

POST-CLOSURE GROUNDWATER MONITORING – SEMIANNUAL REPORT - FINAL

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

**RACER Trust
Ypsilanti, Michigan**

August 2011




15388 | 47850

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

Coldwater, Michigan

**Prepared for RACER Trust
Ypsilanti, Michigan**



**SCOTT L. CORMIER, P.E.
VICE PRESIDENT**

O'Brien & Gere Engineers, Inc.



August 31, 2011

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: Post-Closure Groundwater Monitoring 2011 Semiannual Report
Coldwater Road Landfill, Flint, Michigan
MID 005 356 860
FILE: 15388 /47850/rep

Dear Mr. Conforti:

On behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust, O'Brien & Gere is pleased to present the results of the semiannual groundwater sampling event conducted in June 2011 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, dissolved oxygen, oxidation reduction potential, temperature, and turbidity. Groundwater samples were collected using a bladder or peristaltic pump, and low-flow sampling techniques in accordance with O'Brien & Gere procedures and the site-specific Field Method Guide (Appendix A). Samples to be analyzed for dissolved metals were field filtered. Groundwater sampling logs are included as (Appendix B).

Gauging and sampling were conducted on June 21, 2011 through June 22, 2011. 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, Metals, Chloride, Cyanide, Phenols and Sulfate); Table 3 - 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 (*i.e.*, site layout) map (Figure 2) are also included. A groundwater elevation map was completed for the shallow wells (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 wells because the wells monitor discontinuous perched zones and therefore the water level elevations exhibited no pattern.

The drift aquifer static water elevations, which were calculated from depth to water measurements collected on June 21, 2011, were consistent with historical data. 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 perched zones 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 concentrations decreased for all monitoring wells sampled during the June 2011 sampling event
- Copper concentrations were not detected above method detection limits, except in monitoring well B-9 where copper slightly increased in concentration, but was still similar to historic concentrations
- Nickel concentrations were not detected above method detection limits or were comparable to previous results; except in B-7, B-9, B-18A, B-19A, B-24R and B-28, where increased concentrations were detected; however, with the exception of B-28 (discussed later) the concentrations were similar to historic concentrations
- Zinc concentrations were not detected above method detection limits, except in B-7, B-18A and B-20D where zinc increased in concentration, but were similar to historic concentrations, and in monitoring well B-9 where the zinc concentrations decreased
- TOC concentrations were comparable to previous results
- TOX concentrations were not detected above method detection limits, except in monitoring well B-7 where TOX decreased in concentration. Concentrations of TOX decreased in monitoring wells B-9 and B-18A to below detection limits from previous detections above method detection limits
- pH concentrations were comparable to previous results or increased slightly
- Specific conductivity results were comparable to previous results or decreased slightly; except in monitoring well B-28 where specific conductivity readings increased slightly
- Iron concentrations increased, but were similar to previous results; except in monitoring wells B-24R, B-27D and B-28, where iron concentrations decreased as compared to previous results
- Manganese concentrations were comparable to previous sample results
- Sodium concentrations decreased in monitoring wells B-2D, B-7, B-9, B-20D, B-21D, and B-23DR
- Chloride concentrations decreased; except in B-19AR, and B-23DR where chloride concentrations increased slightly
- Sulfate concentrations decreased slightly; except in monitoring wells B-21D, B-23DR, and B-28 where sulfate concentrations increased, but were similar to historic concentrations
- Cyanide and phenols were not detected above method detection limits in the monitoring wells sampled during the June 2011 sampling event.

The duplicate sample results collected from monitoring well B-24R were comparable to the original sample. VOCs concentrations were not detected above method detection limits during this sampling event.

There were no exceedances of the Shewart control limits (SCL) during this sampling event (Appendix D). A decreasing trend was observed at monitoring well B-20D for specific conductivity. This trend was not confirmed by other trends or spikes in the other constituents monitored in this well, and does not suggest a release from the landfill and will continue to be reviewed during future sampling events. The detection of nickel at a concentration of 5 µg/L (MDEQ Residential Drinking Water Criteria is 100 µg/L) in B-28 is considered a spike due to predominantly non-detectable concentrations historically; however, no other spikes or trend were observed in this well and it is not considered a confirmed spike. However, the nickel concentration in B-28 will continue to be reviewed during future sampling events.

Chromium spiked, as defined in the decision tree of the Post Closure Care Plan that specifies a spike as a result greater than the mean plus one standard deviation, in seven of the twelve monitoring wells (B-2D, B-9, B-18A, B-21D, B-22D, B-24R and B-27) sampled during this sampling event; however, as stated earlier, chromium concentrations decreased in comparison to the last sampling event, but was also elevated compared to historical concentrations.

Furthermore, chromium spiked during the last sampling event and has spiked more often recently than in past sampling events. The trend of chromium spikes has also been observed in the leak detection system (LDS) vaults over the last few sampling events. However, there were no other spikes or significant upward trends for the remaining inorganic constituents (copper, nickel, and zinc) in samples analyzed from the wells during this or other sampling events, for which there was no apparent reason. In particular, because upon re-sampling the analyses were non-detect for chromium. Furthermore, MDEQ split samples for B-24R, B-27D and B-28 during the November 2010 sampling event, and their results were non-detect for chromium at a detection limit of 1 µg/L.

At the request of O'Brien & Gere, Merit Laboratories conducted research utilizing the remaining portions of the site's samples that were still at the laboratory, and determined that the groundwater samples contain high levels of carbon (in the low part per million range based on the TOC results from this sampling event – see Table 2) in comparison to the chromium concentrations at the site. Carbon has an isotope (*i.e.*, atomic weight) of 12. The carbon is likely the result of natural organic material decay within the groundwater that is releasing carbon. Argon gas, which is used as a carrier gas by the laboratory analyzing instrument, has an isotope of 40. When added together, they result in 52, which is the method recommended isotope value used for the identification of chromium. Therefore, the sample concentrations were calculated using the Chromium-52 isotope identification value, and those concentrations, a sum of the chromium and argon/carbon combination, were originally reported by the laboratory. The laboratory re-analyzed the samples on two different instruments utilizing digested and non-digested sample aliquots, and confirmed the reported chromium results were greater than the actual chromium concentrations due to carbon interference. Results of the original and re-analyzed chromium samples are shown on Table 2. Chromium was not detected in the re-analyzed samples, with the exception of the sample from B-21D, which contained chromium at a concentration of 7 µg/L, which is not considered a spike for this well. The USEPA Method 200.8, recommends not digesting samples for dissolved metals analysis. However, for future sampling events, we propose to alter the current USEPA 200.8 method to include digestion to reduce the carbon levels within the samples, and reduce the potential for the laboratory reporting non-representative high concentrations for the chromium analysis. The spikes in chromium concentrations will continue to be reviewed during future sampling events.

