TB-03-062509
Collected Date/Time: 06/25/2009 :
Matrix: Water Quality
COC Reference: 04196

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	4.2	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles								
VOCs, TTO List								
Acrolein	Not detected	ug/L	10	624	07/07/09 13:53	JGH	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	07/07/09 13:53	JGH	107-13-1	
Benzene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	75-27-4	
Bromoform	Not detected	ug/L	1	624	07/07/09 13:53	JGH	75-25-2	
Bromomethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	07/07/09 13:53	JGH	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	108-90-7	
Chloroethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	07/07/09 13:53	JGH	110-75-8	
Chloroform	Not detected	ug/L	1	624	07/07/09 13:53	JGH	67-66-3	
Chloromethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	07/07/09 13:53	JGH	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	127-18-4	
Toluene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	07/07/09 13:53	JGH	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	07/07/09 13:53	JGH	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	07/07/09 13:53	JGH	75-01-4	

ANALYTICAL REPORT

PROJECT NO. 41213

41213

Lot #: A9F300129

Paula Shaw

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TESTAMERICA LABORATORIES, INC.



Denise D. Heckler
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Approved for release.
Denise D. Heckler
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7/13/2009 11:08 AM

July 13, 2009

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CASE NARRATIVE

A9F300129

The following report contains the analytical results for seven water samples submitted to TestAmerica North Canton by Merit Laboratories from the 41213 Site, project number 41213. The samples were received June 30, 2009, according to documented sample acceptance procedures.

TestAmerica utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 3.3°C.

GENERAL CHEMISTRY

The analytical results met the requirements of the laboratory's QA/QC program.

QUALITY CONTROL ELEMENTS NARRATIVE

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the reparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

- Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

<u>Volatile (GC or GC/MS)</u>	<u>Semivolatile (GC/MS)</u>	<u>Metals ICP-MS</u>	<u>Metals ICP Trace</u>
Methylene Chloride, Acetone, 2-Butanone	Phthalate Esters	Copper, Iron, Zinc, Lead, Calcium, Magnesium, Potassium, Sodium, Barium, Chromium, Manganese	Copper, Iron, Zinc, Lead

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the reparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



TestAmerica Certifications and Approvals:

The laboratory is certified for the analytes listed on the documents below. These are available upon request.
California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),
Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada
(#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY,
ARMY, USDA Soil Permit

N:\QAQC\Customer Service\Narrative - Combined RCRA_CWA 032609.doc

EXECUTIVE SUMMARY - Detection Highlights

A9F300129

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
NO DETECTABLE PARAMETERS				

ANALYTICAL METHODS SUMMARY

A9F300129

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Total Organic Halogens	SW846 9020B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A9F300129

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
LFVA5	001	41231.01	06/25/09	08:50
LFVA9	002	41231.02	06/25/09	10:55
LFVCC	003	41231.03	06/25/09	11:35
LFVCD	004	41231.04	06/25/09	14:00
LFVCE	005	41231.05	06/25/09	15:50
LFVCG	006	41231.06	06/25/09	16:15
LFVCJ	007	41231.07	06/25/09	18:20

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Merit Laboratories

Client Sample ID: 41231.01

General Chemistry

Lot-Sample #...: A9F300129-001 Work Order #...: LFVA5 Matrix.....: WG
Date Sampled...: 06/25/09 08:50 Date Received..: 06/30/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1

MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41231.02

General Chemistry

Lot-Sample #...: A9F300129-002 Work Order #...: LFVA9 Matrix.....: WG
Date Sampled...: 06/25/09 10:55 Date Received..: 06/30/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/07/09	9187331

Dilution Factor: 1 MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41231.03

General Chemistry

Lot-Sample #...: A9F300129-003 Work Order #...: Lfvcc Matrix.....: WG
Date Sampled...: 06/25/09 11:35 Date Received..: 06/30/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1

MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41231.04

General Chemistry

Lot-Sample #...: A9F300129-004 Work Order #...: LFVCD Matrix.....: WG
Date Sampled...: 06/25/09 14:00 Date Received..: 06/30/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/07/09	9187331

Dilution Factor: 1 MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41231.05

General Chemistry

Lot-Sample #...: A9F300129-005 Work Order #...: Lfvce Matrix.....: WG
Date Sampled...: 06/25/09 15:50 Date Received..: 06/30/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/07/09	9187331

Dilution Factor: 1 MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41231.06

General Chemistry

Lot-Sample #...: A9F300129-006 Work Order #...: LFVCG Matrix.....: WG

Date Sampled...: 06/25/09 16:15 Date Received..: 06/30/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/07/09	9187331

Dilution Factor: 1

MDL.....: 19.0

Merit Laboratories

Client Sample ID: 41231.07

General Chemistry

Lot-Sample #...: A9F300129-007 Work Order #...: LFVCJ Matrix.....: WG

Date Sampled...: 06/25/09 18:20 Date Received..: 06/30/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogen	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Dilution Factor: 1

MDL.....: 19.0

QUALITY CONTROL SECTION

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A9F300129

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	07/06/09	9187331

Work Order #: LF4QR1AA MB Lot-Sample #: A9G060000-331
Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Lot-Sample #...: A9F300129

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogens		WO#:LF4QR1AC-LCS/LF4QR1AD-LCSD		LCS Lot-Sample#: A9G060000-331			
	100	(67 - 115)			SW846 9020B	07/06/09	9187331
	99	(67 - 115)	1.4	(0-20)	SW846 9020B	07/06/09	9187331
		Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.



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 Phone (517) 332-0167 Fax (517) 332-6333
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

54086

REPORT TO

INVOICE TO

CHAIN OF CUSTODY RECORD

CONTACT NAME: Paula Shaw
 COMPANY: Merit Labs
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ FAX NO.: _____
 P.O. NO.: _____ QUOTE NO.: _____
 E-MAIL ADDRESS: _____

CONTACT NAME: _____
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO.: _____ FAX NO.: _____
 P.O. NO.: _____

PROJECT NO./NAME: 41213 SAMPLER(S) - PLEASE PRINT/SIGN NAME: _____

TURNAROUND TIME REQUIRED: 24 HR 48 HR 72 HR STANDARD OTHER

DELIVERABLES REQUIRED: STANDARD LEVEL II LEVEL III OTHER Passes EPA 816B

MATRIX CODE: GW=GROUNDWATER WW=WASTEWATER S=SOIL L=LIQUID SD=SOLID
 SL=SLUDGE O=OIL A=AIR W=WASTE M=MISC

MERT LAB NO.	YEAR		IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives	ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)		SPECIAL INSTRUCTIONS/NOTES
	DATE	TIME					SEAL INTACT	INITIALS	
	6-25	0850	41231.01	ENV 1	1				* Subid to Test America
		1055							
		1135							
		1400							
		1550							
		1615							
		1820							

RELINQUISHED BY: Paula Shaw DATE: 6-29-09 TIME: 1600
 SIGNATURE/ORGANIZATION: _____
 RECEIVED BY: Julie Teague DATE: 6-28-09 TIME: 9:50
 SIGNATURE/ORGANIZATION: _____

RELINQUISHED BY: _____ DATE: _____ TIME: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 NOTES: _____ TEMP. ON ARRIVAL: _____

PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE

TestAmerica Cooler Receipt Form/Narrative

Lot Number: AAF300129

North Canton Facility

Client Chad State Merit Project 41213 By: Ch. Dyer

Cooler Received on 6-30-09 Opened on 6-30-09 (Signature)

FedEx UPS DHL FAS Stetson Client Drop Off TestAmerica Courier Other _____

TestAmerica Cooler # _____ Multiple Coolers Foam Box Client Cooler Other _____

1. Were custody seals on the outside of the cooler(s)? Yes No Intact? Yes No NA
If YES, Quantity _____ Quantity Unsalvageable _____

Were custody seals on the outside of cooler(s) signed and dated? Yes No NA

Were custody seals on the bottle(s)? Yes No

If YES, are there any exceptions? _____

2. Shippers' packing slip attached to the cooler(s)? Yes No

3. Did custody papers accompany the sample(s)? Yes No Relinquished by client? Yes No

4. Were the custody papers signed in the appropriate place? Yes No

5. Packing material used: Bubble Wrap Foam None Other _____

6. Cooler temperature upon receipt 3.3 °C See back of form for multiple coolers/temps

METHOD: IR Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

7. Did all bottles arrive in good condition (Unbroken)? Yes No

8. Could all bottle labels be reconciled with the COC? Yes No

9. Were sample(s) at the correct pH upon receipt? Yes No NA

10. Were correct bottle(s) used for the test(s) indicated? Yes No

11. Were air bubbles >6 mm in any VOA vials? Yes No NA

12. Sufficient quantity received to perform indicated analyses? Yes No

13. Was a trip blank present in the cooler(s)? Yes No Were VOAs on the COC? Yes No

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container.

Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 031909-HNO₃; Sulfuric Acid Lot# 100108-H₂SO₄; Sodium Hydroxide Lot# 073007 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 050205-(CH₃COO)₂ZN/NaOH. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials
1	< 2	6-30-09	CJK
2	< 2		
3	< 2		
4	< 2		
5	< 2		
6	< 2		
7	< 2		

END OF REPORT



ENCORE

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody (COC) DOCUMENT, ALL relevant fields must be completed accurately.

PAGE 1 OF 1

Required Client Information:

Company: <u>O'Brien & Gere</u>	Report To: <u>Cliff Yantz</u>
Address: <u>3700 Grand River</u>	Copy To:
<u>Farmington Hills</u>	Invoice To:
<u>MI 48335</u>	P.O.:
Phone: <u>248-477-5761</u>	Project Name: <u>Coldwater Sewer</u>
Fax:	Project Number: <u>39196</u>
E-mail:	

Laboratory: <u>Merit</u>	
Laboratory Location: <u>Washtenaw, MI</u>	
Laboratory Contact:	
Requested Due Date:	TAT: <u>Standard</u>
QA/QC Requirements: <u>Standard</u>	

ID# No. 04196

SSOW Ref. Code: R006008

Valid Matrix Codes:
 WG Groundwater
 WB Borehole Water
 WS Surface Water
 SO Soil
 SI Sediment
 See Back for Additional Codes

Sample Identification:

41213

Sample ID	Matrix Code	Date Collected	Time Collected	# Containers	Preservative						Other:	Analysis and Method										Remarks/Lab ID	
					Unpreserved	HCl	H2SO4	HNO3	NaOH	VOCs		TOC	TOX	Phenols	Cyanide	Sulfate	Chlorides	Specific Conductivity	Dissolved Metals				
01. B-23Dr-062509	WG	6/25/09	850	8	1	2	3	1	1		X	X	X	X	X	X	X	X	X	X	X	X	Metals AK:
02. B-9-062509	WG		1055	8	1	2	3	1	1		X	X	X	X	X	X	X	X	X	X	X	X	Copper, chromium,
03. B-27D-062509	WG		1135	8	1	2	3	1	1		X	X	X	X	X	X	X	X	X	X	X	X	Nickel, Zinc,
04. B-22D-062509	WG		1400	8	1	2	3	1	1		X	X	X	X	X	X	X	X	X	X	X	X	Iron, Sodium
05. B-2D-062509	WG		1550	8	1	2	3	1	1		X	X	X	X	X	X	X	X	X	X	X	X	Manganese
06. EB-01-062509	WQ		1615	8	1	2	3	1	1		X	X	X	X	X	X	X	X	X	X	X	X	
07. B-21D-062509	WG		1820	8	1	2	3	1	1		X	X	X	X	X	X	X	X	X	X	X	X	
08. TB-03-062509	WQ	✓	-	1	X	1					X												

TOTAL NUMBER OF CONTAINERS

SHIPMENT METHOD	NO. OF COOLERS	RELINQUISHED BY / AFFILIATION	DATE	TIME	RECEIVED BY / AFFILIATION	DATE	TIME
pick up	1	<i>[Signature]</i> <u>OBG</u>	6/26/09	945	<i>[Signature]</i> <u>Merit</u>	6-26-09	945
AIRBILL NO.		<i>[Signature]</i> <u>Merit</u>	6-26-09	1210	<i>[Signature]</i> <u>Burns Reed</u>	6-26-09	12:10

Sample Condition	
Temp in C	<u>7.2</u>
Received on Ice	Y/N
Sealed Cooler	Y/N
Samples Intact	Y/N

Additional Comments: End of Batch

Sampler Name: Kevin Schneider
 Sampler Signature: *[Signature]* Date: 6/25/09

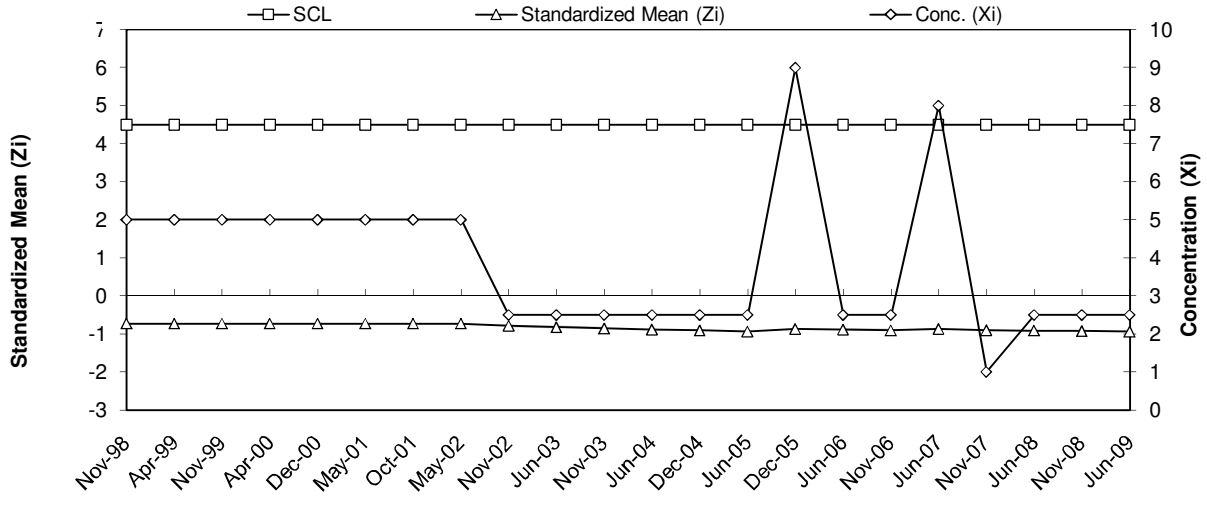
APPENDIX D

Shewart - Charts

REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.78	5.19
2	Aug-95	10		
3	Jun-96	10		
4	Aug-96	10		
5	Nov-96	10		
6	May-97	10		
7	Nov-97	5		
8	May-98	5		

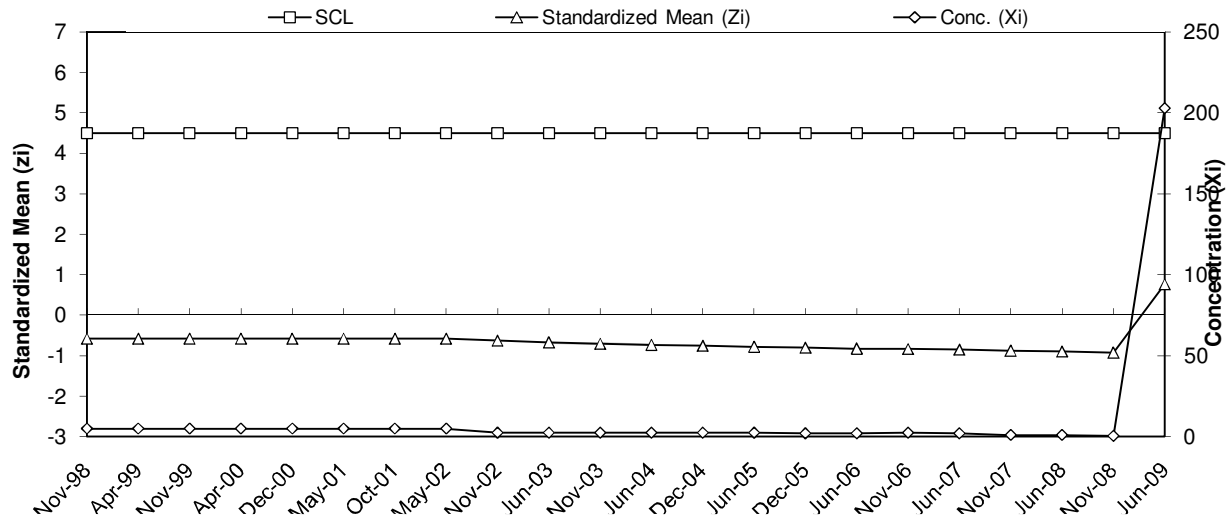
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Z_i)
9	Nov-98	4.5	5	5.00	-0.73
10	Apr-99	4.5	5	5.00	-0.73
11	Nov-99	4.5	5	5.00	-0.73
12	Apr-00	4.5	5	5.00	-0.73
13	Dec-00	4.5	5	5.00	-0.73
14	May-01	4.5	5	5.00	-0.73
15	Oct-01	4.5	5	5.00	-0.73
16	May-02	4.5	5	5.00	-0.73
17	Nov-02	4.5	2.5	4.72	-0.78
18	Jun-03	4.5	2.5	4.50	-0.82
19	Nov-03	4.5	2.5	4.32	-0.86
20	Jun-04	4.5	2.5	4.17	-0.89
21	Dec-04	4.5	2.5	4.04	-0.91
22	Jun-05	4.5	2.5	3.93	-0.93
23	Dec-05	4.5	9	4.27	-0.87
24	Jun-06	4.5	2.5	4.16	-0.89
25	Nov-06	4.5	2.5	4.06	-0.91
26	Jun-07	4.5	8	4.28	-0.87
27	Nov-07	4.5	1	4.11	-0.90
28	Jun-08	4.5	2.5	4.03	-0.92
29	Nov-08	4.5	2.5	3.95	-0.93
30	Jun-09	4.5	2.5	3.89	-0.94



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.13	5.40
2	Aug-95	10		
3	Jun-96	10		
4	Aug-96	10		
5	Nov-96	10		
6	May-97	5		
7	Nov-97	5		
8	May-98	5		

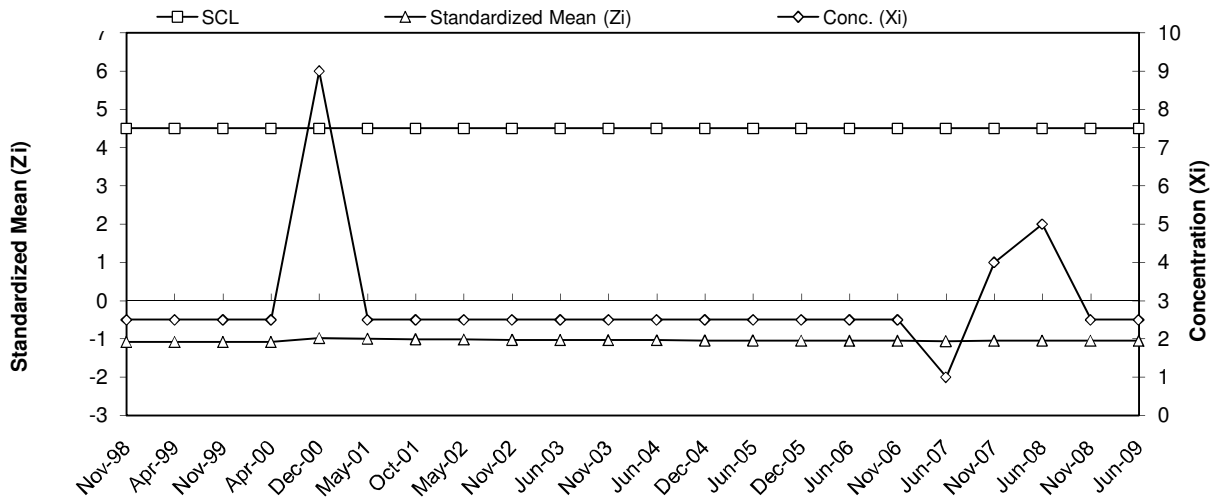
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Z_i)
9	Nov-98	4.5	5	5.00	-0.58
10	Apr-99	4.5	5	5.00	-0.58
11	Nov-99	4.5	5	5.00	-0.58
12	Apr-00	4.5	5	5.00	-0.58
13	Dec-00	4.5	5	5.00	-0.58
14	May-01	4.5	5	5.00	-0.58
15	Oct-01	4.5	5	5.00	-0.58
16	May-02	4.5	5	5.00	-0.58
17	Nov-02	4.5	2.5	4.72	-0.63
18	Jun-03	4.5	2.5	4.50	-0.67
19	Nov-03	4.5	2.5	4.32	-0.71
20	Jun-04	4.5	2.5	4.17	-0.73
21	Dec-04	4.5	2.5	4.04	-0.76
22	Jun-05	4.5	2.5	3.93	-0.78
23	Dec-05	4.5	2	3.80	-0.80
24	Jun-06	4.5	2	3.69	-0.82
25	Nov-06	4.5	2.5	3.62	-0.84
26	Jun-07	4.5	2	3.53	-0.85
27	Nov-07	4.5	1	3.39	-0.88
28	Jun-08	4.5	1	3.28	-0.90
29	Nov-08	4.5	0.5	3.14	-0.92
30	Jun-09	4.5	203	12.23	0.76



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d Ni**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	16.83	13.28
2	Aug-95	20		
3	Jun-96	10		
4	Aug-96	10		
5	Nov-96	10		
6	May-97	28		
7	Nov-97	39		
8	May-98	2.5		