O'Brien & Gere recommends that for the last sampling event that only the replicate sample results be utilized, and for sampling events with non-detect or lower concentration re-sample or split sample results that the database and statistical analysis only include the replicate, re-sample or split sample results.

No other trends or spikes were observed during this monitoring event. The data from this sampling event does not suggest a release from the landfill.

GROUNDWATER MONITORING PROPOSAL

O'Brien & Gere is proposing the reduction in groundwater monitoring from semiannual to annual for the Site. Groundwater at the Coldwater Road Landfill has been monitored semiannually from June 1995 through June 2011 (35 sampling events) and there have been two detections of dissolved metals above the MDEQ Part 201 Residential Drinking Water criteria (6/21/1995- nickel at well B-22D and 11/6/1997-nickel at well B-9). Since these detections, groundwater analytical results for the indicator

parameters have been below method detection limits or below the MDEQ Part 201 Residential Drinking Water criteria, and the data does not show a statistically significant increase.

Concentrations in water in the leak detection vaults (Appendix E) indicate concentrations are consistently below the MDEQ Part 201 Residential Drinking Water criteria, except for one sampling event in November 1997 when four of the vaults sampled exhibited concentrations of dissolved nickel above the MDEQ Part 201 Residential Drinking Water criterion. It is likely this sampling event was an anomaly based on previous and subsequent sampling event results.

In addition, the landfill is situated on a minimum of 10 ft of clay soil having a minimum permeability of 10^{-6} cm/sec. The landfill contains a leak detection vault located at each of the cells which are sampled semiannually for the same indicator parameters, and would continue to be under this proposal. These vaults are located below the secondary containment liner of the landfill and a release from the primary liner would likely be detected in the vault well in advance of detecting a release from groundwater sampling the monitoring well network at the Site. In addition, shallow groundwater at the Site consists of potentially discontinuous perched zones. These perched zones have vertical permeabilities which range from 10^{-7} to 10^{-8} cm/sec. It appears there is little hydraulic connection between the perched zone and the drift aquifer at the Site, based on previous investigations that show a difference in the flow direction of the two hydraulic zones, their gradients, water elevations, and natural groundwater quality. This further supports the likeliness of a release being detected in the leak detection vaults well in advance of the groundwater sampling program. Furthermore, the fact that the perched zone and the drift aquifer at the Site are separated by a significant layer of clay indicates that even if a release occurred from the landfill, that there would be time to detect a release before the drift aquifer (*i.e.*, potential drinking water aquifer), in particular, was impacted. Therefore, we propose to reduce the sampling frequency of the groundwater sampling program for the Coldwater Road Landfill groundwater monitoring program from semiannual to annual, which would be re-evaluated if levels above the MDEQ Part 201 criteria are detected in the vaults.

The next sampling event (annual event) is currently scheduled for November 2011. 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, PE
Vice President

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

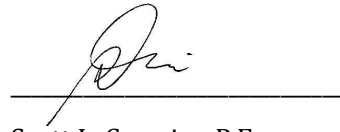


Clifford S. Yantz
Technical Associate

cc: David Favero – RACER Trust
Kevin Schneider – O'Brien & Gere

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 RACER Trust



Scott L. Cormier, P.E.
Agent for RACER Trust

Vice President - O'Brien & Gere Engineers, Inc.

Title

August 31, 2011

Date

cc: file

TABLES

Table 1
RACER Trust- Coldwater Road Landfill Facility
Depth to Ground Water Levels in Monitoring Wells
June 21, 2011

Well	Top Of Casing Elev. (ft) *	Depth To Water (ft)	Static Water Elev. (ft)
B-2D	805.18	53.44	751.74
B-7	815.20	21.84	793.36
B-9	809.16	7.10	802.06
B-18A	812.25	23.55	788.70
B-19A	813.89	7.65	806.24
B-19AR	813.15	38.20	774.95
B-20D	816.61	69.76	746.85
B-21D	822.60	79.92	742.68
B-22D	823.73	85.55	738.18
B-23DR	813.72	82.83	730.89
B-24R	817.37	13.60	803.77
B-27D**	814.36	77.17	737.19
B-28	818.07	7.35	810.72

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
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	--	12	<0.005	<0.020	79
	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	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	13	<0.005	<0.020	40
	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	<0.005	<0.020	42
	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	7	<0.005	<0.020	81
	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	2	<0.005	<0.020	32
	Dup. 10/18/2001	3.6	<100	7.4	1780	7.8	<10	<10	<5	<10	210	--	12,700	1	<0.005	<0.020	32
	5/16/2002	4.0	<100	7.2	1000	11.6	<10	<10	<5	<10	--	--	--	--	--	--	--
	Dup. 11/7/2002	2.6	<30	7.4	490	9.5	<5	<5	<5	<5	140	8	11,900	2	<0.005	<0.020	32
11/7/2002	2.7	<30	--	--	--	<5	<5	<5	<5	140	6	11,200	2	<0.005	<0.020	30	
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	--	2	<0.005	<0.010	31	
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	2	<0.005	<0.010	35	
6/8/2005	2.0	<30	8.0	620	11.5	<5	<5	<5	<5	660	199	10,900	<5	<0.005	<0.010	34	
12/8/2005	3.0	<30	6.9	642	10.2	9	<4	<5	<10	140	120	13,300	--	--	--	--	
Dup. 6/28/2006	6.3	<30	7.4	671	12.2	<5	<4	<5	8	110	70	15,000	2	<0.005	<0.010	50	
6/28/2006	5.1	<30	7.4	682	12.2	<5	<4	<5	8	120	70	15,200	3	<0.005	<0.010	50	
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	4	<0.005	<0.010	44	
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	10	<0.005	<0.010	98	
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	10	<0.005	<0.010	104	
11/16/2009	4	<30	7.2	835	10.2	<5	<4	<5	6	--	--	--	--	--	--	--	
6/16/2010	5	<30	7.1	841	13.9	<5	<4	<5	<5	40	83	19,000	7	<0.005	<0.020	75	
11/10/2010	4	<30	7.2	779	11.3	11	<4	<5	<5	--	--	--	--	--	--	--	
6/21/2011	2.9	<30	7.0	742	19.3	9	<4	<5	<5	250	55	16,900	6	<0.005	<0.010	57	
Replicate 6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	1,508	13.2	<20	<20	<20	20	--	--	--	--	--	--	--
	8/21/1996	55.0	26	7.6	1,567	17.1	<20	<20	<20	60	--	--	--	--	--	--	--
	11/13/1996	27.0	<5	8.0	1,960	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	NS	NS	NS	NS
	5/4/1998	6.0	<5	6.6	1,270	10.7	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1998	4.0	<10	4.6	1,240	11.2	<10	<10	8	30	10	424	31,000	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	58	<0.005	<0.020	161
	4/26/1999	3.9	<100	7.5	1,413	14.2	<10	<10	10	<10	--	--	--	--	--	--	--
	11/5/1999	5.1	<100	6.5	1,230	14.2	<10	<10	8	30	260	313	41,800	64	<0.005	<0.020	301
	4/26/2000	4.8	<100	7.6	1,450	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	1,180	9.5	<10	<10	20	10	50	--	58,900	79	<0.005	<0.020	227
5/16/2001		5.0	<100	7.3	1,330	13.0	<10	<10	7	<10	--	--	--	--	--	--	--
10/18/2001		5.3	<100	7.2	1,210	12.5	<10	<10	5	<10	330	--	60,800	81	<0.005	NA	205
5/16/2002		3.9	<100	7.2	1,850	11.9	<10	<10	<5	10	--	--	--	--	--	--	--
11/7/2002		NR	NR	7.4	1,120	10.3	<5	<5	5	5	250	<5	65,500	NA	NA	NA	NA
6/4/2003		3.3	<30	6.9	1,460	12.6	<5	<5	<5	<5	--	--	--	--	--	--	--
11/13/2003		3.9	<30	6.9	1,590	9.6	<5	<5	<5	5	190	<5	--	85	<0.005	<0.010	279
6/30/2004		4.3	43	7.1	1,353	16.0	<5	<5	9	7	--	--	--	--	--	--	--
12/9/2004		4.0	<30	5.3	1,290	10.8	<5	<5	7	14	180	74	71,200	78	<0.005	<0.010	251
6/8/2005		7.0	86	7.4	1,121	10.9	5	<5	9	13	170	31	81,900	80	<0.005	<0.010	254
12/7/2005		7.5	<30	8.7	1,430	12.2	10	<4	6	20	150	50	85,300	--	--	--	--
6/29/2006		4.3	<30	7.2	1,470	11.7	5	<4	9	18	190	150	76,900	73	<0.005	<0.010	270
11/29/2006		4.4	<30	6.9	1,380	15.3	<5	<4	9	11	--	--	--	--	--	--	--
6/7/2007		3.9	23.7	6.9	1,400	13.4	11	27	5	14	130	42	87,300	72	<0.005	<0.010	208
11/14/2007	3.5	<30	6.9	1,350	13.4	14	6	16	20	--	--	--	--	--	--	--	
6/25/2008	3.8	72.9	6.9	1,410	20.7	<5	3	6	<5	350	10	94,800	68	<0.005	<0.010	222	
11/17/2008	4.6	20.5	6.8	1,258	5.5	<5	3	5	17	--	--	--	--	--	--	--	
6/24/2009	4.5	<30	6.9	1,184	20.0	<5	3	<5	14	67	36	84,500	40	<0.005	<0.010	154	
11/17/2009	8	25.3	7.3	1,090	10.3	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/17/2010	5	<30	7.0	1,290	16.3	<5	<4	<5	<5	<20	47	86,000	61	<0.005	<0.020	160	
11/8/2010	8	103	7.2	997	13.9	17	<4	<5	<5	--	--	--	--	--	--	--	
6/22/2011	4.3	25	7.3	910	13.7	10	<4	5	6	220	6	55,200	26	<0.005	<0.010	88	
Replicate	6/22/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
B-9	6/21/1995	3.5	34	7.7	2,400	14.6	<20	<20	<30	<20	--	--	--	--	--	--	--
	8/31/1995	3.9	<10	7.7	1,829	14.8	37	43	<40	<20	--	--	--	--	--	--	--
	2/9/1996	3.1	<10	7.3	2,860	8.0	<20	<20	<40	<20	--	--	--	--	--	--	--
	6/19/1996	2.1	<100	6.8	2,550	11.5	<20	<20	<20	<20	--	--	--	--	--	--	--
	8/21/1996	2.3	<5	8.0	2,310	16.4	<20	<20	<20	70	--	--	--	--	--	--	--
	11/13/1996	71.0	<5	6.8	3,280	9.2	<20	<20	<20	40	--	--	--	--	--	--	--
	5/6/1997	3.0	<100	6.8	2,600	10.0	<10	<10	51	20	--	--	--	--	--	--	--
	11/6/1997	2.0	<100	6.5	2,800	11.0	<10	<10	183	40	650	741	--	141	<0.005	<0.020	1,178
	5/4/1998	3.0	<5	6.6	2,400	14.5	10	10	18	40	--	--	--	--	--	--	--
	11/5/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS	NS
	4/26/1999	4.0	<100	7.7	1,860	12.2	<10	<10	19	20	--	--	--	--	--	--	--
	11/5/1999	2.5	<100	6.8	2,340	15.4	<10	<10	20	30	610	1280	47,100	128	<0.005	<0.020	1,222
	4/26/2000	5.5	<100	7.6	2,780	9.5	<10	<10	12	30	--	--	--	--	--	--	--
	12/8/2000	5.0	<10	7.6	2,400	7.8	<10	<10	46	<10	50	--	69,500	142	<0.005	<0.020	1,246
	5/16/2001	4.8	<100	7.4	1,070	12.6	<10	<10	7	10	--	--	--	--	--	--	--
	10/17/2001	4.0	<100	7.5	2,130	10.8	<10	<10	8	20	940	--	66,000	122	<0.005	NA	1,150
	5/16/2002	1.9	<100	7.2	2,470	11.6	<10	<10	7	10	--	--	--	--	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/4/2003	2.2	57	6.8	2,690	10.7	<5	<5	15	13	--	--	--	--	--	--	--
	11/13/2003	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/30/2004	3.8	NS	6.9	2,379	12.7	<5	8	19	28	--	--	--	--	--	--	--
	12/9/2004	3.0	<30	5.9	2,480	11.4	<5	<5	11	19	570	248	55,900	149	<0.005	<0.010	1,350
	6/8/2005	4.0	<30	7.1	2,116	10.3	6	6	12	17	480	701	58,300	128	<0.005	<0.010	1,160
	12/7/2005	5.0	<30	8.6	2,830	11.9	11	5	12	40	320	410	58,500	--	--	--	--
	6/29/2006	1.9	<30	6.8	2,820	12.4	6	6	13	19	390	330	63,600	125	<0.005	<0.010	1,150
	11/30/2006	2.7	36.7	7.2	2,830	12.5	<5	6	<5	14	--	--	--	--	--	--	--
	6/5/2007	2.1	<30	6.7	2,770	11.0	12	6	24	21	320	1,900	67,300	112	<0.005	<0.010	1,120
11/16/2007	2.0	27.4	6.7	3,000	9.4	2	6	24	18	--	--	--	--	--	--	--	
7/2/2008	1.8	36.4	6.4	3,060	19.7	<5	4	13	19	780	812	64,200	133	<0.005	<0.010	1,280	
11/20/2008	2.2	15.9	6.4	3,290	8.1	<5	<1	13	<5	--	--	--	--	--	--	--	
11/20/2008	2.0	127	6.4	3,280	8.1	<5	<1	13	<5	--	--	--	--	--	--	--	
6/25/2009	1.6	<30	6.7	2,700	19.8	<5	<1	<5	<5	59	173	65,300	107	<0.005	<0.010	1,120	
11/16/2009	3	84.1	6.7	3,030	12.7	<5	<4	16	8	--	--	--	--	--	--	--	
6/15/2010	3	27.5	6.7	3,030	13.0	<5	<4	7	6	460	475	70,700	117	<0.005	<0.020	1,230	
11/11/2010	3	37.5	6.4	2,910	12.9	19	4	7	15	--	--	--	--	--	--	--	
6/22/2011	1.9	<30	6.7	2,600	14.0	17	6	21	12	780	661	63,300	99	<0.005	<0.010	972	
Replicate	6/22/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	--	12	<0.005	<0.020	61
	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	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	8	<0.005	<0.020	47
	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	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	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	6	<0.005	NA	72
	5/16/2002	2.3	NR	7.1	1,790	12.1	<10	<10	<5	60	--	--	--	--	--	--	--
	11/7/2002	NR	NR	7.5	540	9.9	<5	<5	<5	31	170	15	14,400	NA	NA	NA	NA
	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	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	260	160	62	4,390	5	<0.005	<0.010	84	
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	8	<0.005	<0.010	79
	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	1,090	160	90	14,600	6	<0.005	<0.010	93
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	1,440	--	--	--	--	--	--	--
Re-sample	1/30/2007	--	--	8	607	10.1	--	--	--	1,850	--	--	--	--	--	--	--
	6/5/2007	1.6	26.1	7.0	849	11.0	9	3	1	355	520	245	15,200	10	<0.005	<0.010	82
	11/15/2007	1.2	16.1	7.1	803	7.8	2	1	4	134	--	--	--	--	--	--	--