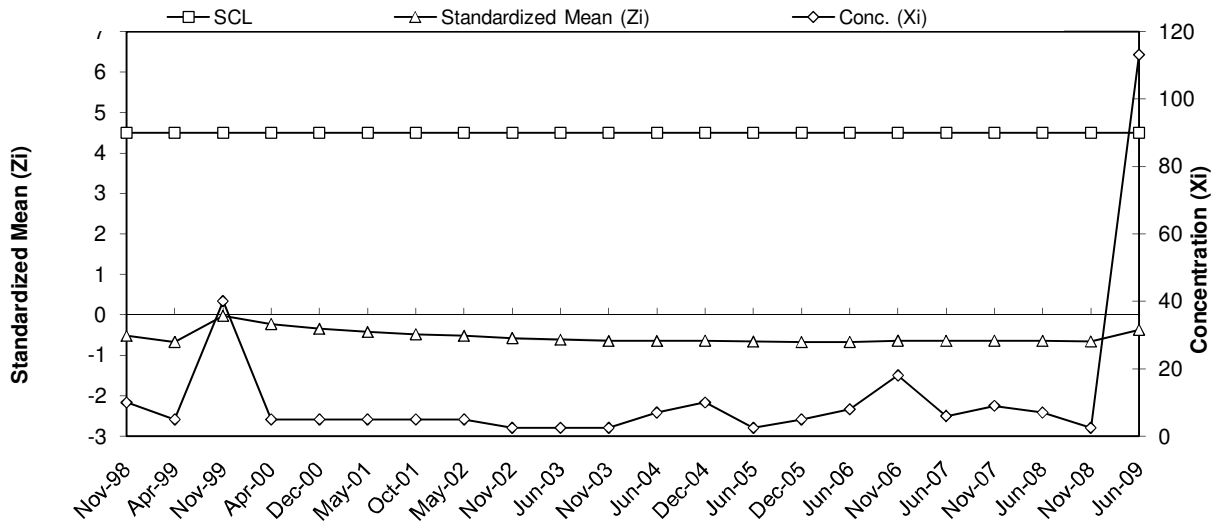
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	Nov-98	4.5	2.5	2.50	-1.08
10	Apr-99	4.5	2.5	2.50	-1.08
11	Nov-99	4.5	2.5	2.50	-1.08
12	Apr-00	4.5	2.5	2.50	-1.08
13	Dec-00	4.5	9	3.80	-0.98
14	May-01	4.5	2.5	3.58	-1.00
15	Oct-01	4.5	2.5	3.43	-1.01
16	May-02	4.5	2.5	3.31	-1.02
17	Nov-02	4.5	2.5	3.22	-1.02
18	Jun-03	4.5	2.5	3.15	-1.03
19	Nov-03	4.5	2.5	3.09	-1.03
20	Jun-04	4.5	2.5	3.04	-1.04
21	Dec-04	4.5	2.5	3.00	-1.04
22	Jun-05	4.5	2.5	2.96	-1.04
23	Dec-05	4.5	2.5	2.93	-1.05
24	Jun-06	4.5	2.5	2.91	-1.05
25	Nov-06	4.5	2.5	2.88	-1.05
26	Jun-07	4.5	1	2.78	-1.06
27	Nov-07	4.5	4	2.84	-1.05
28	Jun-08	4.5	5	2.95	-1.05
29	Nov-08	4.5	2.5	2.93	-1.05
30	Jun-09	4.5	2.5	2.91	-1.05



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	18.75	16.62
2	Aug-95	10		
3	Jun-96	10		
4	Aug-96	50		
5	Nov-96	30		
6	May-97	30		
7	Nov-97	5		
8	May-98	5		

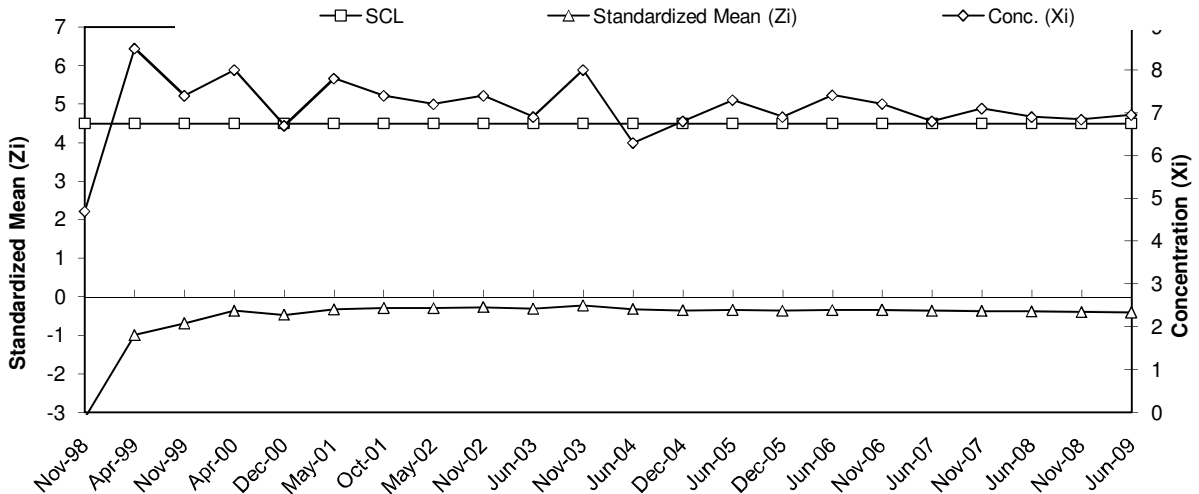
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	Nov-98	4.5	10	10.00	-0.53
10	Apr-99	4.5	5	7.50	-0.68
11	Nov-99	4.5	40	18.33	-0.03
12	Apr-00	4.5	5	15.00	-0.23
13	Dec-00	4.5	5	13.00	-0.35
14	May-01	4.5	5	11.67	-0.43
15	Oct-01	4.5	5	10.71	-0.48
16	May-02	4.5	5	10.00	-0.53
17	Nov-02	4.5	2.5	9.17	-0.58
18	Jun-03	4.5	2.5	8.50	-0.62
19	Nov-03	4.5	2.5	7.95	-0.65
20	Jun-04	4.5	7	7.88	-0.65
21	Dec-04	4.5	10	8.04	-0.64
22	Jun-05	4.5	2.5	7.64	-0.67
23	Dec-05	4.5	5	7.47	-0.68
24	Jun-06	4.5	8	7.50	-0.68
25	Nov-06	4.5	18	8.12	-0.64
26	Jun-07	4.5	6	8.00	-0.65
27	Nov-07	4.5	9	8.05	-0.64
28	Jun-08	4.5	7	8.00	-0.65
29	Nov-08	4.5	2.5	7.74	-0.66
30	Jun-09	4.5	113	12.52	-0.37



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	9.0	7.46	0.88
2	Aug-95	8.3		
3	Jun-96	7.5		
4	Aug-96	7.7		
5	Nov-96	7.3		
6	May-97	6.3		
7	Nov-97	6.9		
8	May-98	6.7		

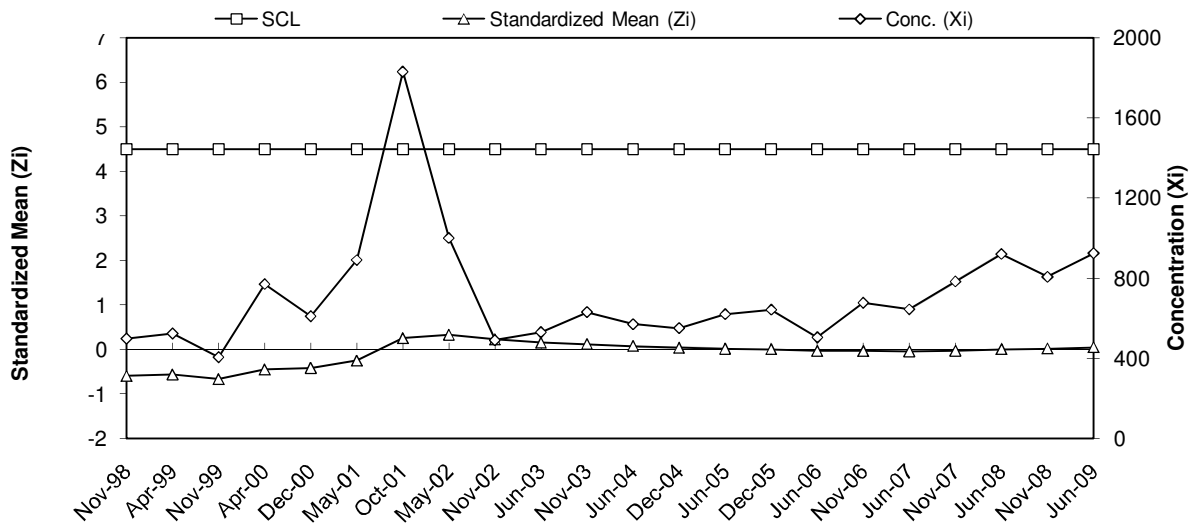
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-98	4.5	4.7	4.70	-3.15
10	Apr-99	4.5	8.5	6.60	-0.98
11	Nov-99	4.5	7.4	6.87	-0.68
12	Apr-00	4.5	8.0	7.15	-0.36
13	Dec-00	4.5	6.7	7.06	-0.46
14	May-01	4.5	7.8	7.18	-0.32
15	Oct-01	4.5	7.4	7.21	-0.28
16	May-02	4.5	7.2	7.21	-0.28
17	Nov-02	4.5	7.4	7.23	-0.26
18	Jun-03	4.5	6.9	7.20	-0.30
19	Nov-03	4.5	8.0	7.27	-0.22
20	Jun-04	4.5	6.3	7.19	-0.31
21	Dec-04	4.5	6.8	7.16	-0.34
22	Jun-05	4.5	7.3	7.17	-0.33
23	Dec-05	4.5	6.9	7.15	-0.35
24	Jun-06	4.5	7.4	7.17	-0.33
25	Nov-06	4.5	7.2	7.17	-0.33
26	Jun-07	4.5	6.8	7.15	-0.35
27	Nov-07	4.5	7.1	7.15	-0.36
28	Jun-08	4.5	6.9	7.14	-0.37
29	Nov-08	4.5	6.8	7.12	-0.39
30	Jun-09	4.5	7.0	7.11	-0.40



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-2d SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	434.0	701.50	339.46
2	Aug-95	479.0		
3	Jun-96	580.0		
4	Aug-96	641.0		
5	Nov-96	769.0		
6	May-97	1500.0		
7	Nov-97	660.0		
8	May-98	549.0		

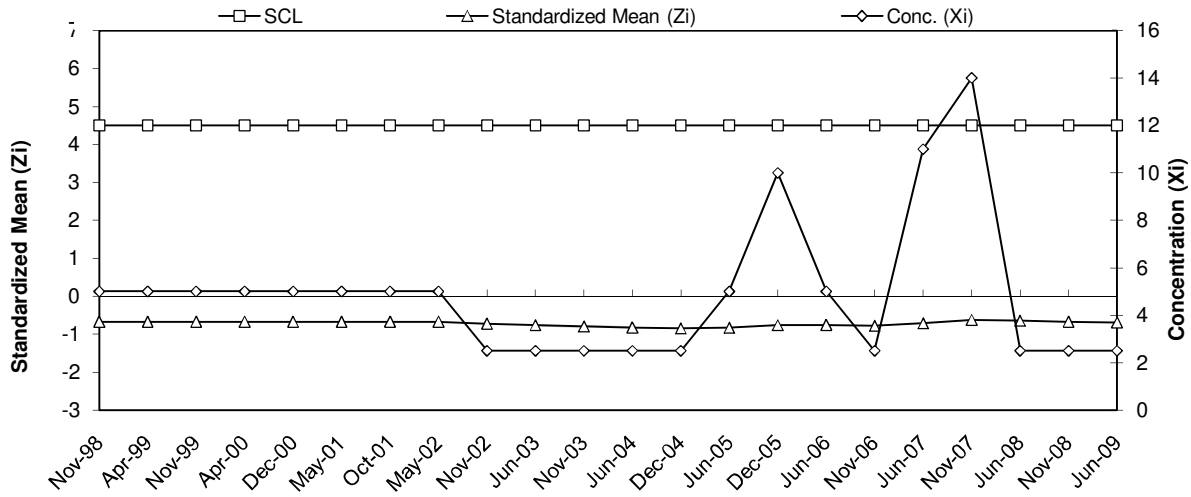
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	Nov-98	4.5	498.0	498.00	-0.60
10	Apr-99	4.5	523.0	510.50	-0.56
11	Nov-99	4.5	405.0	475.33	-0.67
12	Apr-00	4.5	770.0	549.00	-0.45
13	Dec-00	4.5	610.0	561.20	-0.41
14	May-01	4.5	890.0	616.00	-0.25
15	Oct-01	4.5	1830.0	789.43	0.26
16	May-02	4.5	1000.0	815.75	0.34
17	Nov-02	4.5	490.0	779.56	0.23
18	Jun-03	4.5	530.0	754.60	0.16
19	Nov-03	4.5	630.0	743.27	0.12
20	Jun-04	4.5	570.0	728.83	0.08
21	Dec-04	4.5	550.0	715.08	0.04
22	Jun-05	4.5	620.0	708.29	0.02
23	Dec-05	4.5	642.0	703.87	0.01
24	Jun-06	4.5	504.1	691.38	-0.03
25	Nov-06	4.5	677.0	690.54	-0.03
26	Jun-07	4.5	644.0	687.95	-0.04
27	Nov-07	4.5	783.0	692.95	-0.03
28	Jun-08	4.5	920.0	704.31	0.01
29	Nov-08	4.5	806.0	709.15	0.02
30	Jun-09	4.5	924.0	718.91	0.05



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-7 Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.75	5.60
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	May-98	5		

Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-98	4.5	5	5.00	-0.67
10	Apr-99	4.5	5	5.00	-0.67
11	Nov-99	4.5	5	5.00	-0.67
12	Apr-00	4.5	5	5.00	-0.67
13	Dec-00	4.5	5	5.00	-0.67
14	May-01	4.5	5	5.00	-0.67
15	Oct-01	4.5	5	5.00	-0.67
16	May-02	4.5	5	5.00	-0.67
17	Nov-02	4.5	2.5	4.72	-0.72
18	Jun-03	4.5	2.5	4.50	-0.76
19	Nov-03	4.5	2.5	4.32	-0.79
20	Jun-04	4.5	2.5	4.17	-0.82
21	Dec-04	4.5	2.5	4.04	-0.84
22	Jun-05	4.5	5	4.11	-0.83
23	Dec-05	4.5	10	4.50	-0.76
24	Jun-06	4.5	5	4.53	-0.75
25	Nov-06	4.5	2.5	4.41	-0.77
26	Jun-07	4.5	11	4.78	-0.71
27	Nov-07	4.5	14	5.26	-0.62
28	Jun-08	4.5	2.5	5.13	-0.65
29	Nov-08	4.5	2.5	5.00	-0.67
30	Jun-09	4.5	2.5	4.89	-0.69

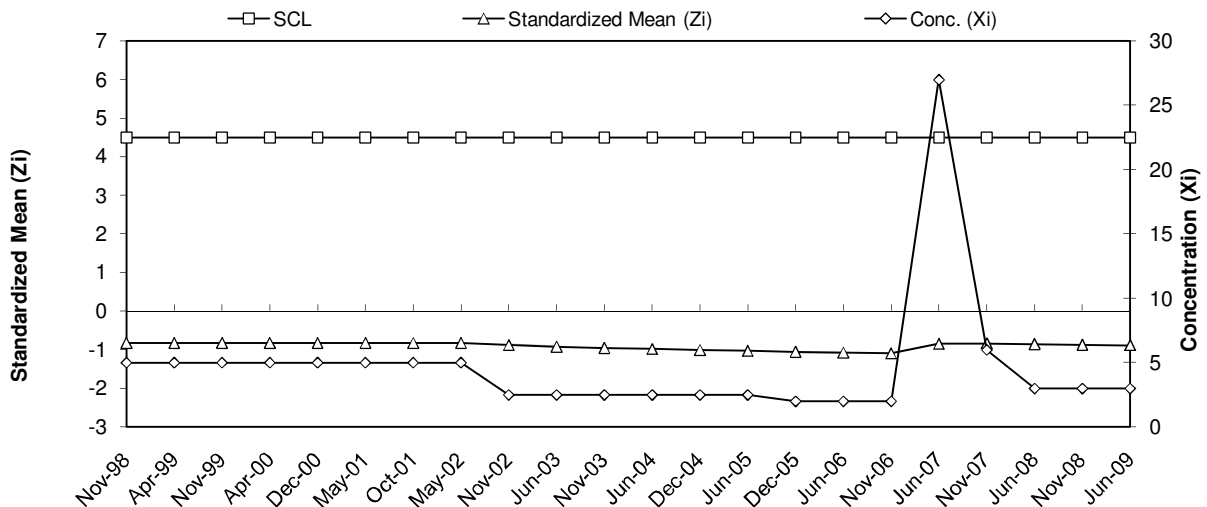


**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-7 Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	9.40	5.32
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	10		
8	May-98	5		

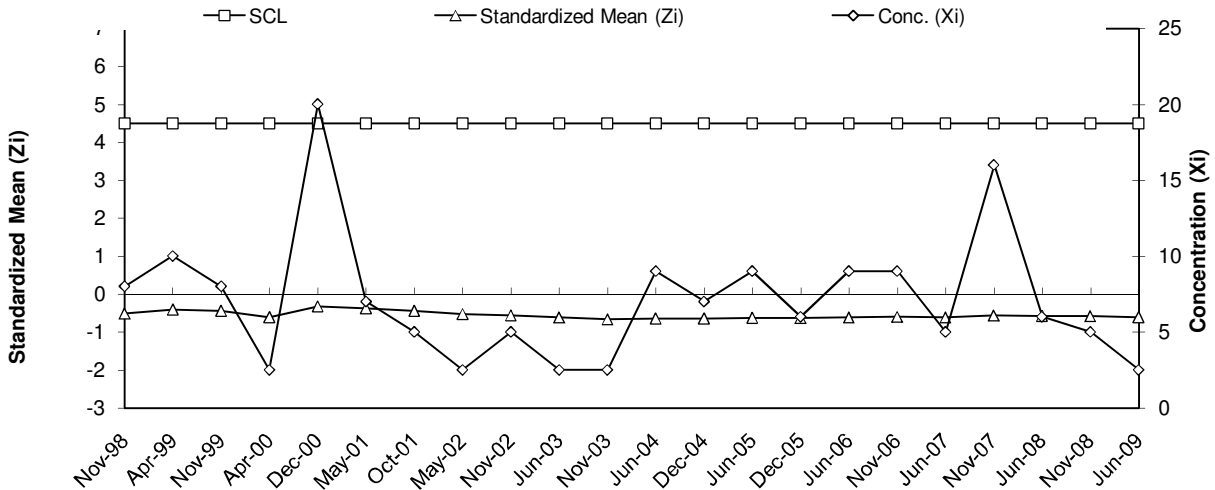
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Z_i)
9	Nov-98	4.5	5	5.00	-0.83
10	Apr-99	4.5	5	5.00	-0.83
11	Nov-99	4.5	5	5.00	-0.83
12	Apr-00	4.5	5	5.00	-0.83
13	Dec-00	4.5	5	5.00	-0.83
14	May-01	4.5	5	5.00	-0.83
15	Oct-01	4.5	5	5.00	-0.83
16	May-02	4.5	5	5.00	-0.83
17	Nov-02	4.5	2.5	4.72	-0.88
18	Jun-03	4.5	2.5	4.50	-0.92
19	Nov-03	4.5	2.5	4.32	-0.96
20	Jun-04	4.5	2.5	4.17	-0.98
21	Dec-04	4.5	2.5	4.04	-1.01
22	Jun-05	4.5	2.5	3.93	-1.03
23	Dec-05	4.5	2	3.80	-1.05
24	Jun-06	4.5	2	3.69	-1.07
25	Nov-06	4.5	2	3.59	-1.09
26	Jun-07	4.5	27	4.89	-0.85
27	Nov-07	4.5	6	4.95	-0.84
28	Jun-08	4.5	3	4.85	-0.86
29	Nov-08	4.5	3	4.76	-0.87
30	Jun-09	4.5	3	4.68	-0.89



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-7 Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	12.70	9.19
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	20		
7	May-97	14		
8	May-98	2.5		

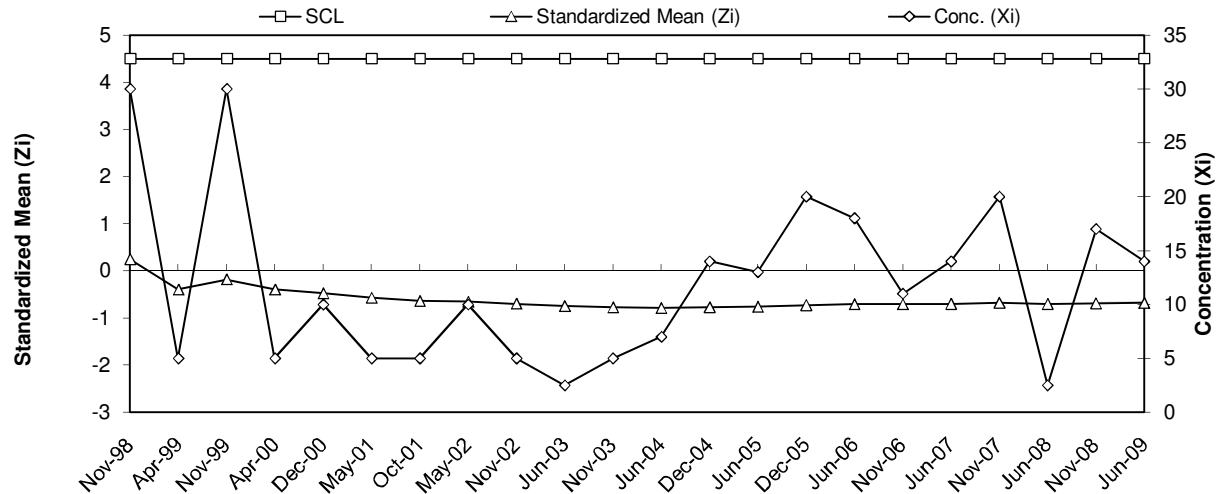
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-98	4.5	8	8.00	-0.51
10	Apr-99	4.5	10	9.00	-0.40
11	Nov-99	4.5	8	8.67	-0.44
12	Apr-00	4.5	2.5	7.13	-0.61
13	Dec-00	4.5	20	9.70	-0.33
14	May-01	4.5	7	9.25	-0.38
15	Oct-01	4.5	5	8.64	-0.44
16	May-02	4.5	2.5	7.88	-0.53
17	Nov-02	4.5	5	7.56	-0.56
18	Jun-03	4.5	2.5	7.05	-0.61
19	Nov-03	4.5	2.5	6.64	-0.66
20	Jun-04	4.5	9	6.83	-0.64
21	Dec-04	4.5	7	6.85	-0.64
22	Jun-05	4.5	9	7.00	-0.62
23	Dec-05	4.5	6	6.93	-0.63
24	Jun-06	4.5	9	7.06	-0.61
25	Nov-06	4.5	9	7.18	-0.60
26	Jun-07	4.5	5	7.06	-0.61
27	Nov-07	4.5	16	7.53	-0.56
28	Jun-08	4.5	6	7.45	-0.57
29	Nov-08	4.5	5	7.33	-0.58
30	Jun-09	4.5	2.5	7.11	-0.61



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-7 Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	25.25	19.40
2	Aug-95	10		
3	Feb-96	22		
4	Jun-96	20		
5	Aug-96	60		
6	Nov-96	50		
7	May-97	10		
8	May-98	20		