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
B-18A	6/21/1995	2.7	<10	7.5	1,048	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	1,021	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	1,041	12.8	<20	<20	<20	60	--	--	--	--	--	--	--
	11/13/1996	19.0	<5	7.2	1,331	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	1,100	10.0	<10	<10	62	10	380	62	--	12	<0.005	<0.020	130
	5/4/1998	2.0	<5	6.7	862	11.8	<10	<10	<5	20	--	--	--	--	--	--	--
	11/5/1998	1.0	<10	6.0	1,090	11.8	<10	<10	<5	10	240	128	46,000	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	10	<0.005	<0.020	133
	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	8	<0.005	<0.020	130
	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	7	<0.005	<0.020	126
Dup. 12/8/2000	2.6	<10	--	--	--	<10	<10	13	<10	40	--	35,100	7	<0.005	<0.020	112	
5/16/2001	2.4	<100	7.9	1,160	12.9	<10	<10	<5	10	--	--	--	--	--	--	--	
10/17/2001	2.2	<100	7.1	1,020	12.2	<10	<10	<5	<10	350	--	35,400	7	<0.005	<0.020	132	
5/16/2002	1.5	<100	7.2	2,080	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	10	<0.005	<0.020	134	
6/4/2003	1.6	<30	6.9	790	13.1	<5	<5	<5	5	--	--	--	--	--	--	--	
Dup. 11/13/2003	1	<30	7.7	1,180	7.1	<5	<5	<5	<5	160	<5	--	10	<0.005	<0.010	129	
11/13/2003	--	--	--	--	--	--	--	--	--	--	--	--	11	<0.005	<0.010	130	
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	14	<0.005	<0.010	127	
6/8/2005	2	<30	7.4	819	10.9	<5	<5	6	16	170	80	40,000	11	<0.005	<0.010	120	
12/8/2005	2.6	<30	9.7	1,120	10.1	11	<4	<5	10	390	170	47,000	--	--	--	--	
6/27/2006	1.2	<30	7.1	1,110	13.2	5	4	<5	46	170	50	48,200	13	<0.005	<0.010	125	
11/30/2006	1.4	119	7.2	1,100	11.5	5	<4	<5	9	--	--	--	--	--	--	--	
6/4/2007	1	19.9	7.0	1,070	13.2	9	3	3	14	110	22	51,800	15	<0.005	<0.010	114	
11/14/2007	<1	19	6.9	1,090	13.7	1	2	6	11	--	--	--	--	--	--	--	
6/25/2008	12	34.1	7.1	1,060	20.4	<5	2	<5	11	310	<5	54,800	15	<0.005	<0.010	110	
11/18/2008	<1	<30	6.6	1,088	2.9	<5	<1	<5	<5	--	--	--	--	--	--	--	
6/24/2009	<1	<30	7.3	1,060	26.2	<5	1	<5	15	<20	<5	53,100	16	<0.005	<0.010	111	
11/18/2009	2	<30	6.9	1,070	11.7	<5	<4	<5	45	--	--	--	--	--	--	--	
6/17/2010	1	<30	7.2	1,080	17.5	<5	<4	<5	8	<20	<5	45,500	15	<0.005	<0.020	109	
11/10/2010	2	28	6.9	1,065	9.5	12	<4	<5	<5	--	--	--	--	--	--	--	
6/21/2011	1.2	<30	7.2	1,031	18.8	10	<4	5	12	240	<5	46,100	17	<0.005	<0.010	103	
Replicate 6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	WD	WD	WD	WD
	5/4/1998	3.0	<5	6.8	1,480	10.1	<10	<10	<5	30	--	--	--	--	--	--	--
	11/5/1998	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	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	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	NS	NS	NS	NS
	5/16/2001	4.0	<100	7.1	1,050	11.8	<10	<10	<5	<10	--	--	--	--	--	--	--
	10/17/2001	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5/16/2002	6.0	<100	7.2	1,740	10.6	<10	<10	<5	10	--	--	--	--	--	--	--
	11/7/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/4/2003	5.8	<30	6.9	1,350	12.9	<5	<5	<5	<5	--	--	--	--	--	--	--
11/13/2003	3.4	<30	7.6	1,620	10.2	<5	<5	<5	<5	20	<5	--	148	<0.005	<0.010	229	
6/29/2004	3.9	<30	7.2	1,316	14.7	<5	<5	<5	8	--	--	--	--	--	--	--	
12/9/2004	5.0	33	6.2	1,340	9.9	<5	<5	<5	9	240	11	111,000	116	<0.005	<0.010	233	
Dup. 12/9/2004	5.0	<30	--	--	--	<5	<5	<5	7	170	<5	114,000	116	<0.005	<0.010	233	
B-19AR	6/7/2005	3.0	<30	7.1	829	12.2	<5	<5	7	<5	1,320	228	15,700	52	<0.005	<0.010	130
Dup. 12/8/2005	5.5	<30	--	1,390	--	10	<4	<5	20	160	<20	81,400	--	--	--	--	
12/8/2005	5.3	<30	7.1	1,390	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	51	<0.005	<0.010	153	
11/30/2006	6.2	33.7	7.2	1,300	11.4	5	<4	<5	<5	--	--	--	--	--	--	--	
6/7/2007	2	<30	7.0	899	11.4	6	4	4	9	70	21	19,700	58	<0.005	<0.010	136	
11/13/2007	1.5	<30	7.3	1,070	12.1	3	7	26	11	--	--	--	--	--	--	--	
6/25/2008	2.4	38.8	7.1	1,060	17.4	<5	3	<5	16	380	9	18,500	58	<0.005	<0.010	148	
11/18/2008	1.3	<30	7.0	1,052	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	60	<0.005	<0.010	147	
11/19/2009	2	<30	7.4	994	10.4	<5	<4	<5	7	--	--	--	--	--	--	--	
6/15/2010	2	<30	7.6	992	16.1	<5	<4	<5	<5	<20	<5	19,800	59	<0.005	<0.020	154	
11/10/2010	2	<30	6.9	1,128	8.7	12	<4	<5	<5	--	--	--	--	--	--	--	
6/22/2011	1.5	<30	7.4	902	17.2	5	<4	5	<5	240	<5	22,400	64	<0.005	<0.010	140	
Replicate 6/22/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	1,204	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	1,075	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	<0.005	<0.020	101
	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	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	3	<0.005	<0.020	92
	Dup. 12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	3	<0.005	<0.020	89
	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	33	<0.005	<0.020	105
	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	2	<0.005	<0.020	113
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	2	<0.005	<0.020	105	
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	3	<0.005	<0.020	115	
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	--	5	<0.005	<0.010	127	
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	3	<0.005	<0.010	148	
6/7/2005	4.0	<30	7.3	707	11.9	7	<5	5	<5	2,140	66	16,500	<5	<0.005	<0.010	155	
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	2	<0.005	<0.010	169	
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	4	<0.005	0.074	144	
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	4	<0.005	<0.010	164	
11/18/2008	1	36.1	6.9	1,006	12.6	<5	4	6	22	--	--	--	--	--	--	--	
6/24/2009	1.1	<30	7.2	1,000	19.4	<5	<1	<5	<5	1,720	56	21,000	3	<0.005	<0.010	180	
Dup. 6/24/2009	<1	<30	7.2	1,010	19.4	<5	<1	<5	<5	1,640	56	20,800	3	<0.005	<0.010	183	
11/18/2009	2	<30	7.0	1,030	12.1	<5	<4	<5	5	--	--	--	--	--	--	--	
6/16/2010	2	<30	7.3	1,020	15.1	<5	<4	<5	<5	1,930	49	19,000	2	<0.005	<0.020	177	
11/9/2010	3	<30	7.0	998	11.7	11	<4	<5	<5	--	--	--	--	--	--	--	
6/22/2011	1.6	<30	7.2	967	15.5	9	<4	<5	13	2,550	54	18,600	<5	<0.005	<0.010	164	
Replicate 6/22/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	--	2	<0.005	<0.020	33
	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	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	15
	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	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	2	<0.005	<0.020	36
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	1	<0.005	<0.020	41
	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	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	--	4	<0.005	<0.010	48
	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	2	<0.005	<0.010	50
	6/8/2005	3.0	<30	7.7	560	14.2	<5	<5	12	6	1,350	72	21,000	<5	<0.005	<0.010	44
	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	2	<0.005	<0.010	53
	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	4	<0.005	<0.010	60
	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	3	<0.005	<0.010	60	
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	3	<0.005	<0.010	64	
Dup	11/19/2009	2	41.2	7.2	745	10.2	<5	<4	<5	6	--	--	--	--	--	--	--
	11/19/2009	2	<30	7.2	739	10.2	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/17/2010	2	<30	7.4	736	13.2	<5	<4	<5	<5	980	34	23,700	3	<0.005	<0.020	58
	11/10/2010	1	<30	7.3	739	11.0	11	<4	<5	<5	--	--	--	--	--	--	--
6/22/2011	1.4	<30	7.4	718	19.5	10	<4	<5	<5	1,540	33	23,300	<5	<0.005	<0.010	61	
Replicate	6/22/2011	--	--	--	--	7	--	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	--	2	<0.005	<0.020	32
	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	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	28
	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	2	<0.005	<0.020	29
	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	2	<0.005	<0.020	31
	5/15/2001	6.7	<100	8.0	690	13.7	<10	<10	6	30	--	--	--	--	--	--	--
	10/18/2001	1.7	<100	7.6	2,610	10.2	<10	<10	<5	<10	200	--	27,800	1	<0.005	<0.020	33
	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	2	<0.005	<0.020	35
	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	--	3	<0.005	<0.010	37
	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	2	<0.005	<0.010	42
	6/8/2005	2.0	<30	7.7	531	13.2	6	<5	<5	<5	1,370	38	23,700	<5	<0.005	<0.010	40
	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	2	<0.005	<0.010	42	
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	<5	--	--	--	--	--	--	--	
6/8/2007	3.8	<30	6.6	680	14.3	7	2	1	5	1,180	32	28,100	3	<0.005	<0.010	46	
Dup. 6/8/2007	3.1	21.1	6.6	669	14.3	9	2	1	4	1,210	31	28,400	4	<0.005	<0.010	47	
11/14/2007	1.1	<30	7.3	710	14.2	2	2	3	6	--	--	--	--	--	--	--	
Dup. 6/26/2008	1.7	22.6	7.1	694	19.3	<5	<1	<5	5	1,100	33	25,900	3	<0.005	<0.010	46	
6/26/2008	2.6	<30	7.1	710	19.3	<5	<1	<5	7	1,150	34	26,400	3	<0.005	<0.010	46	
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	2	<0.005	<0.010	54	
11/18/2009	2	<30	7.2	710	11.4	<5	<4	<5	<5	--	--	--	--	--	--	--	
6/16/2010	2	<30	7.4	715	15.7	<5	<4	<5	<5	1,100	28	26,000	2	<0.005	<0.020	51	
11/11/2010	2	<30	7.3	704	10.3	11	<4	<5	<5	--	--	--	--	--	--	--	
6/21/2011	1.3	<30	7.4	705	17.0	9	<4	<5	<5	1,460	30	27,300	<5	<0.005	<0.010	50	
Replicate 6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						Inorganics (mg/L)					
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate	
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400								
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	--	2	<0.005	<0.020	25	
	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	--	--	--	--	
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	2	<0.005	<0.020	21	
	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	3	<0.005	<0.020	26
	Dup	11/5/1999	3.1	<100	NS	NS	NS	<10	<10	<5	<10	90	15	33,300	3	<0.005	<0.020	25
	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	2	<0.005	<0.020	22	
	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	2	<0.005	<0.020	23	
	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	NS	NS	NS	NS	
Dup	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	NS	NS	NS	NS	
	6/30/2004	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--	--	--	--	
B-23DR	12/10/2004	2.0	<30	6.7	640.0	11.3	<5	<5	11	10	500	65	30,500	2	<0.005	<0.010	25	
Dup	6/7/2005	2.0	<30	7.3	594.0	12.2	<5	<5	<5	<5	2,520	49	20,600	25	<0.005	<0.010	60	
Dup	6/7/2005	2.0	<30	--	--	--	<5	<5	<5	<5	2,580	48	20,600	25	<0.005	<0.010	59	
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	26	<0.005	0.010	67	
	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	28	<0.005	<0.010	62	
	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	22	<0.005	<0.010	54	
	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	29	<0.005	<0.010	63	
	11/18/2009	2	<30	7.2	756	11.9	<5	<4	<5	10	--	--	--	--	--	--	--	
B-23DR	6/16/2010	2	<30	7.4	747	18.2	<5	<4	<5	<5	950	35	23,200	20	<0.005	<0.020	45	
Dup	11/11/2010	2	21.5	7.3	743	12.8	11	<4	<5	<5	--	--	--	--	--	--	--	
Dup	11/11/2010	2	<30	7.3	742	12.8	11	<4	<5	<5	--	--	--	--	--	--	--	
	6/21/2011	1.2	<30	7.3	721	18.0	8	<4	<5	<5	1,520	37	22,400	22	<0.005	<0.010	48	
Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
B-24	6/21/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/31/1995	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2/9/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6/19/1996	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8/21/1996	5.6	<5	7.8	1,502	12.7	<20	<20	<20	90	--	--	--	--	--	--	--
	11/13/1996	20.0	<5	7.1	2,030	7.8	<20	<20	<20	50	--	--	--	--	--	--	--
	5/6/1997	5.0	<100	6.4	1,700	10.0	<10	<10	31	10	--	--	--	--	--	--	--
	11/6/1997	--	--	--	--	--	--	--	--	--	--	--	--	NS	NS	NS	NS
	5/4/1998	4.0	<5	6.5	1,410	11.6	<10	<10	8	20	--	--	--	--	--	--	--
	11/5/1998	4.0	23	5.5	1,595	10.4	<10	<10	9	20	60	120	27,700	--	--	--	--
	12/23/1998	--	--	--	--	--	--	--	--	--	--	--	--	163	<0.005	<0.020	205
	4/26/1999	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	11/5/1999	NS	NS	7.2	1,152	13.8	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	NS	NS	NS	NS
	5/15/2001	NS	NS	6.4	1,450	12.9	NS	NS	NS	NS	NS	NS	NS	--	--	--	--
	10/17/2001	NS	NS	NS	NS	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	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	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	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	49	<0.005	<0.010	206
B-24R	12/8/2005	6.6	<30	5.2	1,120	11.9	11	<4	<5	10	3,180	210	28,700	--	--	--	--
	6/28/2006	4.7	<30	7.3	1,080	11.9	6	<4	<5	<5	3,760	210	27,700	48	<0.005	<0.010	182
	11/30/2006	4.8	30	7.3	1,100	11.7	6	<4	<5	<5	--	--	--	--	--	--	--
	6/4/2007	4.5	110	7.2	1,080	11.0	9	2	2	19	2,400	194	27,900	47	<0.005	<0.010	184
	11/13/2007	4.1	30.1	7.1	1,130	14.0	3	1	5	7	--	--	--	--	--	--	--
	6/26/2008	4.3	<30	7.0	1,130	19.0	<5	1	<5	8	3,490	175	39,600	46	<0.005	<0.010	189
	11/18/2008	3.8	<30	6.8	1,125	5.3	<5	<1	<5	<5	--	--	--	--	--	--	--
	6/24/2009	5.2	<30	6.6	1,120	17.4	<5	<1	<5	<5	4,000	155	38,400	48	<0.005	<0.010	201
	11/18/2009	5	86.4	7.1	1,140	12.9	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/16/2010	4	22.7	7.0	1,150	16.3	<5	<4	<5	<5	1,880	222	39,500	46	<0.005	<0.020	196
	11/9/2010	5	26.8	6.9	1,136	13.5	11	<4	<5	<5	--	--	--	--	--	--	--
	6/21/2011	3.7	<30	7.1	1,136	17.5	10	<4	6	<5	1,130	255	51,700	45	<0.005	<0.010	206
Dup.	6/21/2011	3.7	<30	7.1	1,137	17.5	8	<4	6	<5	1,070	255	52,000	45	<0.005	<0.010	206
Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--
Dup. Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--