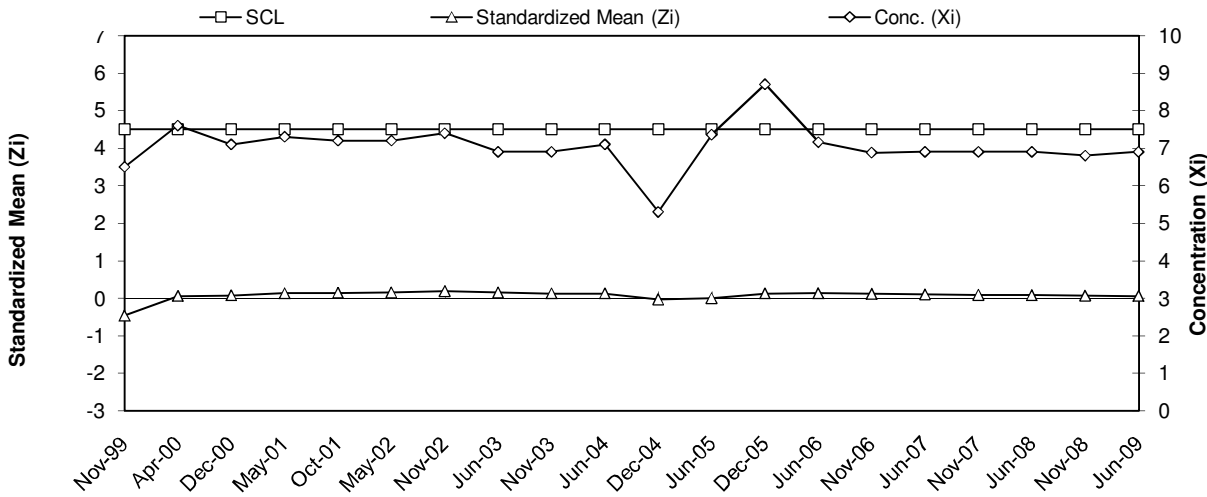
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-98	4.5	30	30.00	0.24
10	Apr-99	4.5	5	17.50	-0.40
11	Nov-99	4.5	30	21.67	-0.18
12	Apr-00	4.5	5	17.50	-0.40
13	Dec-00	4.5	10	16.00	-0.48
14	May-01	4.5	5	14.17	-0.57
15	Oct-01	4.5	5	12.86	-0.64
16	May-02	4.5	10	12.50	-0.66
17	Nov-02	4.5	5	11.67	-0.70
18	Jun-03	4.5	2.5	10.75	-0.75
19	Nov-03	4.5	5	10.23	-0.77
20	Jun-04	4.5	7	9.96	-0.79
21	Dec-04	4.5	14	10.27	-0.77
22	Jun-05	4.5	13	10.46	-0.76
23	Dec-05	4.5	20	11.10	-0.73
24	Jun-06	4.5	18	11.53	-0.71
25	Nov-06	4.5	11	11.50	-0.71
26	Jun-07	4.5	14	11.64	-0.70
27	Nov-07	4.5	20	12.08	-0.68
28	Jun-08	4.5	2.5	11.60	-0.70
29	Nov-08	4.5	17	11.86	-0.69
30	Jun-09	4.5	14	11.95	-0.69



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-7 pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	7.5	6.99	1.06
2	Jun-96	6.9		
3	Aug-96	7.6		
4	Nov-96	8.0		
5	May-97	7.2		
6	May-98	6.6		
7	Nov-98	4.6		
8	Apr-99	7.5		

Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-99	4.5	6.5	6.50	-0.46
10	Apr-00	4.5	7.6	7.05	0.06
11	Dec-00	4.5	7.1	7.07	0.07
12	May-01	4.5	7.3	7.13	0.13
13	Oct-01	4.5	7.2	7.14	0.14
14	May-02	4.5	7.2	7.15	0.15
15	Nov-02	4.5	7.4	7.19	0.19
16	Jun-03	4.5	6.9	7.15	0.15
17	Nov-03	4.5	6.9	7.12	0.13
18	Jun-04	4.5	7.1	7.12	0.13
19	Dec-04	4.5	5.3	6.95	-0.03
20	Jun-05	4.5	7.4	6.99	0.00
21	Dec-05	4.5	8.7	7.12	0.13
22	Jun-06	4.5	7.2	7.12	0.13
23	Nov-06	4.5	6.9	7.11	0.11
24	Jun-07	4.5	6.9	7.09	0.10
25	Nov-07	4.5	6.9	7.08	0.09
26	Jun-08	4.5	6.9	7.07	0.08
27	Nov-08	4.5	6.8	7.06	0.07
28	Jun-09	4.5	6.9	7.05	0.06

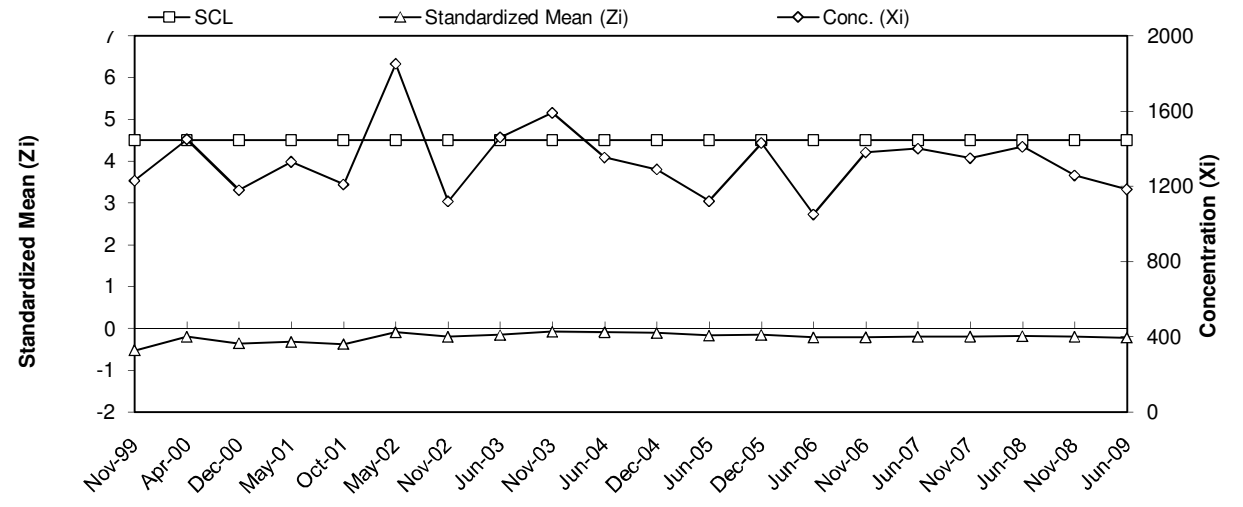


REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART

B-7 SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	1509.0	1,405.88	336.33
2	Jun-96	1508.0		
3	Aug-96	1567.0		
4	Nov-96	1960.0		
5	May-97	780.0		
6	May-98	1270.0		
7	Nov-98	1240.0		
8	Apr-99	1413.0		

Ti	Date	SCL	Conc. (Xi)	Mean (<u>Xi</u>)	Standardized Mean (Zi)
9	Nov-99	4.5	1230.0	1,230.00	-0.52
10	Apr-00	4.5	1450.0	1,340.00	-0.20
11	Dec-00	4.5	1180.0	1,286.67	-0.35
12	May-01	4.5	1330.0	1,297.50	-0.32
13	Oct-01	4.5	1210.0	1,280.00	-0.37
14	May-02	4.5	1850.0	1,375.00	-0.09
15	Nov-02	4.5	1120.0	1,338.57	-0.20
16	Jun-03	4.5	1460.0	1,353.75	-0.15
17	Nov-03	4.5	1590.0	1,380.00	-0.08
18	Jun-04	4.5	1353.0	1,377.30	-0.08
19	Dec-04	4.5	1290.0	1,369.36	-0.11
20	Jun-05	4.5	1121.0	1,348.67	-0.17
21	Dec-05	4.5	1430.0	1,354.92	-0.15
22	Jun-06	4.5	1051.0	1,333.21	-0.22
23	Nov-06	4.5	1380.0	1,336.33	-0.21
24	Jun-07	4.5	1400.0	1,340.31	-0.19
25	Nov-07	4.5	1350.0	1,340.88	-0.19
26	Jun-08	4.5	1410.0	1,344.72	-0.18
27	Nov-08	4.5	1258.0	1,340.16	-0.20
28	Jun-09	4.5	1184.0	1,332.35	-0.22

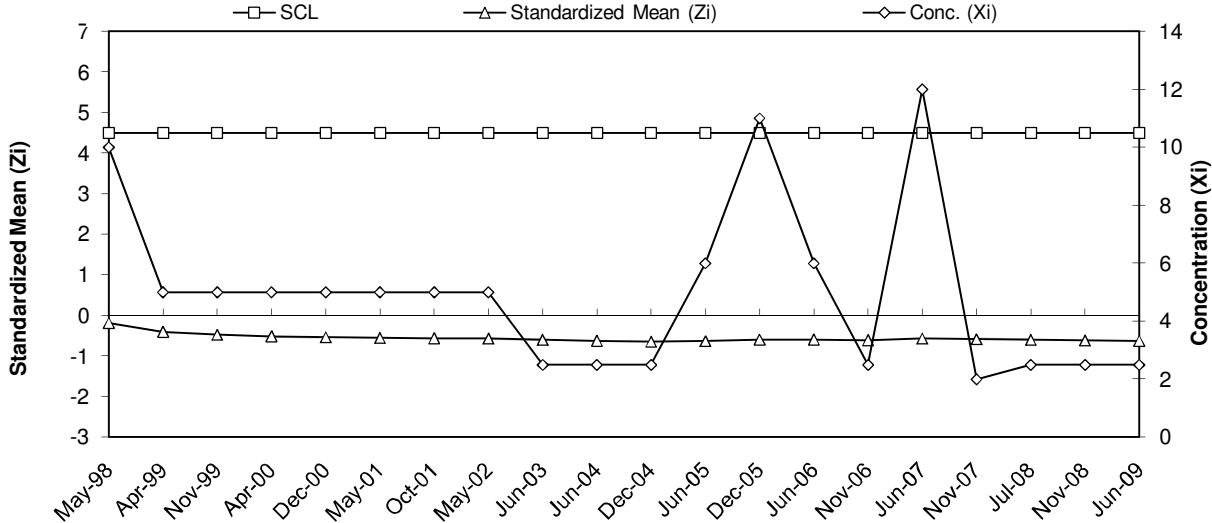


**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-9 Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	12.12	11.34
2	Aug-95	37		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

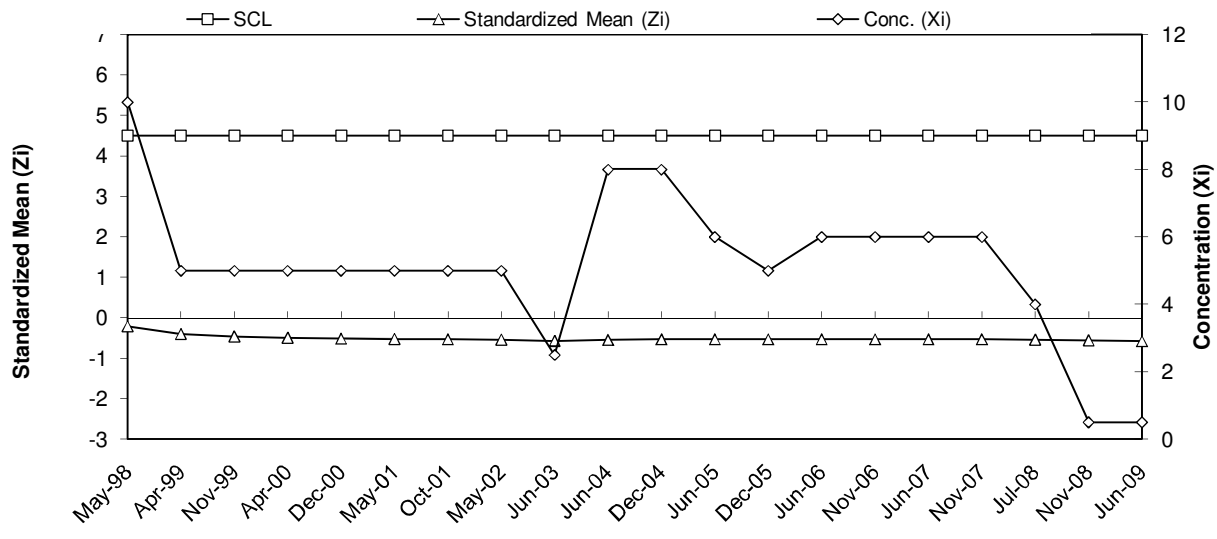
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	10	10.00	-0.19
10	Apr-99	4.5	5	7.50	-0.41
11	Nov-99	4.5	5	6.67	-0.48
12	Apr-00	4.5	5	6.25	-0.52
13	Dec-00	4.5	5	6.00	-0.54
14	May-01	4.5	5	5.83	-0.55
15	Oct-01	4.5	5	5.71	-0.56
16	May-02	4.5	5	5.63	-0.57
17	Jun-03	4.5	2.5	5.28	-0.60
18	Jun-04	4.5	2.5	5.00	-0.63
19	Dec-04	4.5	2.5	4.77	-0.65
20	Jun-05	4.5	6	4.88	-0.64
21	Dec-05	4.5	11	5.35	-0.60
22	Jun-06	4.5	6	5.39	-0.59
23	Nov-06	4.5	2.5	5.20	-0.61
24	Jun-07	4.5	12	5.63	-0.57
25	Nov-07	4.5	2	5.41	-0.59
26	Jul-08	4.5	2.5	5.25	-0.61
27	Nov-08	4.5	2.5	5.11	-0.62
28	Jun-09	4.5	2.5	4.98	-0.63



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	12.87	13.26
2	Aug-95	43		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

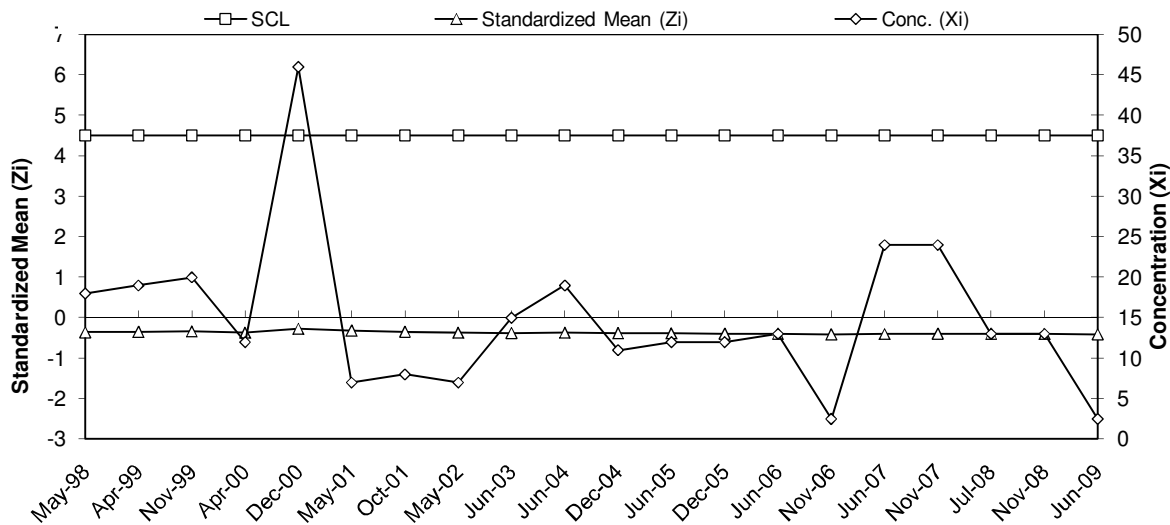
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	10	10.00	-0.22
10	Apr-99	4.5	5	7.50	-0.40
11	Nov-99	4.5	5	6.67	-0.47
12	Apr-00	4.5	5	6.25	-0.50
13	Dec-00	4.5	5	6.00	-0.52
14	May-01	4.5	5	5.83	-0.53
15	Oct-01	4.5	5	5.71	-0.54
16	May-02	4.5	5	5.63	-0.55
17	Jun-03	4.5	2.5	5.28	-0.57
18	Jun-04	4.5	8	5.55	-0.55
19	Dec-04	4.5	8	5.77	-0.54
20	Jun-05	4.5	6	5.79	-0.53
21	Dec-05	4.5	5	5.73	-0.54
22	Jun-06	4.5	6	5.75	-0.54
23	Nov-06	4.5	6	5.77	-0.54
24	Jun-07	4.5	6	5.78	-0.53
25	Nov-07	4.5	6	5.79	-0.53
26	Jul-08	4.5	4	5.69	-0.54
27	Nov-08	4.5	0.5	5.42	-0.56
28	Jun-09	4.5	0.5	5.18	-0.58



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	39.83	59.86
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	51		
8	Nov-97	183		

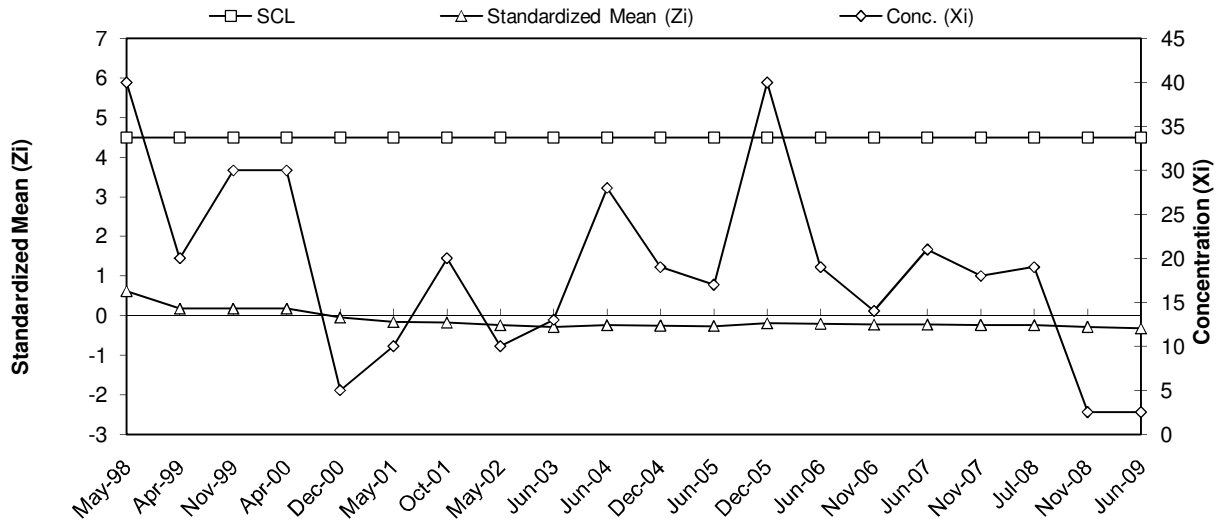
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	18	18.00	-0.36
10	Apr-99	4.5	19	18.50	-0.36
11	Nov-99	4.5	20	19.00	-0.35
12	Apr-00	4.5	12	17.25	-0.38
13	Dec-00	4.5	46	23.00	-0.28
14	May-01	4.5	7	20.33	-0.33
15	Oct-01	4.5	8	18.57	-0.36
16	May-02	4.5	7	17.13	-0.38
17	Jun-03	4.5	15	16.89	-0.38
18	Jun-04	4.5	19	17.10	-0.38
19	Dec-04	4.5	11	16.55	-0.39
20	Jun-05	4.5	12	16.17	-0.40
21	Dec-05	4.5	12	15.85	-0.40
22	Jun-06	4.5	13	15.64	-0.40
23	Nov-06	4.5	2.5	14.77	-0.42
24	Jun-07	4.5	24	15.34	-0.41
25	Nov-07	4.5	24	15.85	-0.40
26	Jul-08	4.5	13	15.69	-0.40
27	Nov-08	4.5	13	15.55	-0.41
28	Jun-09	4.5	2.5	14.90	-0.42



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	26.23	22.36
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	70		
6	Nov-96	40		
7	May-97	20		
8	Nov-97	40		

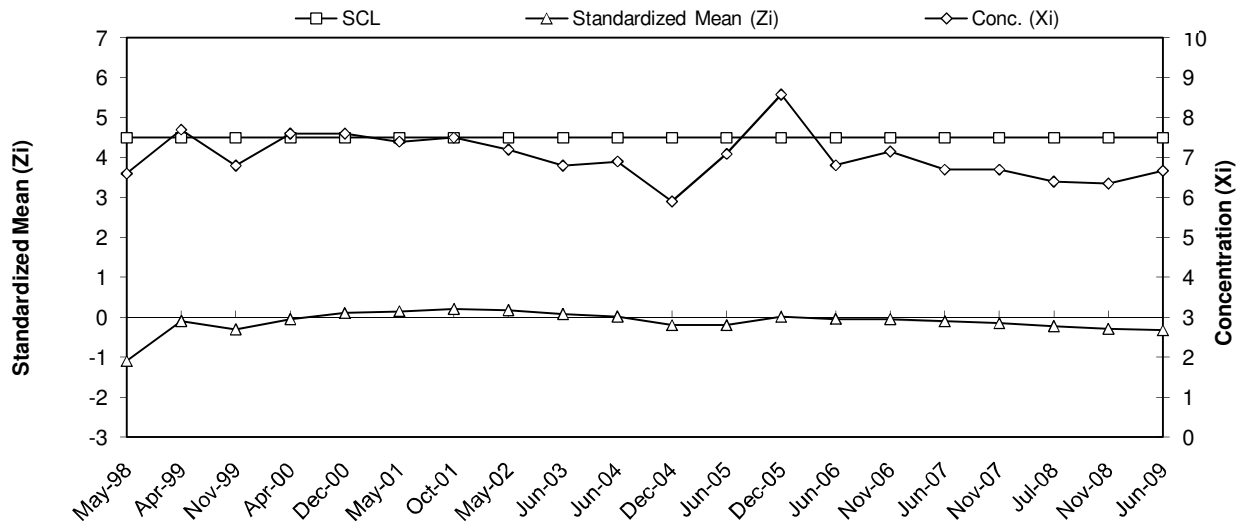
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	40	40.00	0.62
10	Apr-99	4.5	20	30.00	0.17
11	Nov-99	4.5	30	30.00	0.17
12	Apr-00	4.5	30	30.00	0.17
13	Dec-00	4.5	5	25.00	-0.06
14	May-01	4.5	10	22.50	-0.17
15	Oct-01	4.5	20	22.14	-0.18
16	May-02	4.5	10	20.63	-0.25
17	Jun-03	4.5	13	19.78	-0.29
18	Jun-04	4.5	28	20.60	-0.25
19	Dec-04	4.5	19	20.45	-0.26
20	Jun-05	4.5	17	20.17	-0.27
21	Dec-05	4.5	40	21.69	-0.20
22	Jun-06	4.5	19	21.50	-0.21
23	Nov-06	4.5	14	21.00	-0.23
24	Jun-07	4.5	21	21.00	-0.23
25	Nov-07	4.5	18	20.82	-0.24
26	Jul-08	4.5	19	20.72	-0.25
27	Nov-08	4.5	2.5	19.76	-0.29
28	Jun-09	4.5	2.5	18.90	-0.33