See notes on page 16.

**Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate**

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	4	<0.005	<0.010	23
	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	2	<0.005	<0.010	23
	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	2	<0.005	<0.010	20
	11/18/2009	2	<30	7.3	653	11.2	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/15/2010	2	<30	7.4	646	15.7	<5	<4	<5	<5	1,250	36	32,200	2	<0.005	<0.020	19
	Dup. 6/15/2010	2	31.2	7.4	652	15.7	<5	<4	<5	<5	1,220	35	31,700	2	<0.005	<0.020	20
	11/9/2010	2	<30	7.2	651	13.3	10	<4	<5	<5	--	--	--	--	--	--	--
	6/21/2011	1.5	<30	7.5	640	15.6	9	<4	<5	<5	1,370	29	34,600	<5	<0.005	<0.010	19
Replicate 6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--	

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
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	12	<0.005	<0.010	87
	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	10	<0.005	<0.010	88
	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	10	<0.005	<0.010	84
	11/18/2009	2	<30	6.9	814	11.6	<5	<4	<5	20	--	--	--	--	--	--	--
	6/16/2010	2	<30	7.0	841	17.6	<5	<4	<5	<5	790	173	19,100	12	<0.005	<0.020	78
	11/10/2010	3	<30	7.1	813	13.3	18	<4	<5	<5	--	--	--	--	--	--	--
	6/21/2011	1.5	<30	7.2	837	14.1	9	<4	5	<5	1,380	130	23,400	12	<0.005	<0.010	80
Replicate	6/21/2011	--	--	--	--	--	<5	--	--	--	--	--	--	--	--	--	--

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)						Inorganics (mg/L)				
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
B-29	11/21/2005	--	--	6.8	1,870	11.7	--	--	--	11	--	--	--	--	--	--	--
	6/27/2006	--	--	7.1	1,480	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	70	<0.005	<0.010	218
	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
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
B-30	11/21/2005	--	--	6.8	1,450	12.1	--	--	--	212	--	--	--	--	--	--	--
	6/27/2006	--	--	7.1	1,330	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	1,542	10.9	11	4	4	17	1,260	171	25,000	35	<0.005	<0.010	452
	11/15/2007	2.4	17.4	7.0	1,510	9.3	4	3	7	14	--	--	--	--	--	--	--

See notes on page 16.