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	7.7	7.20	0.55
2	Aug-95	7.7		
3	Feb-96	7.3		
4	Jun-96	6.8		
5	Aug-96	8.0		
6	Nov-96	6.8		
7	May-97	6.8		
8	Nov-97	6.5		

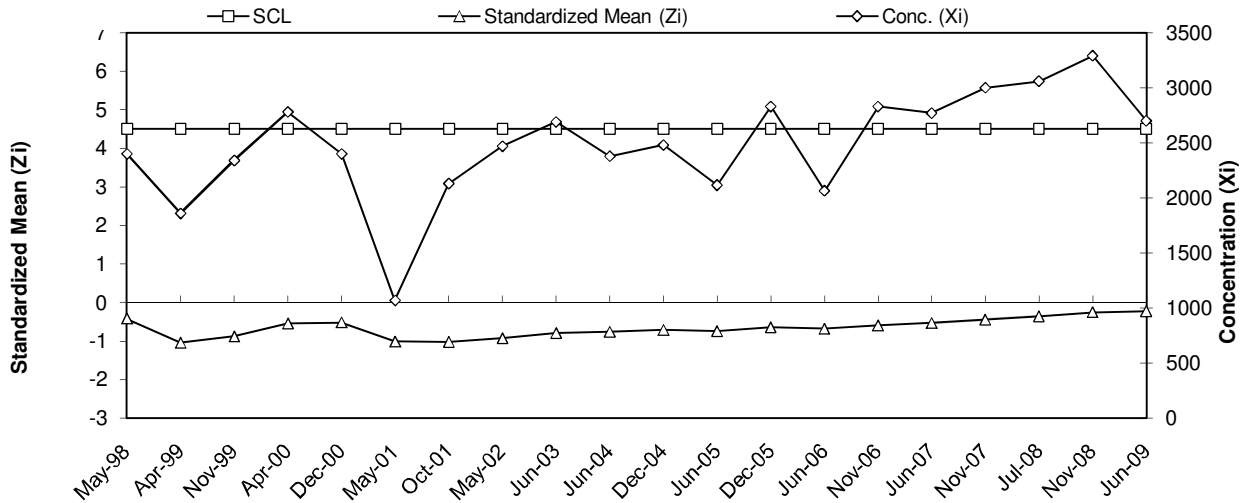
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	6.6	6.60	-1.09
10	Apr-99	4.5	7.7	7.15	-0.09
11	Nov-99	4.5	6.8	7.03	-0.30
12	Apr-00	4.5	7.6	7.18	-0.05
13	Dec-00	4.5	7.6	7.26	0.11
14	May-01	4.5	7.4	7.28	0.15
15	Oct-01	4.5	7.5	7.31	0.21
16	May-02	4.5	7.2	7.30	0.18
17	Jun-03	4.5	6.8	7.24	0.08
18	Jun-04	4.5	6.9	7.21	0.02
19	Dec-04	4.5	5.9	7.09	-0.20
20	Jun-05	4.5	7.1	7.09	-0.20
21	Dec-05	4.5	8.6	7.21	0.01
22	Jun-06	4.5	6.8	7.18	-0.04
23	Nov-06	4.5	7.2	7.18	-0.04
24	Jun-07	4.5	6.7	7.15	-0.10
25	Nov-07	4.5	6.7	7.12	-0.15
26	Jul-08	4.5	6.4	7.08	-0.22
27	Nov-08	4.5	6.4	7.04	-0.29
28	Jun-09	4.5	6.7	7.02	-0.32



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-9 SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	2400	2,578.63	428.85
2	Aug-95	1829		
3	Feb-96	2860		
4	Jun-96	2550		
5	Aug-96	2310		
6	Nov-96	3280		
7	May-97	2600		
8	Nov-97	2800		

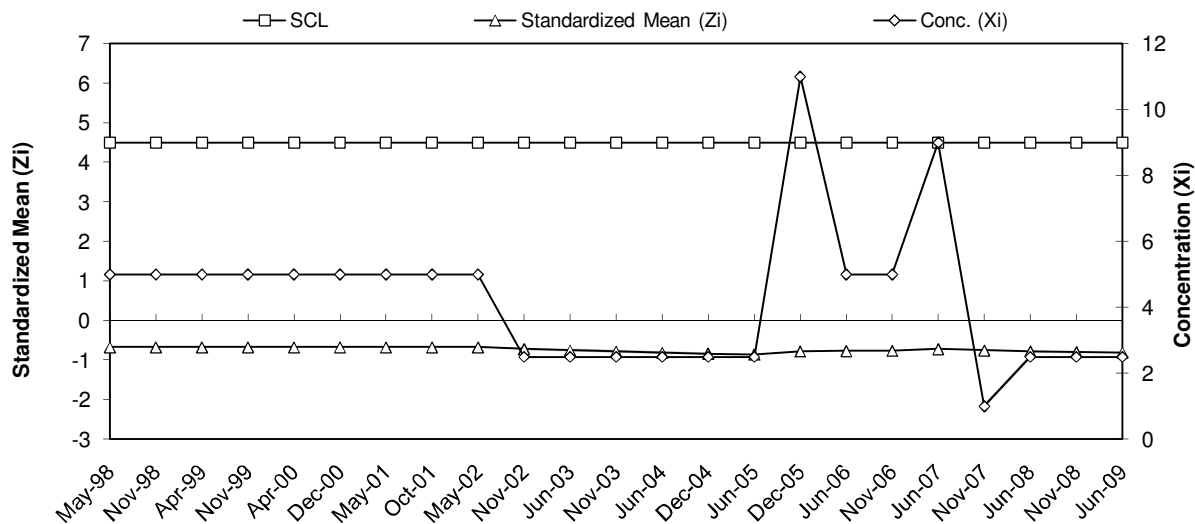
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	2400	2,400.00	-0.42
10	Apr-99	4.5	1860	2,130.00	-1.05
11	Nov-99	4.5	2340	2,200.00	-0.88
12	Apr-00	4.5	2780	2,345.00	-0.54
13	Dec-00	4.5	2400	2,356.00	-0.52
14	May-01	4.5	1070	2,141.67	-1.02
15	Oct-01	4.5	2130	2,140.00	-1.02
16	May-02	4.5	2470	2,181.25	-0.93
17	Jun-03	4.5	2690	2,237.78	-0.79
18	Jun-04	4.5	2379	2,251.90	-0.76
19	Dec-04	4.5	2480	2,272.64	-0.71
20	Jun-05	4.5	2116	2,259.58	-0.74
21	Dec-05	4.5	2830	2,303.46	-0.64
22	Jun-06	4.5	2065	2,286.43	-0.68
23	Nov-06	4.5	2830	2,322.67	-0.60
24	Jun-07	4.5	2770	2,350.63	-0.53
25	Nov-07	4.5	3000	2,388.82	-0.44
26	Jul-08	4.5	3060	2,426.11	-0.36
27	Nov-08	4.5	3290	2,471.58	-0.25
28	Jun-09	4.5	2700	2,483.00	-0.22



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.74	5.57
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

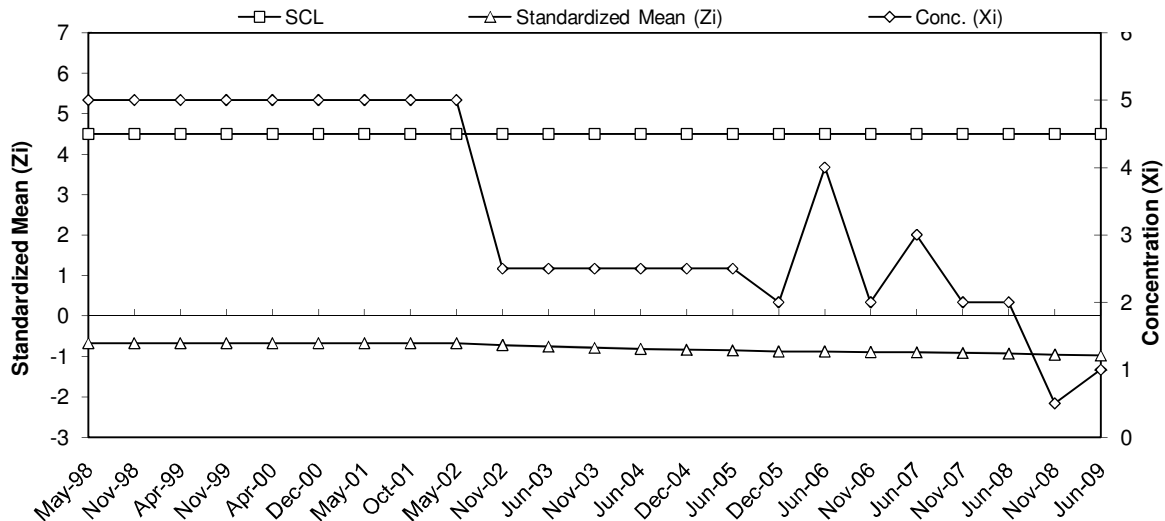
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Z_i)
9	May-98	4.5	5	5.00	-0.67
10	Nov-98	4.5	5	5.00	-0.67
11	Apr-99	4.5	5	5.00	-0.67
12	Nov-99	4.5	5	5.00	-0.67
13	Apr-00	4.5	5	5.00	-0.67
14	Dec-00	4.5	5	5.00	-0.67
15	May-01	4.5	5	5.00	-0.67
16	Oct-01	4.5	5	5.00	-0.67
17	May-02	4.5	5	5.00	-0.67
18	Nov-02	4.5	2.5	4.75	-0.72
19	Jun-03	4.5	2.5	4.55	-0.75
20	Nov-03	4.5	2.5	4.38	-0.78
21	Jun-04	4.5	2.5	4.23	-0.81
22	Dec-04	4.5	2.5	4.11	-0.83
23	Jun-05	4.5	2.5	4.00	-0.85
24	Dec-05	4.5	11	4.44	-0.77
25	Jun-06	4.5	5	4.47	-0.77
26	Nov-06	4.5	5	4.50	-0.76
27	Jun-07	4.5	9	4.74	-0.72
28	Nov-07	4.5	1	4.55	-0.75
29	Jun-08	4.5	2.5	4.45	-0.77
30	Nov-08	4.5	2.5	4.36	-0.79
31	Jun-09	4.5	2.5	4.28	-0.80



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.78	5.56
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

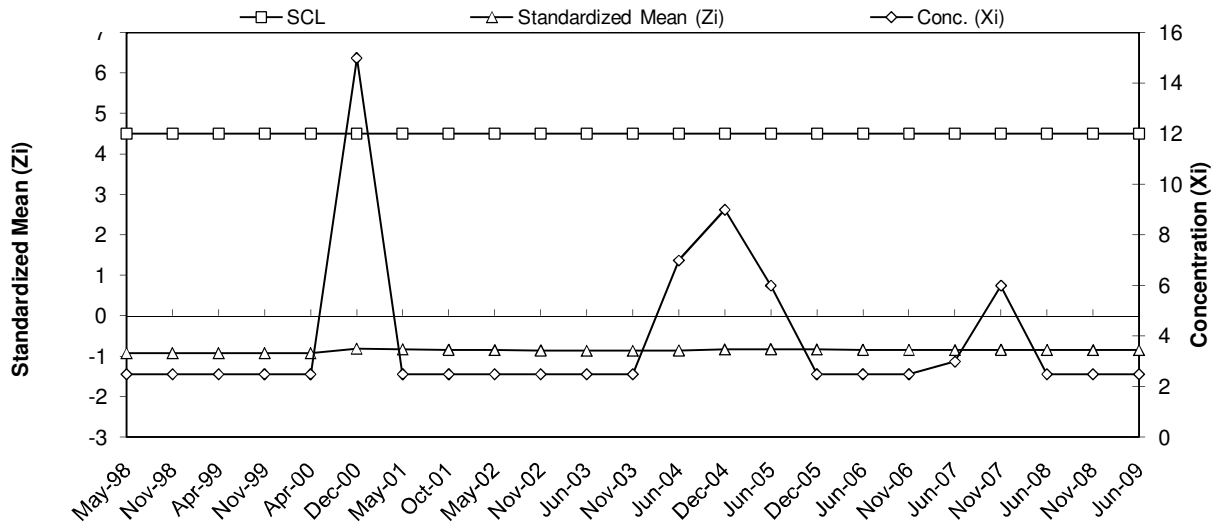
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-0.68
10	Nov-98	4.5	5	5.00	-0.68
11	Apr-99	4.5	5	5.00	-0.68
12	Nov-99	4.5	5	5.00	-0.68
13	Apr-00	4.5	5	5.00	-0.68
14	Dec-00	4.5	5	5.00	-0.68
15	May-01	4.5	5	5.00	-0.68
16	Oct-01	4.5	5	5.00	-0.68
17	May-02	4.5	5	5.00	-0.68
18	Nov-02	4.5	2.5	4.75	-0.72
19	Jun-03	4.5	2.5	4.55	-0.76
20	Nov-03	4.5	2.5	4.38	-0.79
21	Jun-04	4.5	2.5	4.23	-0.82
22	Dec-04	4.5	2.5	4.11	-0.84
23	Jun-05	4.5	2.5	4.00	-0.86
24	Dec-05	4.5	2	3.88	-0.88
25	Jun-06	4.5	4	3.88	-0.88
26	Nov-06	4.5	2	3.78	-0.90
27	Jun-07	4.5	3	3.74	-0.91
28	Nov-07	4.5	2	3.65	-0.92
29	Jun-08	4.5	2	3.57	-0.94
30	Nov-08	4.5	0.5	3.43	-0.96
31	Jun-09	4.5	1	3.33	-0.98



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	20.01	18.96
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	13		
8	Nov-97	62		

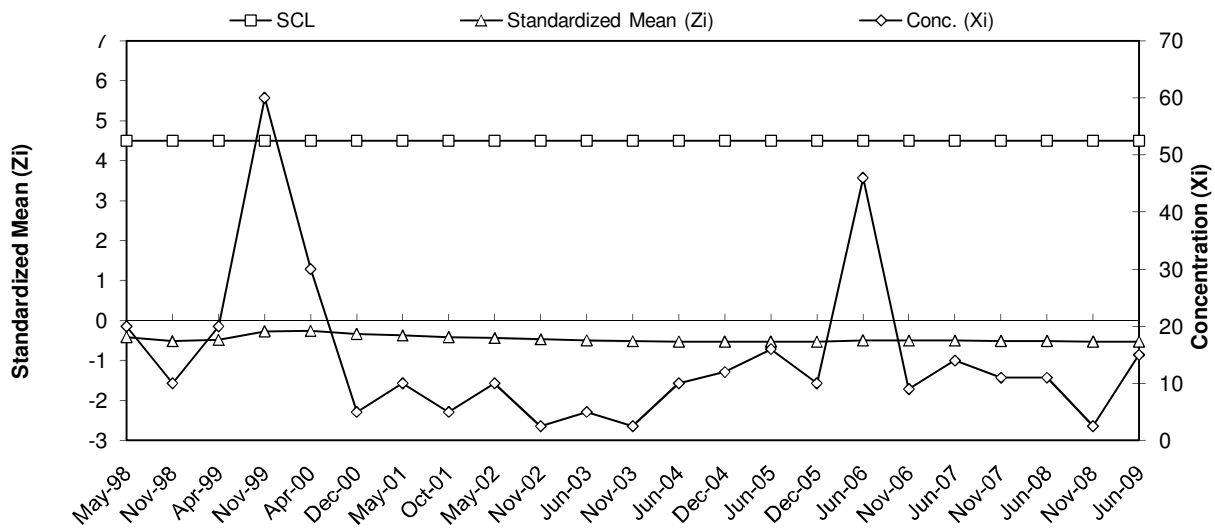
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	2.5	2.50	-0.92
10	Nov-98	4.5	2.5	2.50	-0.92
11	Apr-99	4.5	2.5	2.50	-0.92
12	Nov-99	4.5	2.5	2.50	-0.92
13	Apr-00	4.5	2.5	2.50	-0.92
14	Dec-00	4.5	15	4.58	-0.81
15	May-01	4.5	2.5	4.29	-0.83
16	Oct-01	4.5	2.5	4.06	-0.84
17	May-02	4.5	2.5	3.89	-0.85
18	Nov-02	4.5	2.5	3.75	-0.86
19	Jun-03	4.5	2.5	3.64	-0.86
20	Nov-03	4.5	2.5	3.54	-0.87
21	Jun-04	4.5	7	3.81	-0.85
22	Dec-04	4.5	9	4.18	-0.83
23	Jun-05	4.5	6	4.30	-0.83
24	Dec-05	4.5	2.5	4.19	-0.83
25	Jun-06	4.5	2.5	4.09	-0.84
26	Nov-06	4.5	2.5	4.00	-0.84
27	Jun-07	4.5	3	3.95	-0.85
28	Nov-07	4.5	6	4.05	-0.84
29	Jun-08	4.5	2.5	3.98	-0.85
30	Nov-08	4.5	2.5	3.91	-0.85
31	Jun-09	4.5	2.5	3.85	-0.85



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	150	41.25	50.67
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	60		
6	Nov-96	70		
7	May-97	10		
8	Nov-97	10		

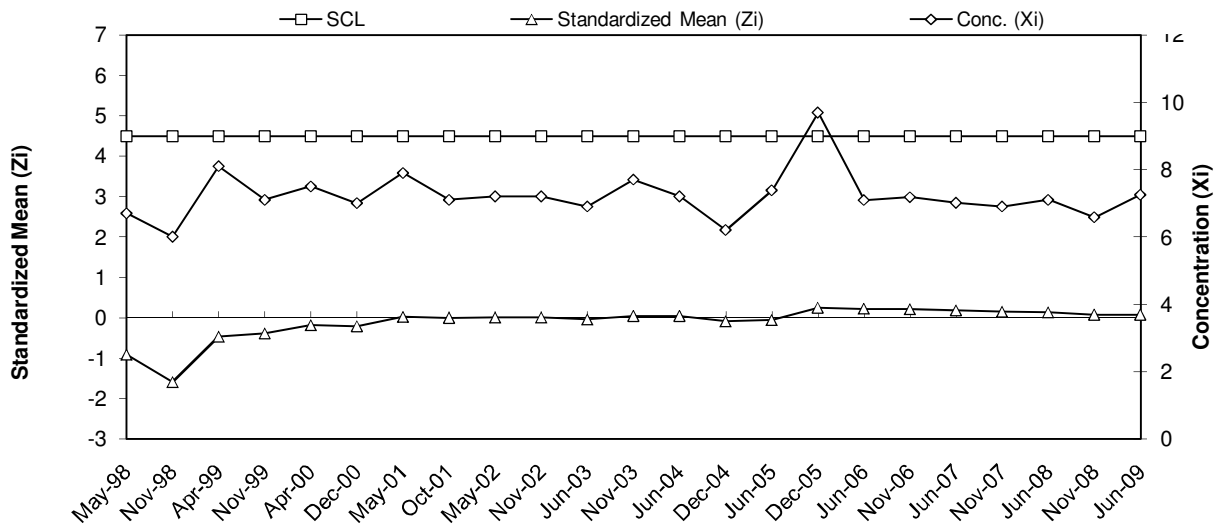
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	20	20.00	-0.42
10	Nov-98	4.5	10	15.00	-0.52
11	Apr-99	4.5	20	16.67	-0.49
12	Nov-99	4.5	60	27.50	-0.27
13	Apr-00	4.5	30	28.00	-0.26
14	Dec-00	4.5	5	24.17	-0.34
15	May-01	4.5	10	22.14	-0.38
16	Oct-01	4.5	5	20.00	-0.42
17	May-02	4.5	10	18.89	-0.44
18	Nov-02	4.5	2.5	17.25	-0.47
19	Jun-03	4.5	5	16.14	-0.50
20	Nov-03	4.5	2.5	15.00	-0.52
21	Jun-04	4.5	10	14.62	-0.53
22	Dec-04	4.5	12	14.43	-0.53
23	Jun-05	4.5	16	14.53	-0.53
24	Dec-05	4.5	10	14.25	-0.53
25	Jun-06	4.5	46	16.12	-0.50
26	Nov-06	4.5	9	15.72	-0.50
27	Jun-07	4.5	14	15.63	-0.51
28	Nov-07	4.5	11	15.40	-0.51
29	Jun-08	4.5	11	15.19	-0.51
30	Nov-08	4.5	2.5	14.61	-0.53
31	Jun-09	4.5	15	14.63	-0.53



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	7.5	7.18	0.52
2	Aug-95	7.9		
3	Feb-96	7.4		
4	Jun-96	7.0		
5	Aug-96	7.5		
6	Nov-96	7.2		
7	May-97	6.5		
8	Nov-97	6.4		

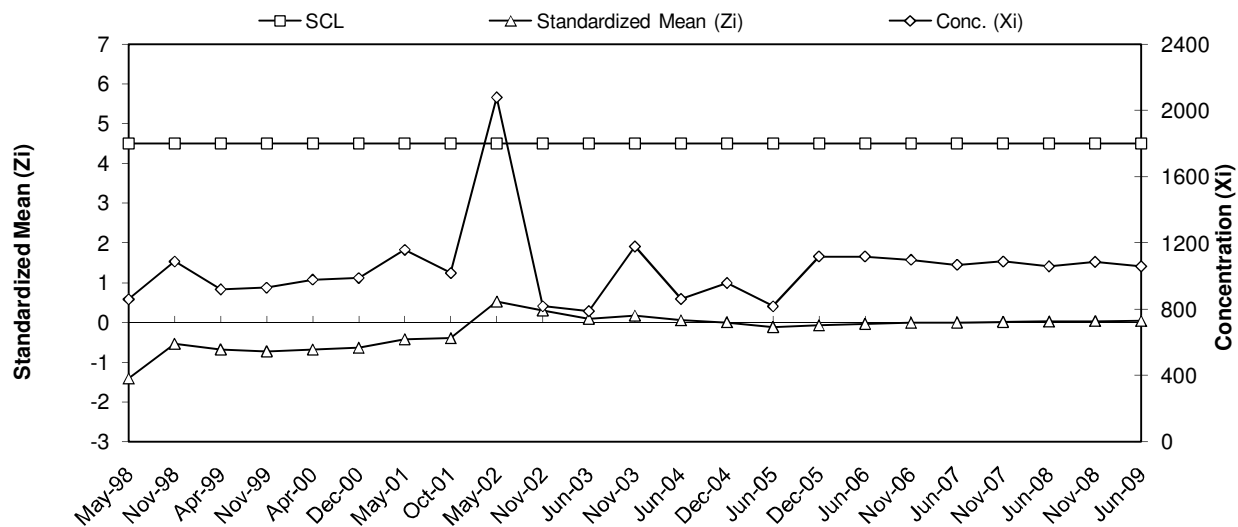
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	6.7	6.70	-0.92
10	Nov-98	4.5	6.0	6.35	-1.59
11	Apr-99	4.5	8.1	6.93	-0.47
12	Nov-99	4.5	7.1	6.98	-0.39
13	Apr-00	4.5	7.5	7.08	-0.18
14	Dec-00	4.5	7.0	7.07	-0.21
15	May-01	4.5	7.9	7.19	0.02
16	Oct-01	4.5	7.1	7.18	0.00
17	May-02	4.5	7.2	7.18	0.01
18	Nov-02	4.5	7.2	7.18	0.01
19	Jun-03	4.5	6.9	7.15	-0.04
20	Nov-03	4.5	7.7	7.20	0.05
21	Jun-04	4.5	7.2	7.20	0.05
22	Dec-04	4.5	6.2	7.13	-0.09
23	Jun-05	4.5	7.4	7.15	-0.06
24	Dec-05	4.5	9.7	7.31	0.25
25	Jun-06	4.5	7.1	7.29	0.23
26	Nov-06	4.5	7.2	7.29	0.21
27	Jun-07	4.5	7.0	7.27	0.19
28	Nov-07	4.5	6.9	7.25	0.15
29	Jun-08	4.5	7.1	7.25	0.14
30	Nov-08	4.5	6.6	7.22	0.08
31	Jun-09	4.5	7.3	7.22	0.08



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-18a SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	1048	1,046.75	130.80
2	Aug-95	989		
3	Feb-96	1021		
4	Jun-96	944.0		
5	Aug-96	1041		
6	Nov-96	1331		
7	May-97	900		
8	Nov-97	1100		

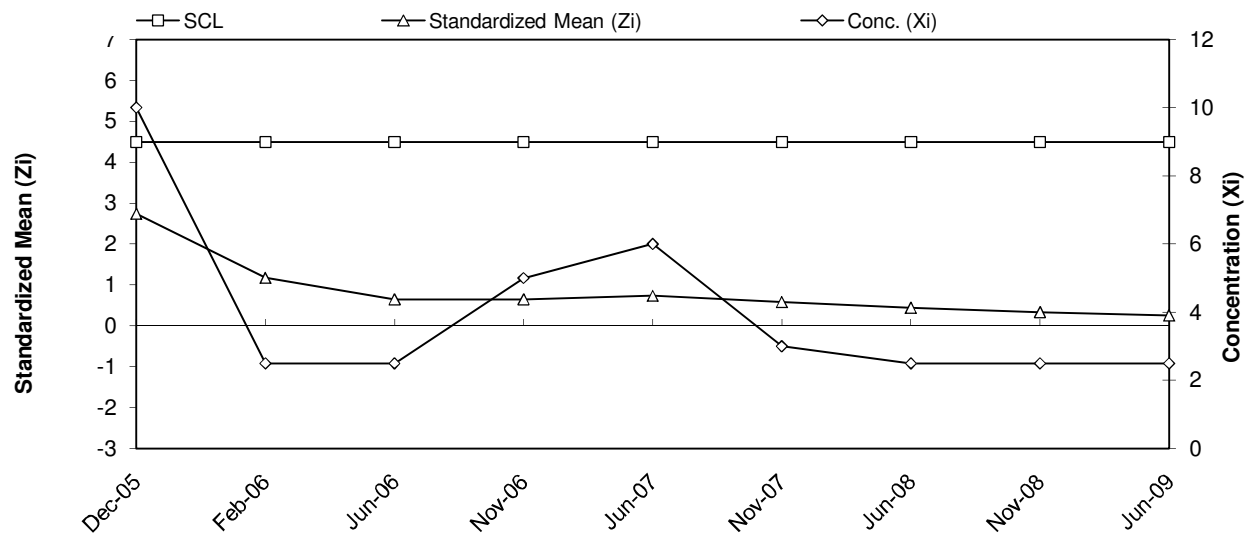
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	862	862.00	-1.41
10	Nov-98	4.5	1090.0	976.00	-0.54
11	Apr-99	4.5	921	957.67	-0.68
12	Nov-99	4.5	932	951.25	-0.73
13	Apr-00	4.5	980	957.00	-0.69
14	Dec-00	4.5	990.0	962.50	-0.64
15	May-01	4.5	1160	990.71	-0.43
16	Oct-01	4.5	1020	994.38	-0.40
17	May-02	4.5	2080	1,115.00	0.52
18	Nov-02	4.5	820	1,085.50	0.30
19	Jun-03	4.5	790	1,058.64	0.09
20	Nov-03	4.5	1180	1,068.75	0.17
21	Jun-04	4.5	863	1,052.92	0.05
22	Dec-04	4.5	960	1,046.29	0.00
23	Jun-05	4.5	819	1,031.13	-0.12
24	Dec-05	4.5	1120	1,036.69	-0.08
25	Jun-06	4.5	1120	1,041.59	-0.04
26	Nov-06	4.5	1100	1,044.83	-0.01
27	Jun-07	4.5	1070	1,046.16	0.00
28	Nov-07	4.5	1090	1,048.35	0.01
29	Jun-08	4.5	1060	1,048.90	0.02
30	Nov-08	4.5	1088	1,050.68	0.03
31	Jun-09	4.5	1060	1,051.09	0.03



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-19a Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	May-98	5	3.44	2.39
2	May-01	5		
3	May-02	5		
4	Jun-03	2.5		
5	Nov-03	2.5		
6	Jun-04	2.5		
7	Dec-04	2.5		
8	Jun-05	2.5		

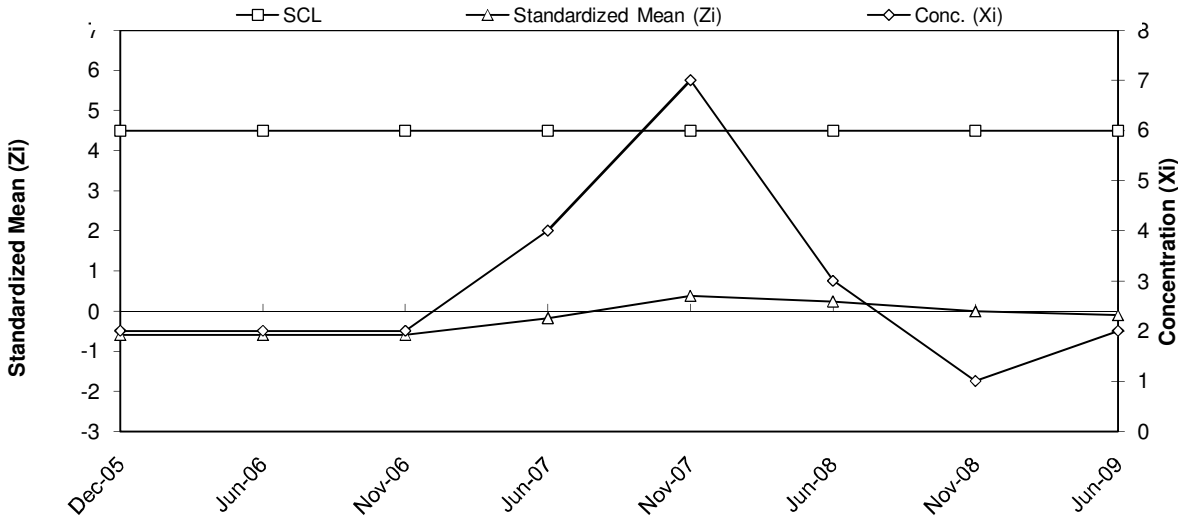
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Z_i)
9	Dec-05	4.5	10	10.00	2.74
10	Feb-06	4.5	2.5	6.25	1.18
11	Jun-06	4.5	2.5	5.00	0.65
12	Nov-06	4.5	5	5.00	0.65
13	Jun-07	4.5	6	5.20	0.74
14	Nov-07	4.5	3	4.83	0.58
15	Jun-08	4.5	2.5	4.50	0.44
16	Nov-08	4.5	2.5	4.25	0.34
17	Jun-09	4.5	2.5	4.06	0.26



**REALM - COLDWATER ROAD FACILITY
 RCRA GROUND WATER DETECTION MONITORING SYSTEM
 SHEWART CONTROL CHART
 B-19a Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	May-98	5	3.43	2.38
2	May-01	5		
3	May-02	5		
4	Jun-03	2.5		
5	Nov-03	2.5		
6	Jun-04	2.5		
7	Dec-04	2.5		
8	Jun-05	2.5		

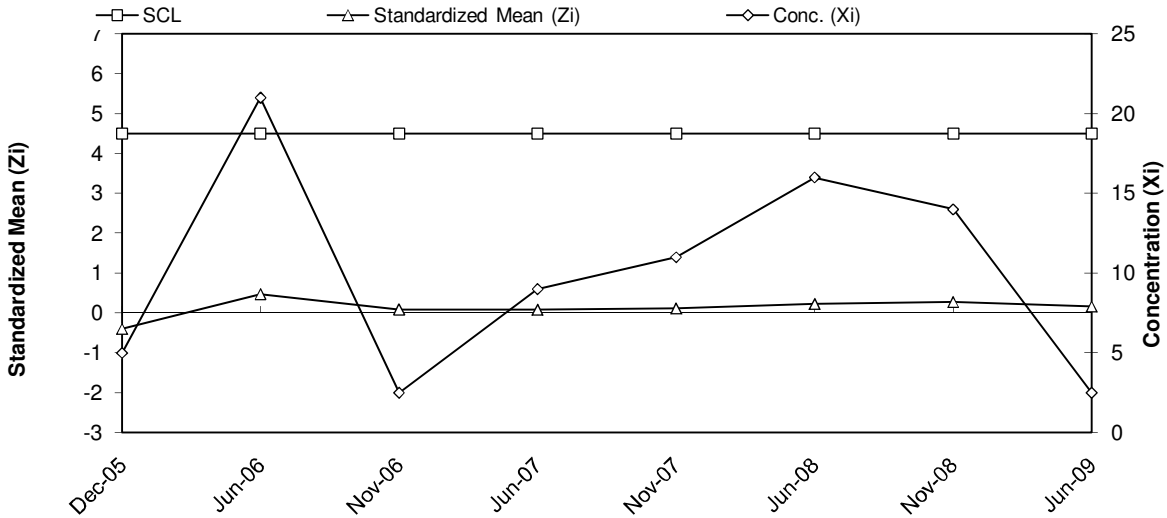
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Z_i)
9	Dec-05	4.5	2	2.00	-0.60
10	Jun-06	4.5	2	2.00	-0.60
11	Nov-06	4.5	2	2.00	-0.60
12	Jun-07	4.5	4	3.00	-0.18
13	Nov-07	4.5	7	4.33	0.38
14	Jun-08	4.5	3	4.00	0.24
15	Nov-08	4.5	1	3.40	-0.01
16	Jun-09	4.5	2	3.17	-0.11



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-19a Zn**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	May-98	30	8.69	9.24
2	May-01	5		
3	May-02	10		
4	Jun-03	2.5		
5	Nov-03	2.5		
6	Jun-04	8		
7	Dec-04	9		
8	Jun-05	2.5		

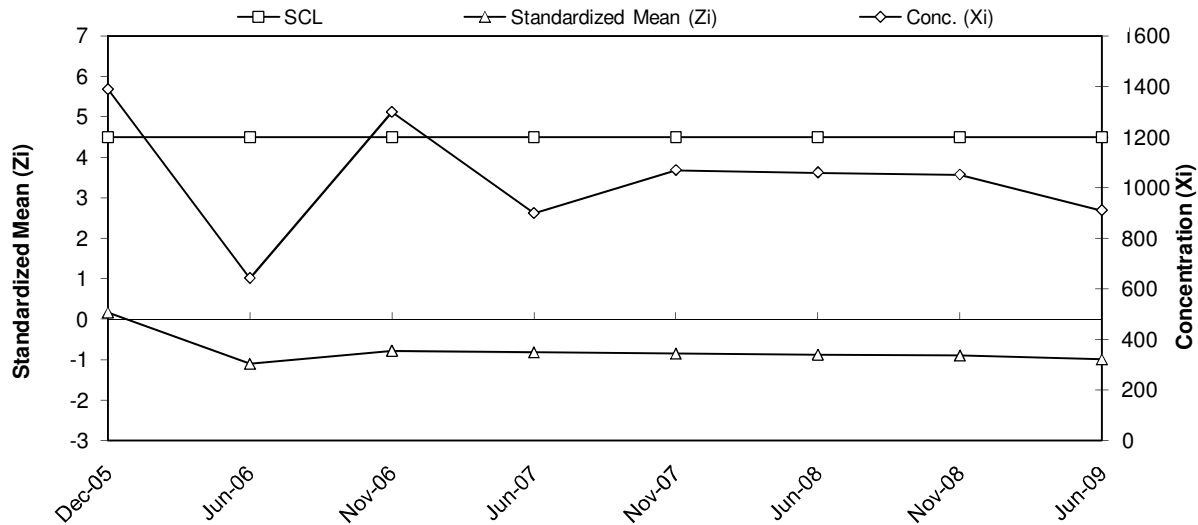
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	Dec-05	4.5	5	5.00	-0.40
10	Jun-06	4.5	21	13.00	0.47
11	Nov-06	4.5	2.5	9.50	0.09
12	Jun-07	4.5	9	9.38	0.07
13	Nov-07	4.5	11	9.70	0.11
14	Jun-08	4.5	16	10.75	0.22
15	Nov-08	4.5	14	11.21	0.27
16	Jun-09	4.5	2.5	10.13	0.16



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-19a SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	May-98	1480	1,340.63	293.72
2	May-01	1050		
3	May-02	1740		
4	Jun-03	1350		
5	Nov-03	1620		
6	Jun-04	1316		
7	Dec-04	1340		
8	Jun-05	829		

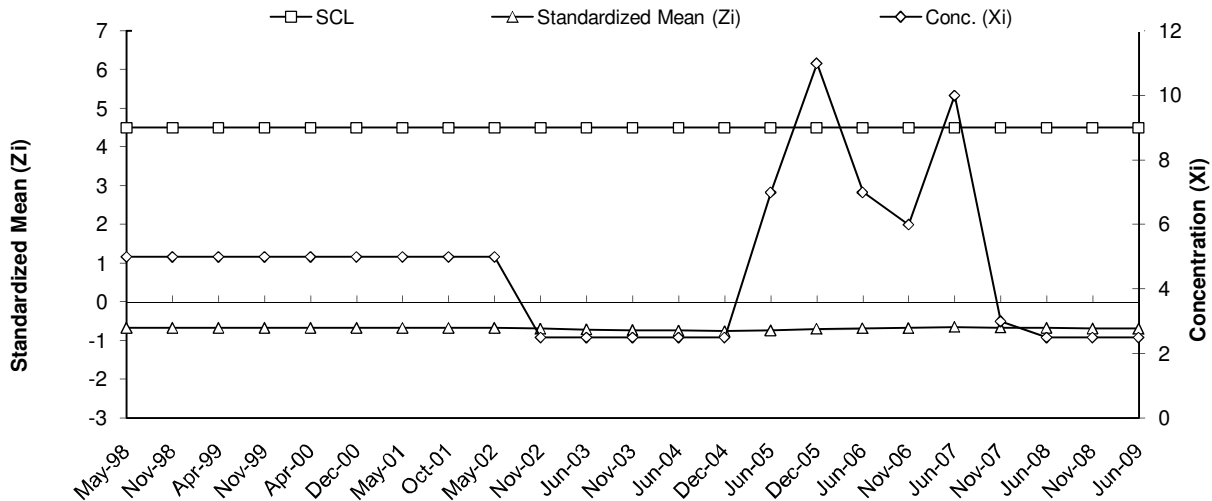
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Dec-05	4.5	1390	1,390.00	0.17
10	Jun-06	4.5	642	1,016.00	-1.11
11	Nov-06	4.5	1300	1,110.67	-0.78
12	Jun-07	4.5	899	1,099.50	-0.82
13	Nov-07	4.5	1070	1,089.67	-0.85
14	Jun-08	4.5	1060	1,082.25	-0.88
15	Nov-08	4.5	1052	1,076.20	-0.90
16	Jun-09	4.5	911	1,048.67	-0.99



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	11.51	9.80
2	Aug-95	10		
3	Feb-96	32		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

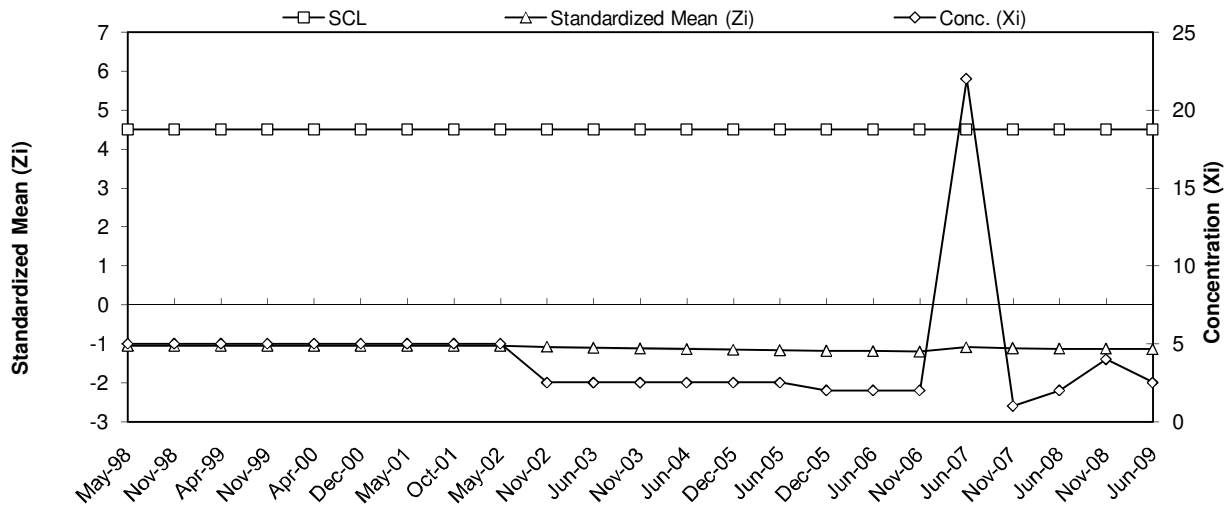
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-0.66
10	Nov-98	4.5	5	5.00	-0.66
11	Apr-99	4.5	5	5.00	-0.66
12	Nov-99	4.5	5	5.00	-0.66
13	Apr-00	4.5	5	5.00	-0.66
14	Dec-00	4.5	5	5.00	-0.66
15	May-01	4.5	5	5.00	-0.66
16	Oct-01	4.5	5	5.00	-0.66
17	May-02	4.5	5	5.00	-0.66
18	Nov-02	4.5	2.5	4.75	-0.69
19	Jun-03	4.5	2.5	4.55	-0.71
20	Nov-03	4.5	2.5	4.38	-0.73
21	Jun-04	4.5	2.5	4.23	-0.74
22	Dec-04	4.5	2.5	4.11	-0.76
23	Jun-05	4.5	7	4.30	-0.74
24	Dec-05	4.5	11	4.72	-0.69
25	Jun-06	4.5	7	4.85	-0.68
26	Nov-06	4.5	6	4.92	-0.67
27	Jun-07	4.5	10	5.18	-0.65
28	Nov-07	4.5	3	5.08	-0.66
29	Jun-08	4.5	2.5	4.95	-0.67
30	Nov-08	4.5	2.5	4.84	-0.68
31	Jun-09	4.5	2.5	4.74	-0.69



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d Cu

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	14.13	8.70
2	Aug-95	20		
3	Feb-96	28		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	20		

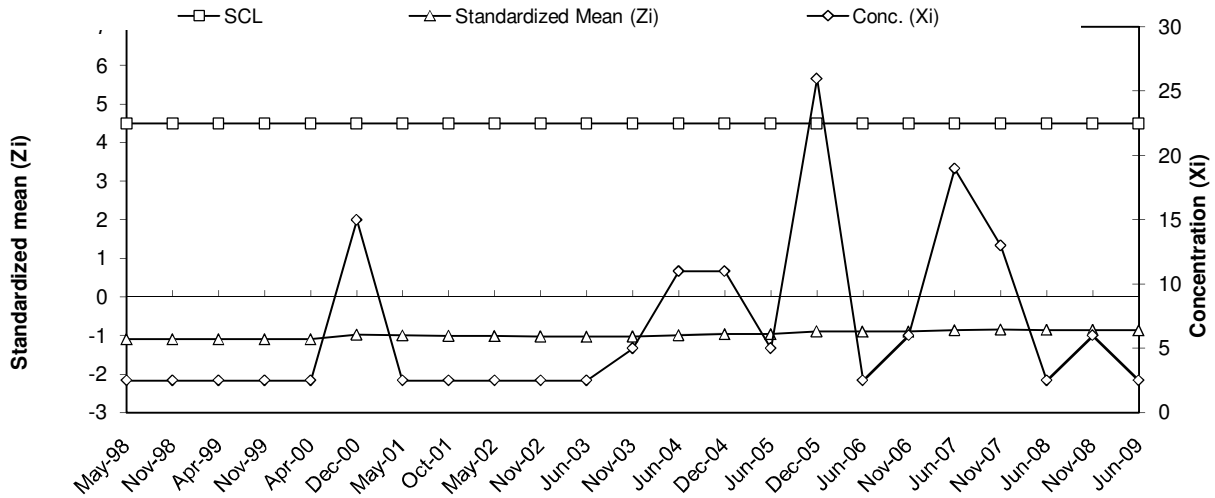
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-1.05
10	Nov-98	4.5	5	5.00	-1.05
11	Apr-99	4.5	5	5.00	-1.05
12	Nov-99	4.5	5	5.00	-1.05
13	Apr-00	4.5	5	5.00	-1.05
14	Dec-00	4.5	5	5.00	-1.05
15	May-01	4.5	5	5.00	-1.05
16	Oct-01	4.5	5	5.00	-1.05
17	May-02	4.5	5	5.00	-1.05
18	Nov-02	4.5	2.5	4.75	-1.08
19	Jun-03	4.5	2.5	4.55	-1.10
20	Nov-03	4.5	2.5	4.38	-1.12
21	Jun-04	4.5	2.5	4.23	-1.14
22	Dec-05	4.5	2.5	4.11	-1.15
23	Jun-05	4.5	2.5	4.00	-1.16
24	Dec-05	4.5	2	3.88	-1.18
25	Jun-06	4.5	2	3.76	-1.19
26	Nov-06	4.5	2	3.67	-1.20
27	Jun-07	4.5	22	4.63	-1.09
28	Nov-07	4.5	1	4.45	-1.11
29	Jun-08	4.5	2	4.33	-1.13
30	Nov-08	4.5	4	4.32	-1.13
31	Jun-09	4.5	2.5	4.24	-1.14