Table 2
Coldwater Road Landfill Facility
Post-Closure Monitoring - Historical Analytical Results
Physical Parameters, TOC, TOX, Metals, Chloride, Cyanide, Phenols, and Sulfate

Well ID	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)							Inorganics (mg/L)			
		TOC (mg/L)	TOX (ug/L)	pH	SpC	T	Cr	Cu	Ni	Zn	Fe	Mn	Na	Chloride	Cyanide	Phenols	Sulfate
		MDEQ Residential Drinking Water Criteria					100 (A)	1,000 (E)	100 (A)	2,400							
Equipment Blank	12/10/2004	<1	<30	--	--	--	<5	<5	<5	11	<20	13	810	<2	<0.005	<0.010	<2
	6/8/2005	<1	<30	--	--	--	<5	<5	<5	<5	<20	<5	120	<5	<0.005	<0.010	<5
	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	<1	<0.005	<0.010	<1
	12/1/2006	<1	<30	--	26	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/8/2007	<1	26	--	13	--	<5	1	1	13	<20	11	340	<2	<0.005	<0.010	<2
	11/15/2007	<1	<30	--	4	--	<5	1	1	9	--	--	--	--	--	--	--
	6/26/2008	<1	<30	--	3	--	<5	1	<5	<5	100	7	420	<2	<0.005	<0.010	<2
	11/19/2008	<1	<30	--	6	--	<5	1	<5	<5	--	--	--	--	--	--	--
	6/25/2009	<1	<30	--	24	--	<5	<1	<5	<5	110	<5	200	<2	<0.005	<0.010	<2
	11/19/2009	0.7	<30	--	5	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/17/2010	0.4	<30	--	4	--	<5	<4	<5	<5	<20	<5	<200	<2	<0.005	<0.020	<2
	11/11/2010	1	<30	--	1.2	--	<5	<4	<5	<5	--	--	--	--	--	--	--
	6/22/2011	0.88	<30	--	3	--	<5	<4	<5	<5	<20	<5	460	<2	<0.005	<0.010	<2

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.
- Exceeds MDEQ Residential Drinking Water Criteria
- 7) "A" - Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.
- 8) "E" - Criterion is the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA)

Table 3
RACER Trust - Coldwater Road Facility
Post-Closure Monitoring - Analytical Results
Volatile Organics (VOC's)

Sample Tag	B-2D	B-7	B-9	B-18A	B-19AR	B-20D	B-21D	B-22D
Sample Date	6/21/2011	6/22/2011	6/22/2011	6/21/2011	6/22/2011	6/22/2011	6/22/2011	6/21/2011
Volatile Organics (mg/L)								
Acrolein	<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
Benzene	<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
Bromoform	<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
Carbon tetrachloride	<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
Chloroethane	<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
Chloroform	<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
Dibromochloromethane	<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
1,2-Dichloroethane	<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
trans-1,2-Dichloroethene	<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
cis-1,3-Dichloropropene	<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
Ethylbenzene	<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
1,1,2,2-Tetrachloroethane	<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
Toluene	<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
1,1,2-Trichloroethane	<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
Vinyl chloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Notes: NS indicates not sampled
EPA Method 8260 used for analysis.
Dup- Duplicate analysis

Table 3
RACER Trust - Coldwater Road Facility
Post-Closure Monitoring - Analytical Results
Volatile Organics (VOC's)

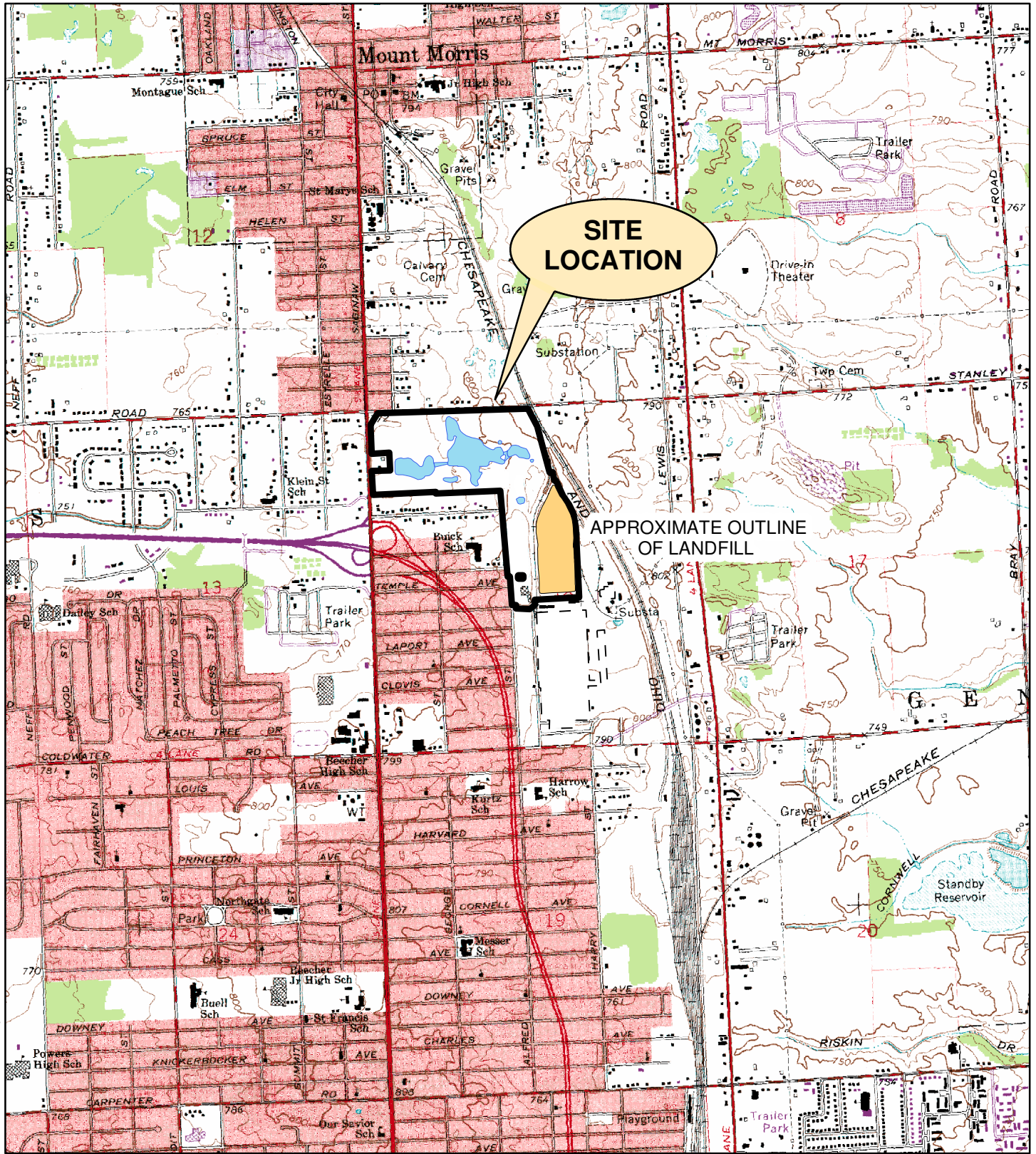
Sample Tag	B-23DR	B-24R	B-24R Dup	B-27D	B-28	TB-2	TB-3	EB-1
Sample Date	6/21/2011	6/21/2011	6/15/2010	6/21/2011	6/21/2011	6/21/2011	6/22/2011	6/22/2011
Volatile Organics (mg/L)								
Acrolein	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Acrylonitrile	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Benzene	<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
Bromoform	<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
Carbon tetrachloride	<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
Chloroethane	<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
Chloroform	<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
Dibromochloromethane	<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
1,2-Dichloroethane	<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
trans-1,2-Dichloroethene	<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
cis-1,3-Dichloropropene	<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
Ethylbenzene	<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
1,1,2,2-Tetrachloroethane	<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
Toluene	<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
1,1,2-Trichloroethane	<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
Vinyl chloride	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Notes: NS indicates not sampled
EPA Method 8260 used for analysis.
Dup- Duplicate analysis