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	21.88	17.64
2	Aug-95	20		
3	Feb-96	54		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	15		
8	Nov-97	41		

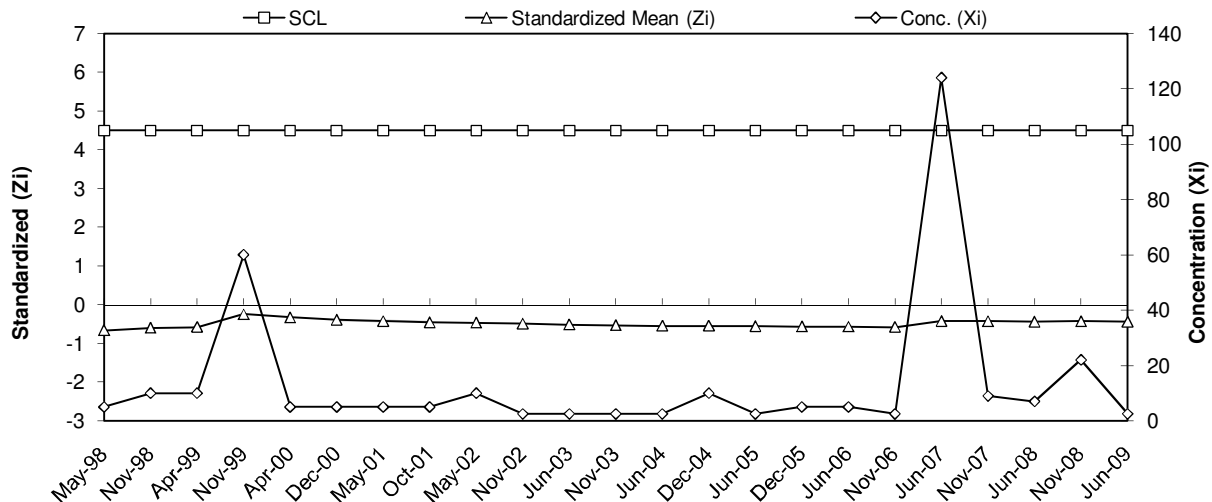
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	2.5	2.50	-1.10
10	Nov-98	4.5	2.5	2.50	-1.10
11	Apr-99	4.5	2.5	2.50	-1.10
12	Nov-99	4.5	2.5	2.50	-1.10
13	Apr-00	4.5	2.5	2.50	-1.10
14	Dec-00	4.5	15	4.58	-0.98
15	May-01	4.5	2.5	4.29	-1.00
16	Oct-01	4.5	2.5	4.06	-1.01
17	May-02	4.5	2.5	3.89	-1.02
18	Nov-02	4.5	2.5	3.75	-1.03
19	Jun-03	4.5	2.5	3.64	-1.03
20	Nov-03	4.5	5	3.75	-1.03
21	Jun-04	4.5	11	4.31	-1.00
22	Dec-04	4.5	11	4.79	-0.97
23	Jun-05	4.5	5	4.80	-0.97
24	Dec-05	4.5	26	6.13	-0.89
25	Jun-06	4.5	2.5	5.91	-0.91
26	Nov-06	4.5	6	5.92	-0.90
27	Jun-07	4.5	19	6.61	-0.87
28	Nov-07	4.5	13	6.93	-0.85
29	Jun-08	4.5	2.5	6.71	-0.86
30	Nov-08	4.5	6	6.68	-0.86
31	Jun-09	4.5	2.5	6.50	-0.87



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	30.66	38.93
2	Aug-95	10		
3	Feb-96	120		
4	Jun-96	10		
5	Aug-96	40		
6	Nov-96	40		
7	May-97	10		
8	Nov-97	5		

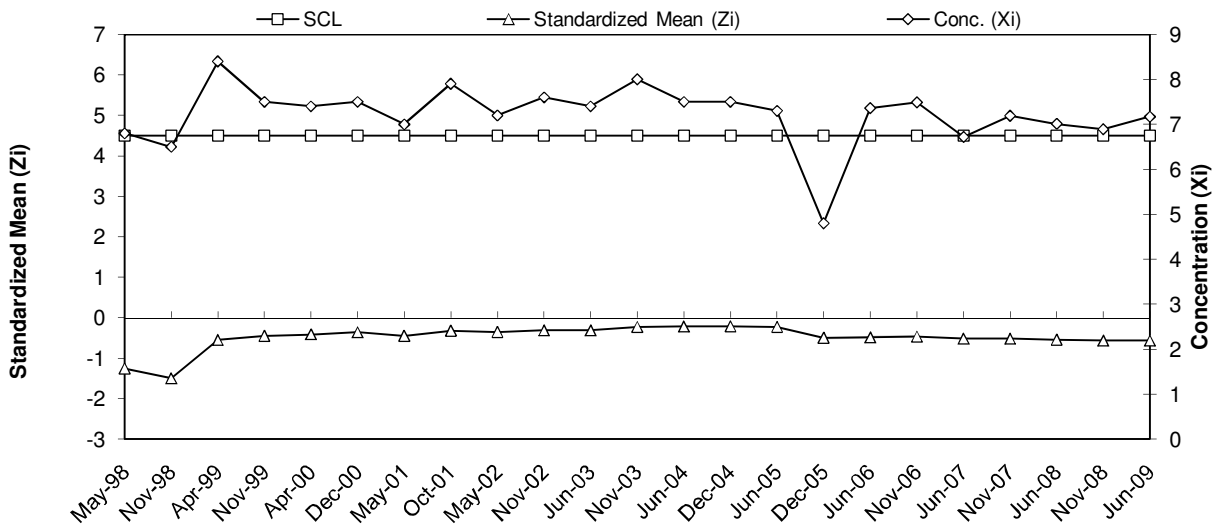
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-0.66
10	Nov-98	4.5	10	7.50	-0.59
11	Apr-99	4.5	10	8.33	-0.57
12	Nov-99	4.5	60	21.25	-0.24
13	Apr-00	4.5	5	18.00	-0.33
14	Dec-00	4.5	5	15.83	-0.38
15	May-01	4.5	5	14.29	-0.42
16	Oct-01	4.5	5	13.13	-0.45
17	May-02	4.5	10	12.78	-0.46
18	Nov-02	4.5	2.5	11.75	-0.49
19	Jun-03	4.5	2.5	10.91	-0.51
20	Nov-03	4.5	2.5	10.21	-0.53
21	Jun-04	4.5	2.5	9.62	-0.54
22	Dec-04	4.5	10	9.64	-0.54
23	Jun-05	4.5	2.5	9.17	-0.55
24	Dec-05	4.5	5	8.91	-0.56
25	Jun-06	4.5	5	8.68	-0.56
26	Nov-06	4.5	2.5	8.33	-0.57
27	Jun-07	4.5	124	14.42	-0.42
28	Nov-07	4.5	9	14.15	-0.42
29	Jun-08	4.5	7	13.81	-0.43
30	Nov-08	4.5	22	14.18	-0.42
31	Jun-09	4.5	2.5	13.67	-0.44



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	8.3	7.58	0.62
2	Aug-95	8.1		
3	Feb-96	7.1		
4	Jun-96	7.9		
5	Aug-96	8.0		
6	Nov-96	7.7		
7	May-97	6.8		
8	Nov-97	6.7		

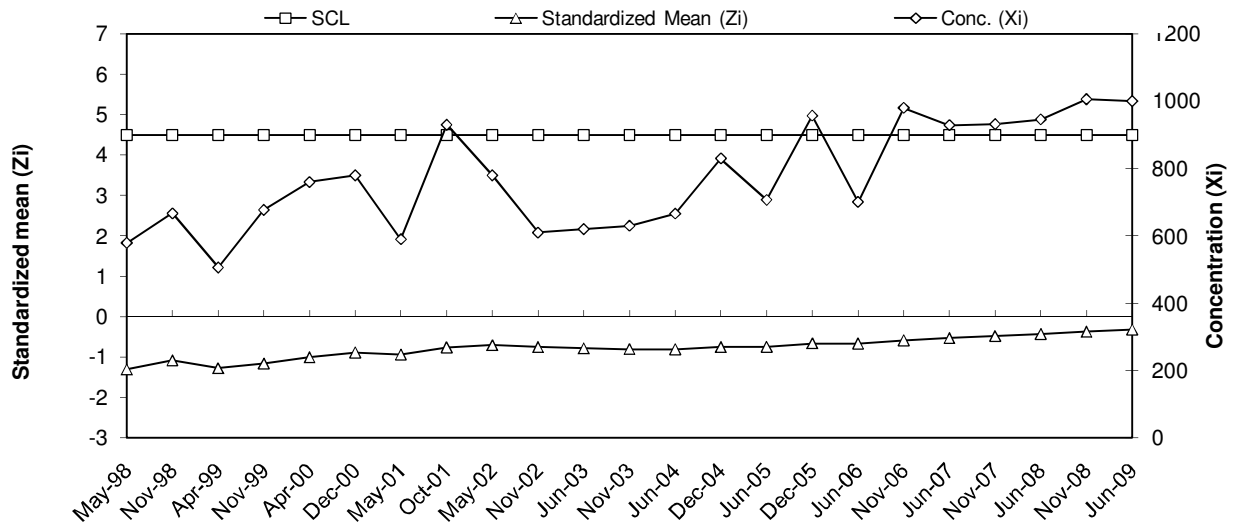
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	6.8	6.80	-1.25
10	Nov-98	4.5	6.5	6.65	-1.49
11	Apr-99	4.5	8.4	7.23	-0.55
12	Nov-99	4.5	7.5	7.30	-0.44
13	Apr-00	4.5	7.4	7.32	-0.41
14	Dec-00	4.5	7.5	7.35	-0.36
15	May-01	4.5	7.0	7.30	-0.44
16	Oct-01	4.5	7.9	7.38	-0.32
17	May-02	4.5	7.2	7.36	-0.35
18	Nov-02	4.5	7.6	7.38	-0.31
19	Jun-03	4.5	7.4	7.38	-0.31
20	Nov-03	4.5	8.0	7.43	-0.23
21	Jun-04	4.5	7.5	7.44	-0.22
22	Dec-04	4.5	7.5	7.44	-0.21
23	Jun-05	4.5	7.3	7.43	-0.23
24	Dec-05	4.5	4.8	7.27	-0.49
25	Jun-06	4.5	7.4	7.27	-0.48
26	Nov-06	4.5	7.5	7.29	-0.47
27	Jun-07	4.5	6.7	7.26	-0.51
28	Nov-07	4.5	7.2	7.25	-0.52
29	Jun-08	4.5	7.0	7.24	-0.54
30	Nov-08	4.5	6.9	7.23	-0.56
31	Jun-09	4.5	7.2	7.22	-0.57



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-20d SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	771	835.75	196.61
2	Aug-95	1204		
3	Feb-96	801		
4	Jun-96	745		
5	Aug-96	750		
6	Nov-96	1075		
7	May-97	640		
8	Nov-97	700		

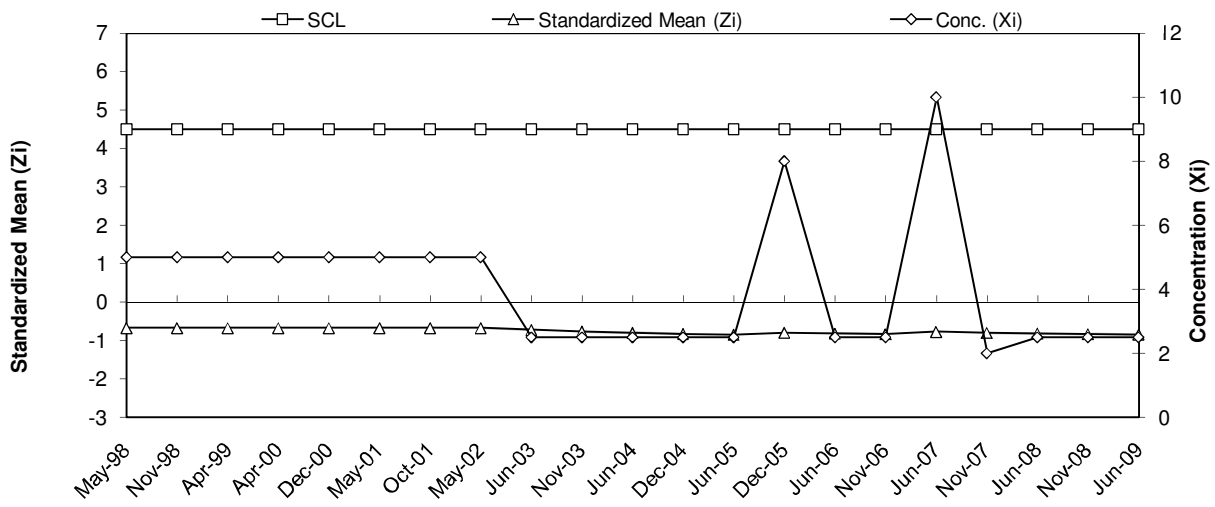
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	579	579.00	-1.31
10	Nov-98	4.5	667	623.00	-1.08
11	Apr-99	4.5	506	584.00	-1.28
12	Nov-99	4.5	677	607.25	-1.16
13	Apr-00	4.5	760	637.80	-1.01
14	Dec-00	4.5	780	661.50	-0.89
15	May-01	4.5	590	651.29	-0.94
16	Oct-01	4.5	930	686.13	-0.76
17	May-02	4.5	780	696.56	-0.71
18	Nov-02	4.5	610	687.90	-0.75
19	Jun-03	4.5	620	681.73	-0.78
20	Nov-03	4.5	630	677.42	-0.81
21	Jun-04	4.5	666	676.54	-0.81
22	Dec-04	4.5	830	687.50	-0.75
23	Jun-05	4.5	707	688.80	-0.75
24	Dec-05	4.5	957	705.56	-0.66
25	Jun-06	4.5	701	705.28	-0.66
26	Nov-06	4.5	980	720.54	-0.59
27	Jun-07	4.5	929	731.51	-0.53
28	Nov-07	4.5	932	741.54	-0.48
29	Jun-08	4.5	946	751.27	-0.43
30	Nov-08	4.5	1006	762.85	-0.37
31	Jun-09	4.5	1000	773.16	-0.32



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.74	5.57
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

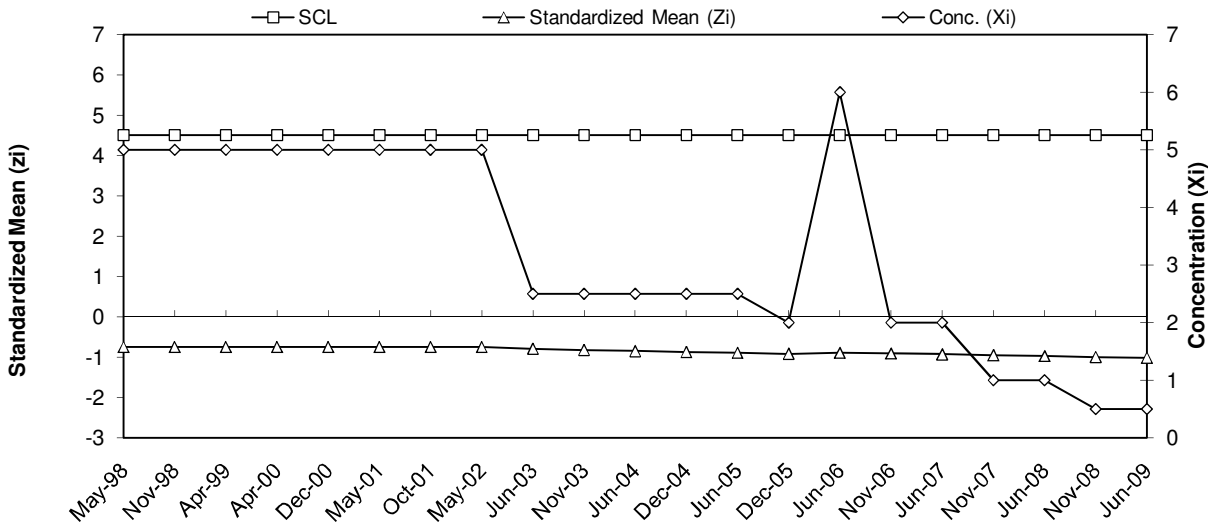
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-0.67
10	Nov-98	4.5	5	5.00	-0.67
11	Apr-99	4.5	5	5.00	-0.67
12	Apr-00	4.5	5	5.00	-0.67
13	Dec-00	4.5	5	5.00	-0.67
14	May-01	4.5	5	5.00	-0.67
15	Oct-01	4.5	5	5.00	-0.67
16	May-02	4.5	5	5.00	-0.67
18	Jun-03	4.5	2.5	4.72	-0.72
19	Nov-03	4.5	2.5	4.50	-0.76
20	Jun-04	4.5	2.5	4.32	-0.79
21	Dec-04	4.5	2.5	4.17	-0.82
22	Jun-05	4.5	2.5	4.04	-0.84
23	Dec-05	4.5	8	4.32	-0.79
24	Jun-06	4.5	2.5	4.20	-0.82
25	Nov-06	4.5	2.5	4.09	-0.83
26	Jun-07	4.5	10	4.44	-0.77
27	Nov-07	4.5	2	4.31	-0.80
28	Jun-08	4.5	2.5	4.21	-0.81
29	Nov-08	4.5	2.5	4.13	-0.83
30	Jun-09	4.5	2.5	4.05	-0.84



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	10.13	6.83
2	Aug-95	21		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

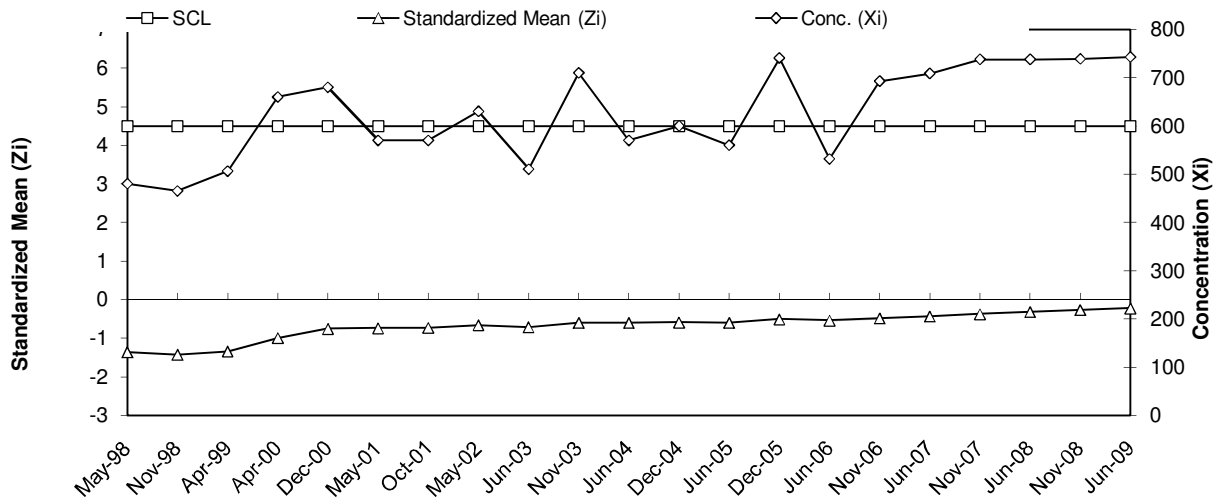
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-0.75
10	Nov-98	4.5	5	5.00	-0.75
11	Apr-99	4.5	5	5.00	-0.75
12	Apr-00	4.5	5	5.00	-0.75
13	Dec-00	4.5	5	5.00	-0.75
14	May-01	4.5	5	5.00	-0.75
15	Oct-01	4.5	5	5.00	-0.75
16	May-02	4.5	5	5.00	-0.75
18	Jun-03	4.5	2.5	4.72	-0.79
19	Nov-03	4.5	2.5	4.50	-0.82
20	Jun-04	4.5	2.5	4.32	-0.85
21	Dec-04	4.5	2.5	4.17	-0.87
22	Jun-05	4.5	2.5	4.04	-0.89
23	Dec-05	4.5	2	3.89	-0.91
24	Jun-06	4.5	6	4.03	-0.89
25	Nov-06	4.5	2	3.91	-0.91
26	Jun-07	4.5	2	3.79	-0.93
27	Nov-07	4.5	1	3.64	-0.95
28	Jun-08	4.5	1	3.50	-0.97
29	Nov-08	4.5	0.5	3.35	-0.99
30	Jun-09	4.5	0.5	3.21	-1.01



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-21d SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	870	654.13	126.68
2	Aug-95	684		
3	Feb-96	646		
4	Jun-96	577		
5	Aug-96	576		
6	Nov-96	810		
7	May-97	530		
8	Nov-97	540		

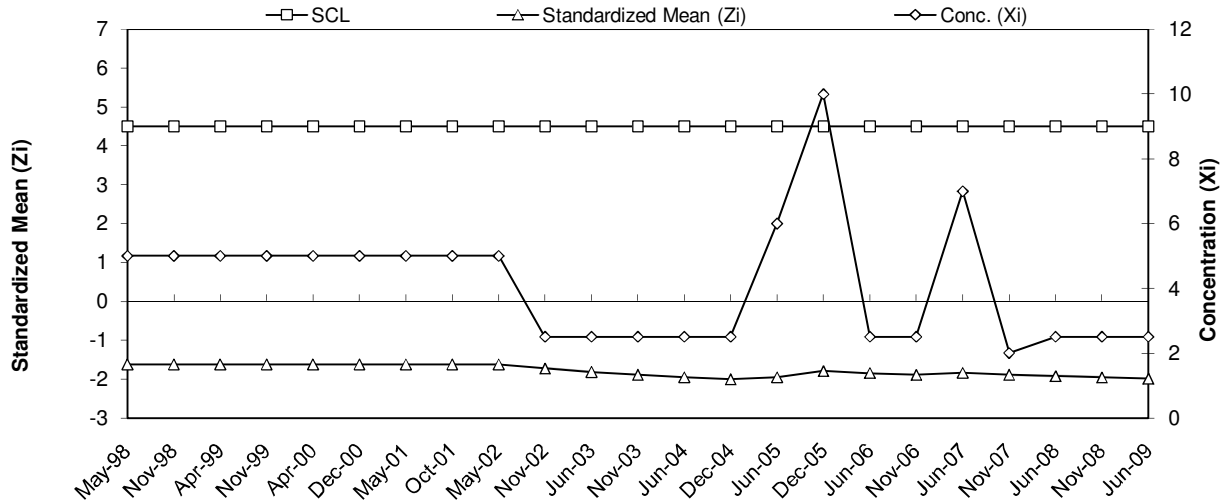
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	480	480.00	-1.37
10	Nov-98	4.5	465	472.50	-1.43
11	Apr-99	4.5	506	483.67	-1.35
12	Apr-00	4.5	660	527.75	-1.00
13	Dec-00	4.5	680	558.20	-0.76
14	May-01	4.5	570	560.17	-0.74
15	Oct-01	4.5	570	561.57	-0.73
16	May-02	4.5	630	570.13	-0.66
18	Jun-03	4.5	510	563.44	-0.72
19	Nov-03	4.5	710	578.10	-0.60
20	Jun-04	4.5	570	577.36	-0.61
21	Dec-04	4.5	600	579.25	-0.59
22	Jun-05	4.5	560	577.77	-0.60
23	Dec-05	4.5	741	589.43	-0.51
24	Jun-06	4.5	531.3	585.55	-0.54
25	Nov-06	4.5	693	592.27	-0.49
26	Jun-07	4.5	709	599.14	-0.43
27	Nov-07	4.5	738	606.85	-0.37
28	Jun-08	4.5	738	613.75	-0.32
29	Nov-08	4.5	739	620.02	-0.27
30	Jun-09	4.5	743	625.87	-0.22



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.75	2.31
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

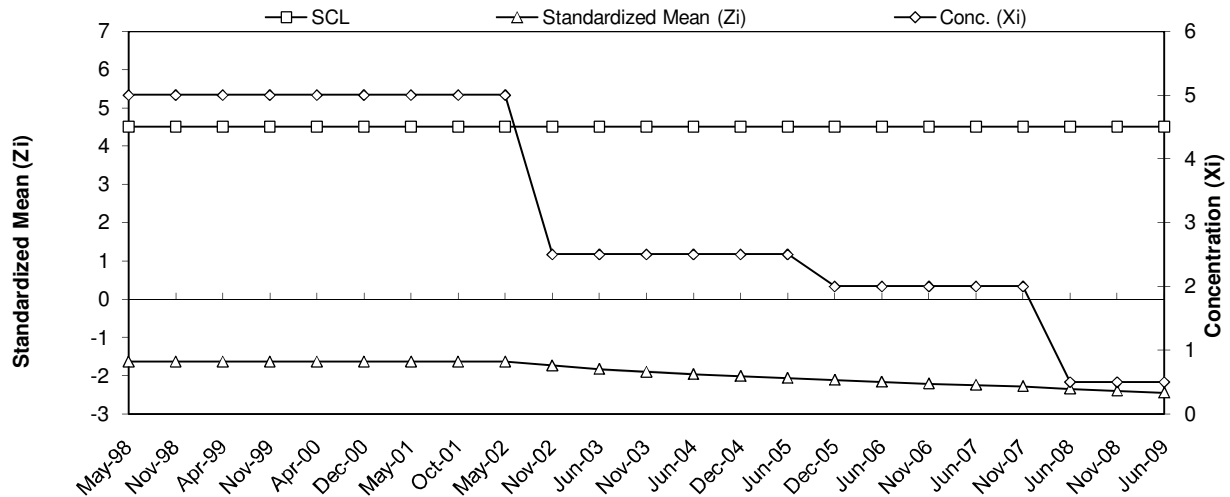
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-1.62
10	Nov-98	4.5	5	5.00	-1.62
11	Apr-99	4.5	5	5.00	-1.62
12	Nov-99	4.5	5	5.00	-1.62
13	Apr-00	4.5	5	5.00	-1.62
14	Dec-00	4.5	5	5.00	-1.62
15	May-01	4.5	5	5.00	-1.62
16	Oct-01	4.5	5	5.00	-1.62
17	May-02	4.5	5	5.00	-1.62
18	Nov-02	4.5	2.5	4.75	-1.73
19	Jun-03	4.5	2.5	4.55	-1.82
20	Nov-03	4.5	2.5	4.38	-1.89
21	Jun-04	4.5	2.5	4.23	-1.95
22	Dec-04	4.5	2.5	4.11	-2.01
23	Jun-05	4.5	6	4.23	-1.95
24	Dec-05	4.5	10	4.59	-1.80
25	Jun-06	4.5	2.5	4.47	-1.85
26	Nov-06	4.5	2.5	4.36	-1.90
27	Jun-07	4.5	7	4.50	-1.84
28	Nov-07	4.5	2	4.38	-1.89
29	Jun-08	4.5	2.5	4.29	-1.93
30	Nov-08	4.5	2.5	4.20	-1.96
31	Jun-09	4.5	2.5	4.13	-2.00



**REALM - COLDWATER ROAD FACILITY
 RCRA GROUND WATER DETECTION MONITORING SYSTEM
 SHEWART CONTROL CHART
 B-22D Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.75	2.31
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

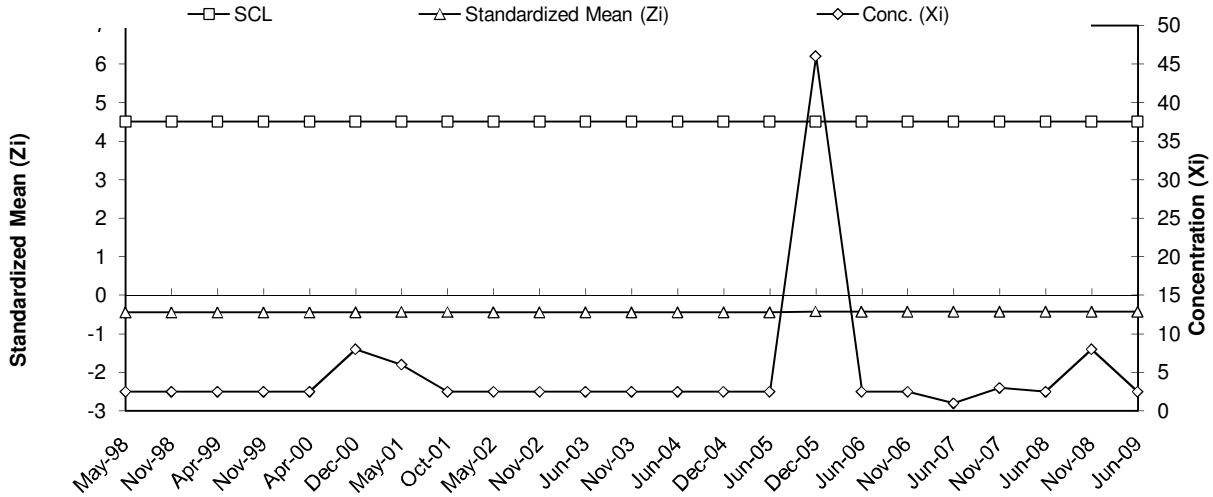
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-1.62
10	Nov-98	4.5	5	5.00	-1.62
11	Apr-99	4.5	5	5.00	-1.62
12	Nov-99	4.5	5	5.00	-1.62
13	Apr-00	4.5	5	5.00	-1.62
14	Dec-00	4.5	5	5.00	-1.62
15	May-01	4.5	5	5.00	-1.62
16	Oct-01	4.5	5	5.00	-1.62
17	May-02	4.5	5	5.00	-1.62
18	Nov-02	4.5	2.5	4.75	-1.73
19	Jun-03	4.5	2.5	4.55	-1.82
20	Nov-03	4.5	2.5	4.38	-1.89
21	Jun-04	4.5	2.5	4.23	-1.95
22	Dec-04	4.5	2.5	4.11	-2.01
23	Jun-05	4.5	2.5	4.00	-2.05
24	Dec-05	4.5	2	3.88	-2.11
25	Jun-06	4.5	2	3.76	-2.15
26	Nov-06	4.5	2	3.67	-2.20
27	Jun-07	4.5	2	3.58	-2.23
28	Nov-07	4.5	2	3.50	-2.27
29	Jun-08	4.5	0.5	3.36	-2.33
30	Nov-08	4.5	0.5	3.23	-2.39
31	Jun-09	4.5	0.5	3.11	-2.44



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D Ni**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	370	58.94	125.96
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	2.5		
8	Nov-97	29		

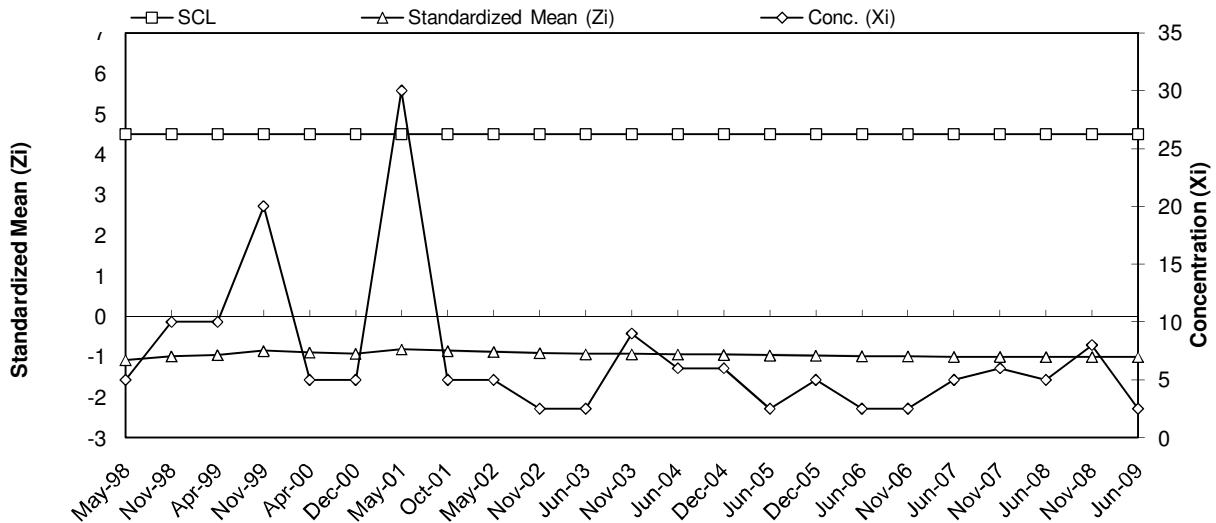
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	2.5	2.50	-0.45
10	Nov-98	4.5	2.5	2.50	-0.45
11	Apr-99	4.5	2.5	2.50	-0.45
12	Nov-99	4.5	2.5	2.50	-0.45
13	Apr-00	4.5	2.5	2.50	-0.45
14	Dec-00	4.5	8	3.42	-0.44
15	May-01	4.5	6	3.79	-0.44
16	Oct-01	4.5	2.5	3.63	-0.44
17	May-02	4.5	2.5	3.50	-0.44
18	Nov-02	4.5	2.5	3.40	-0.44
19	Jun-03	4.5	2.5	3.32	-0.44
20	Nov-03	4.5	2.5	3.25	-0.44
21	Jun-04	4.5	2.5	3.19	-0.44
22	Dec-04	4.5	2.5	3.14	-0.44
23	Jun-05	4.5	2.5	3.10	-0.44
24	Dec-05	4.5	46	5.78	-0.42
25	Jun-06	4.5	2.5	5.59	-0.42
26	Nov-06	4.5	2.5	5.42	-0.42
27	Jun-07	4.5	1	5.18	-0.43
28	Nov-07	4.5	3	5.08	-0.43
29	Jun-08	4.5	2.5	4.95	-0.43
30	Nov-08	4.5	8	5.09	-0.43
31	Jun-09	4.5	2.5	4.98	-0.43



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	34.00	26.69
2	Aug-95	47		
3	Feb-96	80		
4	Jun-96	20		
5	Aug-96	50		
6	Nov-96	50		
7	May-97	5		
8	Nov-97	10		

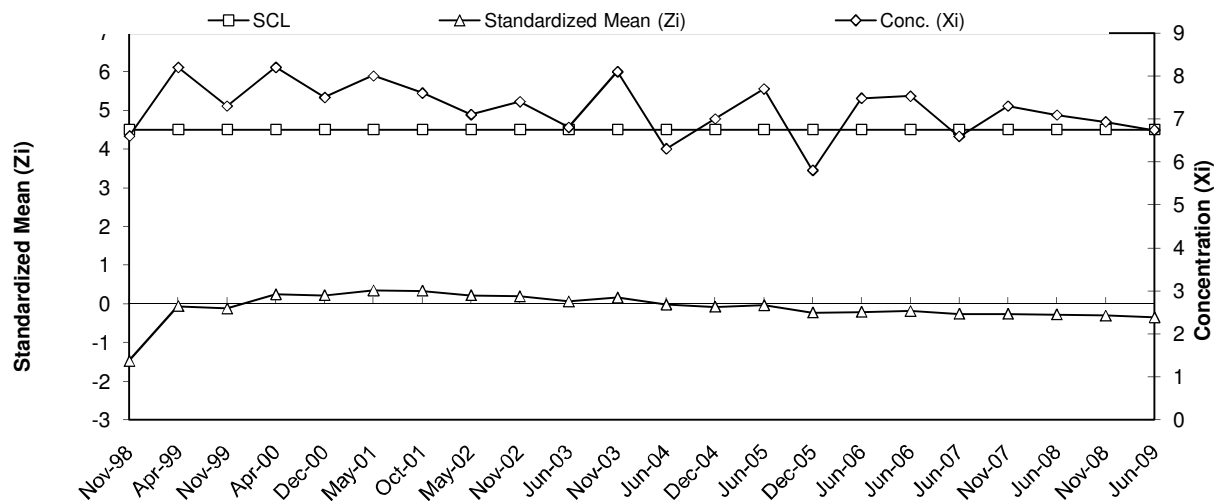
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-1.09
10	Nov-98	4.5	10	7.50	-0.99
11	Apr-99	4.5	10	8.33	-0.96
12	Nov-99	4.5	20	11.25	-0.85
13	Apr-00	4.5	5	10.00	-0.90
14	Dec-00	4.5	5	9.17	-0.93
15	May-01	4.5	30	12.14	-0.82
16	Oct-01	4.5	5	11.25	-0.85
17	May-02	4.5	5	10.56	-0.88
18	Nov-02	4.5	2.5	9.75	-0.91
19	Jun-03	4.5	2.5	9.09	-0.93
20	Nov-03	4.5	9	9.08	-0.93
21	Jun-04	4.5	6	8.85	-0.94
22	Dec-04	4.5	6	8.64	-0.95
23	Jun-05	4.5	2.5	8.23	-0.97
24	Dec-05	4.5	5	8.03	-0.97
25	Jun-06	4.5	2.5	7.71	-0.99
26	Nov-06	4.5	2.5	7.42	-1.00
27	Jun-07	4.5	5	7.29	-1.00
28	Nov-07	4.5	6	7.23	-1.00
29	Jun-08	4.5	5	7.12	-1.01
30	Nov-08	4.5	8	7.16	-1.01
31	Jun-09	4.5	2.5	6.96	-1.01



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	7.7	7.44	0.57
2	Aug-95	8.3		
3	Jun-96	7.5		
4	Aug-96	8.1		
5	Nov-96	7.2		
6	May-97	6.7		
7	Nov-97	6.9		
8	May-98	7.1		

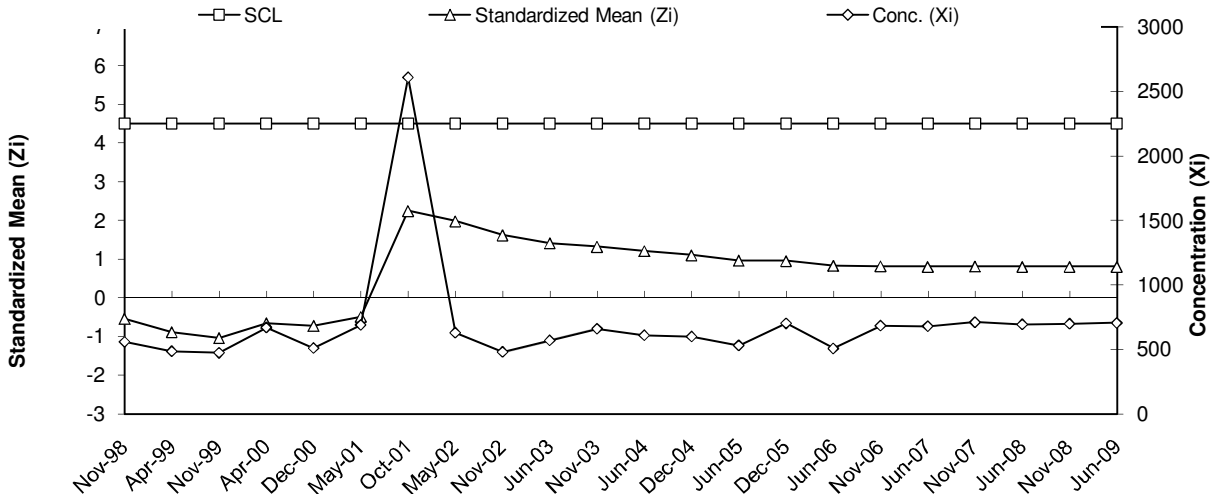
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-98	4.5	6.6	6.60	-1.47
10	Apr-99	4.5	8.2	7.40	-0.07
11	Nov-99	4.5	7.3	7.37	-0.12
12	Apr-00	4.5	8.2	7.58	0.24
13	Dec-00	4.5	7.5	7.56	0.22
14	May-01	4.5	8	7.63	0.34
15	Oct-01	4.5	7.6	7.63	0.34
16	May-02	4.5	7.1	7.56	0.22
17	Nov-02	4.5	7.4	7.54	0.19
18	Jun-03	4.5	6.8	7.47	0.06
19	Nov-03	4.5	8.1	7.53	0.16
20	Jun-04	4.5	6.3	7.43	-0.02
21	Dec-04	4.5	7	7.39	-0.08
22	Jun-05	4.5	7.7	7.41	-0.04
23	Dec-05	4.5	5.8	7.31	-0.23
24	Jun-06	4.5	7.5	7.32	-0.21
25	Jun-06	4.5	7.5	7.33	-0.19
26	Jun-07	4.5	6.6	7.29	-0.26
27	Nov-07	4.5	7.3	7.29	-0.26
28	Jun-08	4.5	7.1	7.28	-0.28
29	Nov-08	4.5	6.9	7.26	-0.31
30	Jun-09	4.5	6.7	7.24	-0.35



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-22D SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	573	617.25	106.65
2	Aug-95	739		
3	Jun-96	600		
4	Aug-96	608		
5	Nov-96	817		
6	May-97	550		
7	Nov-97	550		
8	May-98	501		

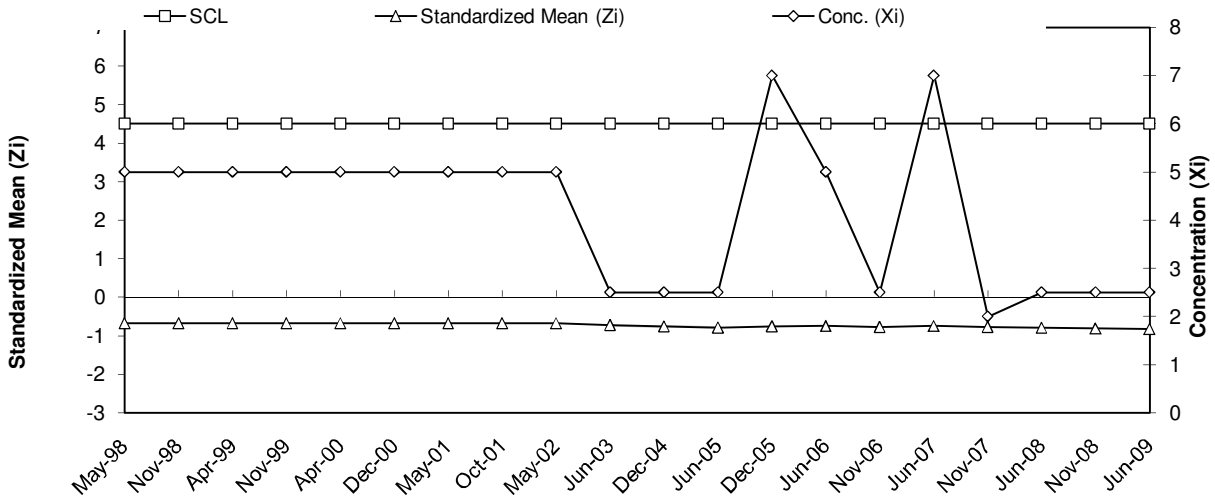
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-98	4.5	559	559.00	-0.55
10	Apr-99	4.5	485	522.00	-0.89
11	Nov-99	4.5	474	506.00	-1.04
12	Apr-00	4.5	670	547.00	-0.66
13	Dec-00	4.5	510	539.60	-0.73
14	May-01	4.5	690	564.67	-0.49
15	Oct-01	4.5	2610	856.86	2.25
16	May-02	4.5	630	828.50	1.98
17	Nov-02	4.5	480	789.78	1.62
18	Jun-03	4.5	570	767.80	1.41
19	Nov-03	4.5	660	758.00	1.32
20	Jun-04	4.5	610	745.67	1.20
21	Dec-04	4.5	600	734.46	1.10
22	Jun-05	4.5	531	719.93	0.96
23	Dec-05	4.5	702	718.73	0.95
24	Jun-06	4.5	506.7	705.48	0.83
25	Nov-06	4.5	684	704.22	0.82
26	Jun-07	4.5	680	702.87	0.80
27	Nov-07	4.5	710	703.25	0.81
28	Jun-08	4.5	694	702.79	0.80
29	Nov-08	4.5	699	702.60	0.80
30	Jun-09	4.5	705	702.71	0.80



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.79	5.60
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

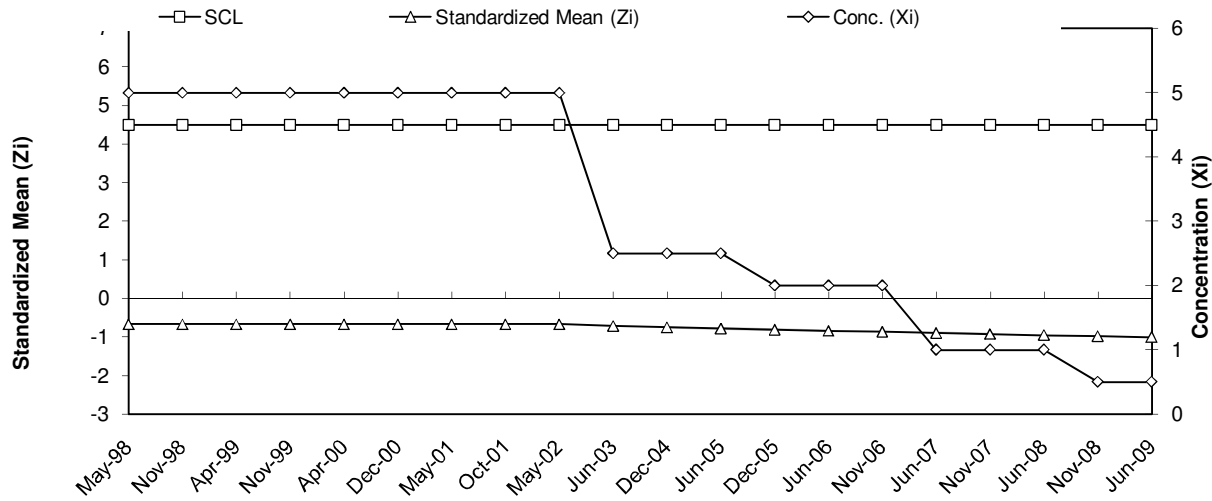
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Z_i)
9	May-98	4.5	5	5.00	-0.68
10	Nov-98	4.5	5	5.00	-0.68
11	Apr-99	4.5	5	5.00	-0.68
12	Nov-99	4.5	5	5.00	-0.68
13	Apr-00	4.5	5	5.00	-0.68
14	Dec-00	4.5	5	5.00	-0.68
15	May-01	4.5	5	5.00	-0.68
16	Oct-01	4.5	5	5.00	-0.68
17	May-02	4.5	5	5.00	-0.68
18	Jun-03	4.5	2.5	4.75	-0.72
19	Dec-04	4.5	2.5	4.55	-0.76
20	Jun-05	4.5	2.5	4.38	-0.79
21	Dec-05	4.5	7.0	4.58	-0.75
22	Jun-06	4.5	5.0	4.61	-0.75
23	Nov-06	4.5	2.5	4.47	-0.77
24	Jun-07	4.5	7	4.63	-0.74
25	Nov-07	4.5	2	4.47	-0.77
26	Jun-08	4.5	2.5	4.36	-0.79
27	Nov-08	4.5	2.5	4.26	-0.81
28	Jun-09	4.5	2.5	4.18	-0.82



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	8.75	5.59
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	5		
8	Nov-97	5		

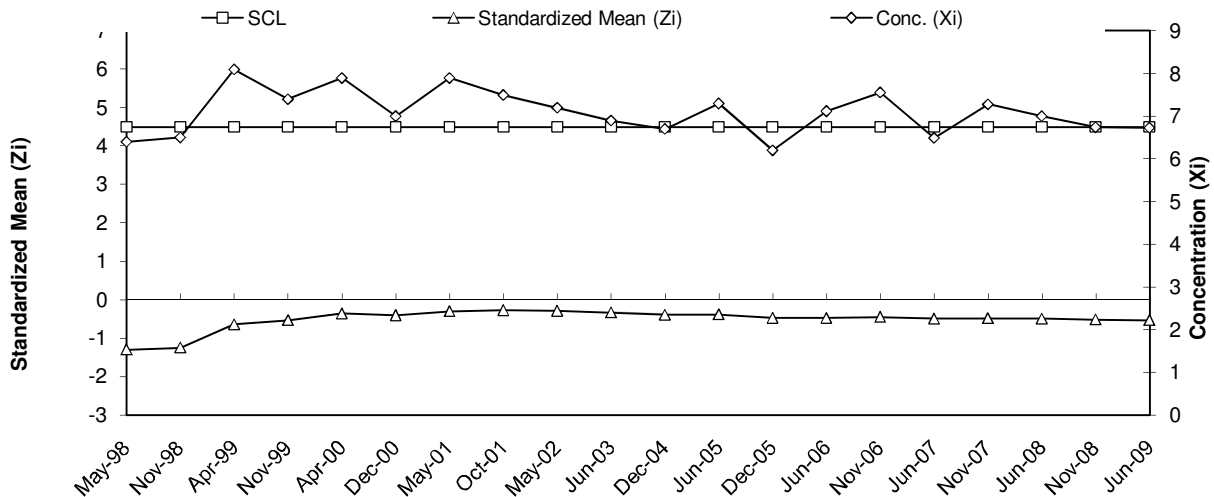
Ti	Date	SCL	Conc. (Xi)	Mean (Xi)	Standardized Mean (Zi)
9	May-98	4.5	5	5.00	-0.67
10	Nov-98	4.5	5	5.00	-0.67
11	Apr-99	4.5	5	5.00	-0.67
12	Nov-99	4.5	5	5.00	-0.67
13	Apr-00	4.5	5	5.00	-0.67
14	Dec-00	4.5	5	5.00	-0.67
15	May-01	4.5	5	5.00	-0.67
16	Oct-01	4.5	5	5.00	-0.67
17	May-02	4.5	5	5.00	-0.67
18	Jun-03	4.5	2.5	4.75	-0.72
19	Dec-04	4.5	2.5	4.55	-0.75
20	Jun-05	4.5	2.5	4.38	-0.78
21	Dec-05	4.5	2.0	4.19	-0.82
22	Jun-06	4.5	2.0	4.04	-0.84
23	Nov-06	4.5	2.0	3.90	-0.87
24	Jun-07	4.5	1	3.72	-0.90
25	Nov-07	4.5	1	3.56	-0.93
26	Jun-08	4.5	1	3.42	-0.95
27	Nov-08	4.5	0.5	3.26	-0.98
28	Jun-09	4.5	0.5	3.13	-1.01



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-23d pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	7.3	7.59	0.91
2	Aug-95	8.2		
3	Feb-96	7.5		
4	Jun-96	8.3		
5	Aug-96	8.9		
6	Nov-96	7.7		
7	May-97	6.8		
8	Nov-97	6.0		

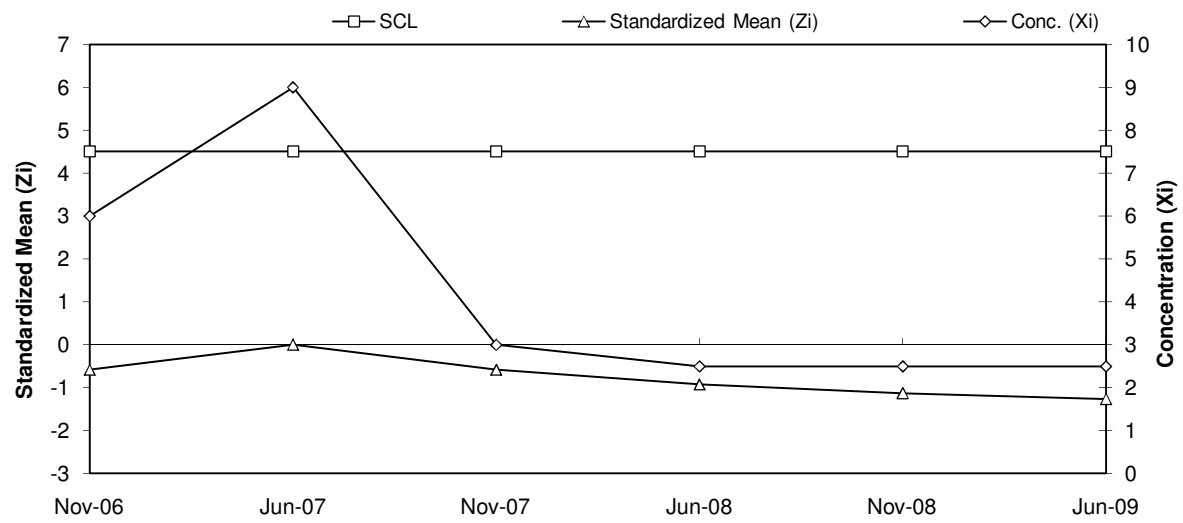
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	May-98	4.5	6.4	6.40	-1.30
10	Nov-98	4.5	6.5	6.45	-1.24
11	Apr-99	4.5	8.1	7.00	-0.64
12	Nov-99	4.5	7.4	7.10	-0.53
13	Apr-00	4.5	7.9	7.26	-0.36
14	Dec-00	4.5	7.0	7.22	-0.41
15	May-01	4.5	7.9	7.31	-0.30
16	Oct-01	4.5	7.5	7.34	-0.27
17	May-02	4.5	7.2	7.32	-0.29
18	Jun-03	4.5	6.9	7.28	-0.34
19	Dec-04	4.5	6.7	7.23	-0.39
20	Jun-05	4.5	7.3	7.23	-0.39
21	Dec-05	4.5	6.2	7.15	-0.47
22	Jun-06	4.5	7.1	7.15	-0.48
23	Nov-06	4.5	7.6	7.18	-0.45
24	Jun-07	4.5	6.5	7.14	-0.49
25	Nov-07	4.5	7.3	7.14	-0.49
26	Jun-08	4.5	7.0	7.14	-0.49
27	Nov-08	4.5	6.7	7.12	-0.52
28	Jun-09	4.5	6.7	7.10	-0.54



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 Cr**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Aug-96	10	7.50	2.56
2	Nov-96	10		
3	May-97	5		
4	May-98	5		
5	Nov-03	5		
6	Jun-05	8		
7	Dec-05	11		
8	Jun-06	6		

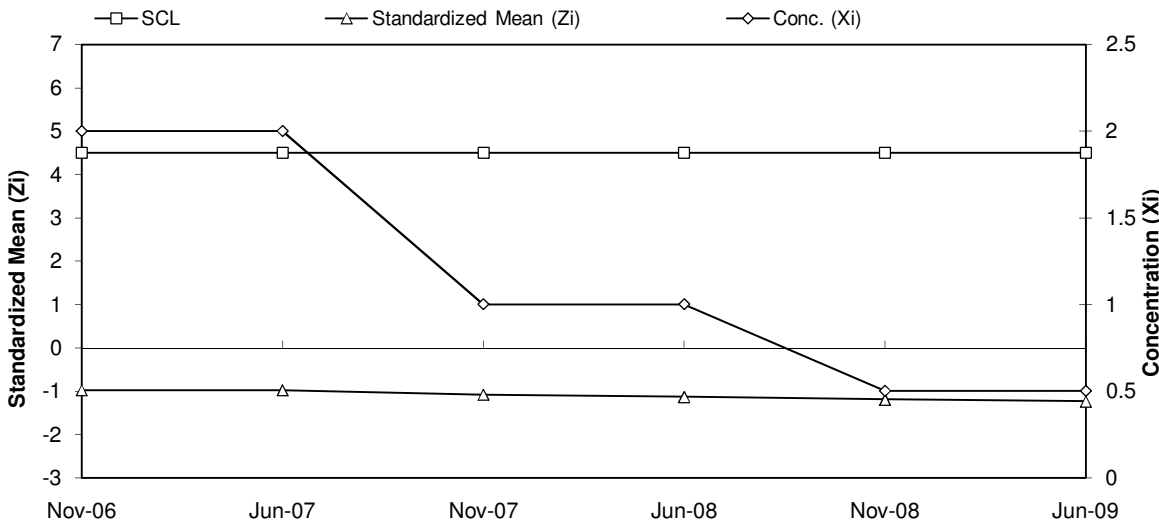
Ti	Date	SCL	Conc. (Xi)	Mean (<u>Xi</u>)	Standardized Mean (Zi)
9	Nov-06	4.5	6	6.00	-0.59
10	Jun-07	4.5	9	7.50	0.00
11	Nov-07	4.5	3	6.00	-0.59
12	Jun-08	4.5	2.5	5.13	-0.93
13	Nov-08	4.5	2.5	4.60	-1.13
14	Jun-09	4.5	2.5	4.25	-1.27



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Aug-96	10	5.19	3.25
2	Nov-96	10		
3	May-97	5		
4	May-98	5		
5	Nov-03	5		
6	Jun-05	2.5		
7	Dec-05	2		
8	Jun-06	2		

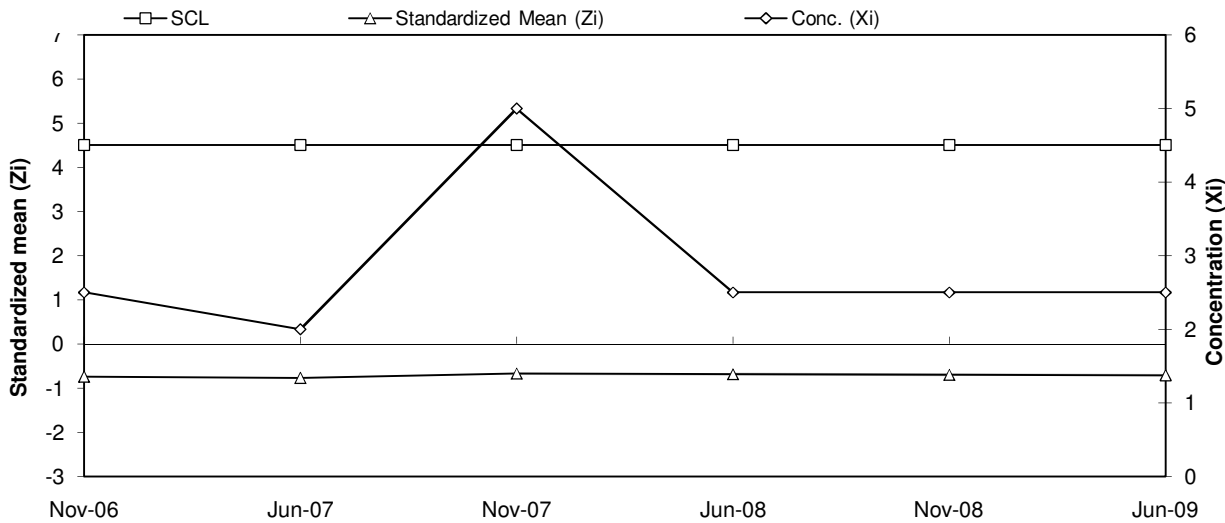
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-06	4.5	2	2.00	-0.98
10	Jun-07	4.5	2	2.00	-0.98
11	Nov-07	4.5	1	1.67	-1.08
12	Jun-08	4.5	1	1.50	-1.13
13	Nov-08	4.5	0.5	1.30	-1.20
14	Jun-09	4.5	0.5	1.17	-1.24



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 Ni**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Aug-96	10	9.44	9.35
2	Nov-96	10		
3	May-97	31		
4	May-98	8		
5	Nov-03	9		
6	Jun-05	2.5		
7	Dec-05	2.5		
8	Jun-06	2.5		

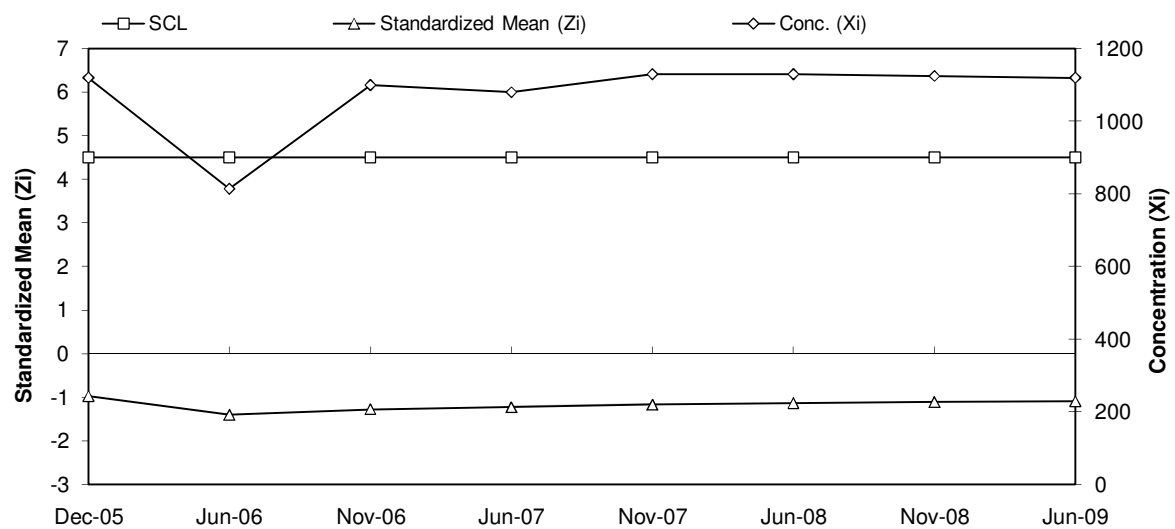
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Nov-06	4.5	2.5	2.50	-0.74
10	Jun-07	4.5	2	2.25	-0.77
11	Nov-07	4.5	5	3.17	-0.67
12	Jun-08	4.5	2.5	3.00	-0.69
13	Nov-08	4.5	2.5	2.90	-0.70
14	Jun-09	4.5	2.5	2.83	-0.71



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-24 SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Aug-96	1502	1,462.00	351.23
2	Nov-96	2030		
3	May-97	1700		
4	May-98	1410		
5	Nov-98	1595		
6	Nov-99	1152		
7	May-01	1450		
8	Jun-05	857		

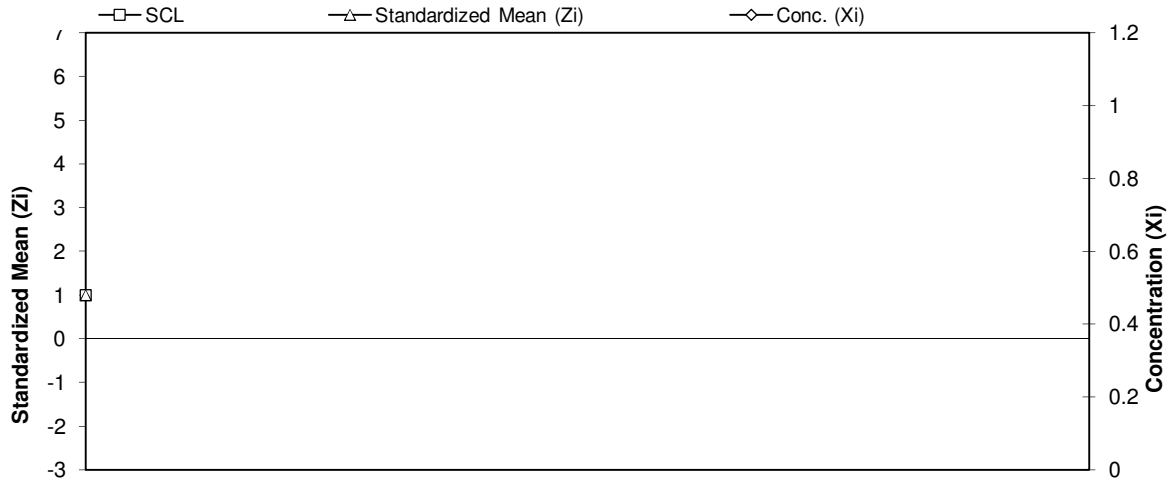
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)
9	Dec-05	4.5	1120	1,120.00	-0.97
10	Jun-06	4.5	814	967.00	-1.41
11	Nov-06	4.5	1100	1,011.33	-1.28
12	Jun-07	4.5	1080	1,028.50	-1.23
13	Nov-07	4.5	1130	1,048.80	-1.18
14	Jun-08	4.5	1130	1,062.33	-1.14
15	Nov-08	4.5	1125	1,071.29	-1.11
16	Jun-09	4.5	1120	1,077.38	-1.10



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-27 Cu**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Dec-05	2	1.38	0.69
2	Jun-06	2		
3	Nov-06	2		
4	Jun-07	2		
5	Nov-07	1		
6	Jun-08	0.5		
7	Nov-08	0.5		
8	Jun-09	1		

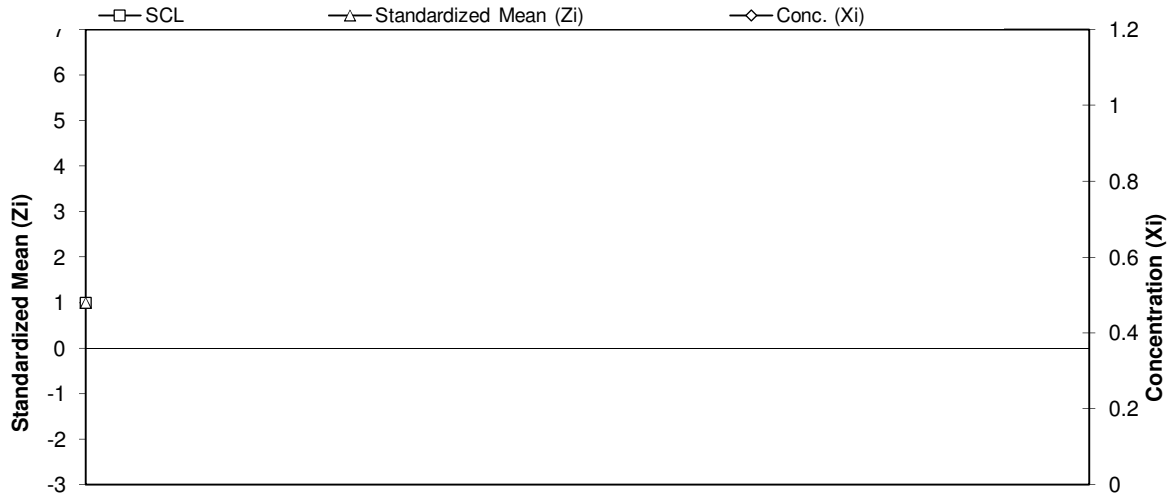
Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)



REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-27 Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Dec-05	5	11.56	13.97
2	Jun-06	6		
3	Nov-06	6		
4	Jun-07	36		
5	Nov-07	32		
6	Jun-08	2.5		
7	Nov-08	2.5		
8	Jun-09	2.5		

Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)



**REALM - COLDWATER ROAD FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-28 pH**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-06	7.1	6.97	0.23
2	Dec-06	7.4		
3	Jun-07	6.8		
4	Nov-07	6.8		
5	Jun-08	6.9		
6	Nov-08	6.8		
7	Jun-09	7.0		

Ti	Date	SCL	Conc. (Xi)	Mean (\bar{X}_i)	Standardized Mean (Zi)