FIGURES

I:\078\PROJECTS\15388 RACER Trust\47850\DOC\2011-8 SA report\figures\001.MXD

PLOT DATE: 8/22/2011 ajf



RACER TRUST
 COLDWATER ROAD LANDFILL FACILITY
 FLINT, MICHIGAN

SITE LOCATION MAP



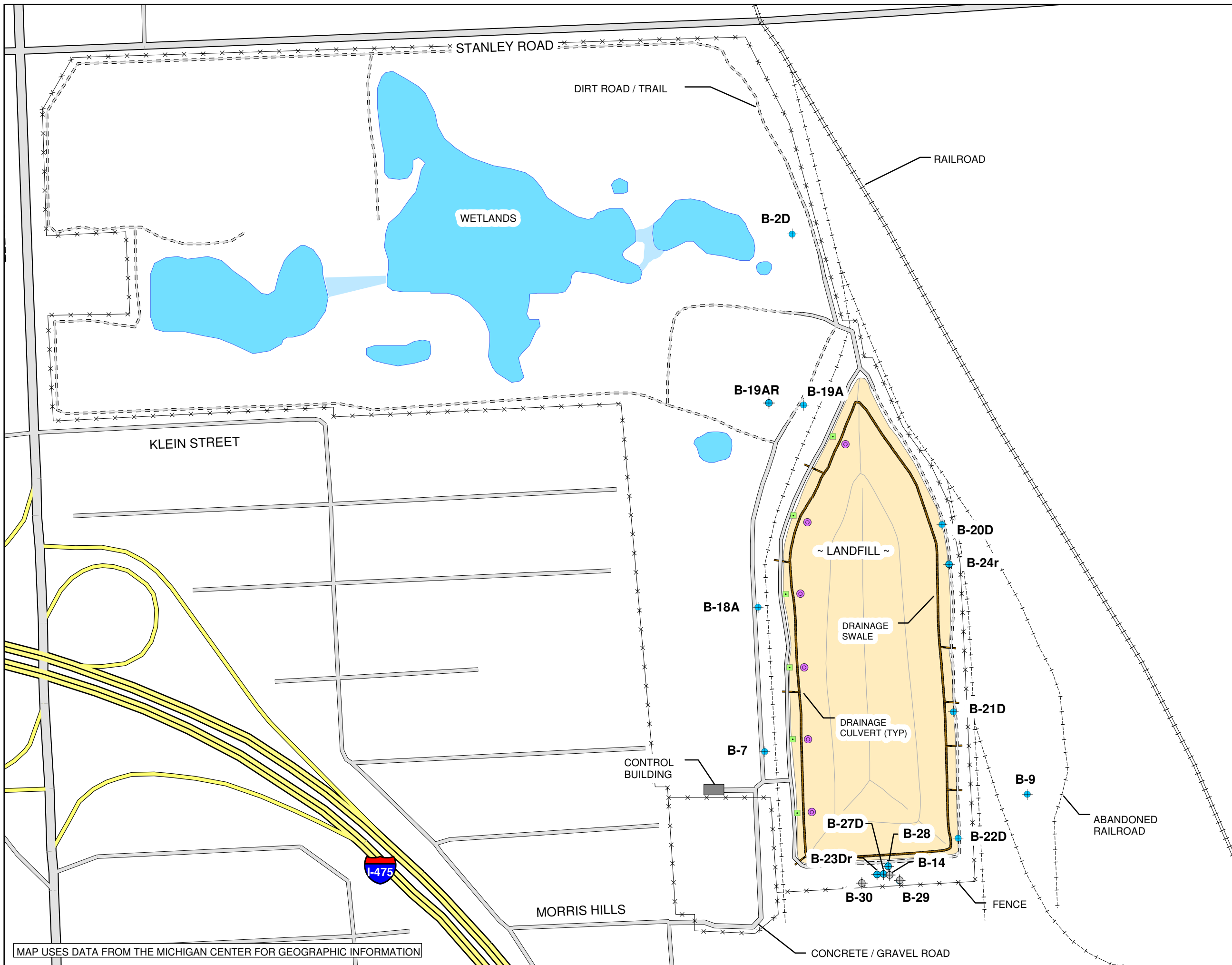






FIGURE 2

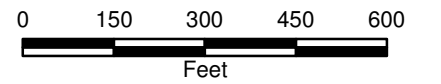


LEGEND

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

RACER TRUST
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

SITE LAYOUT



AUGUST 2011
15388/47850/002

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PLOT DATE: 8/22/2010 ajf

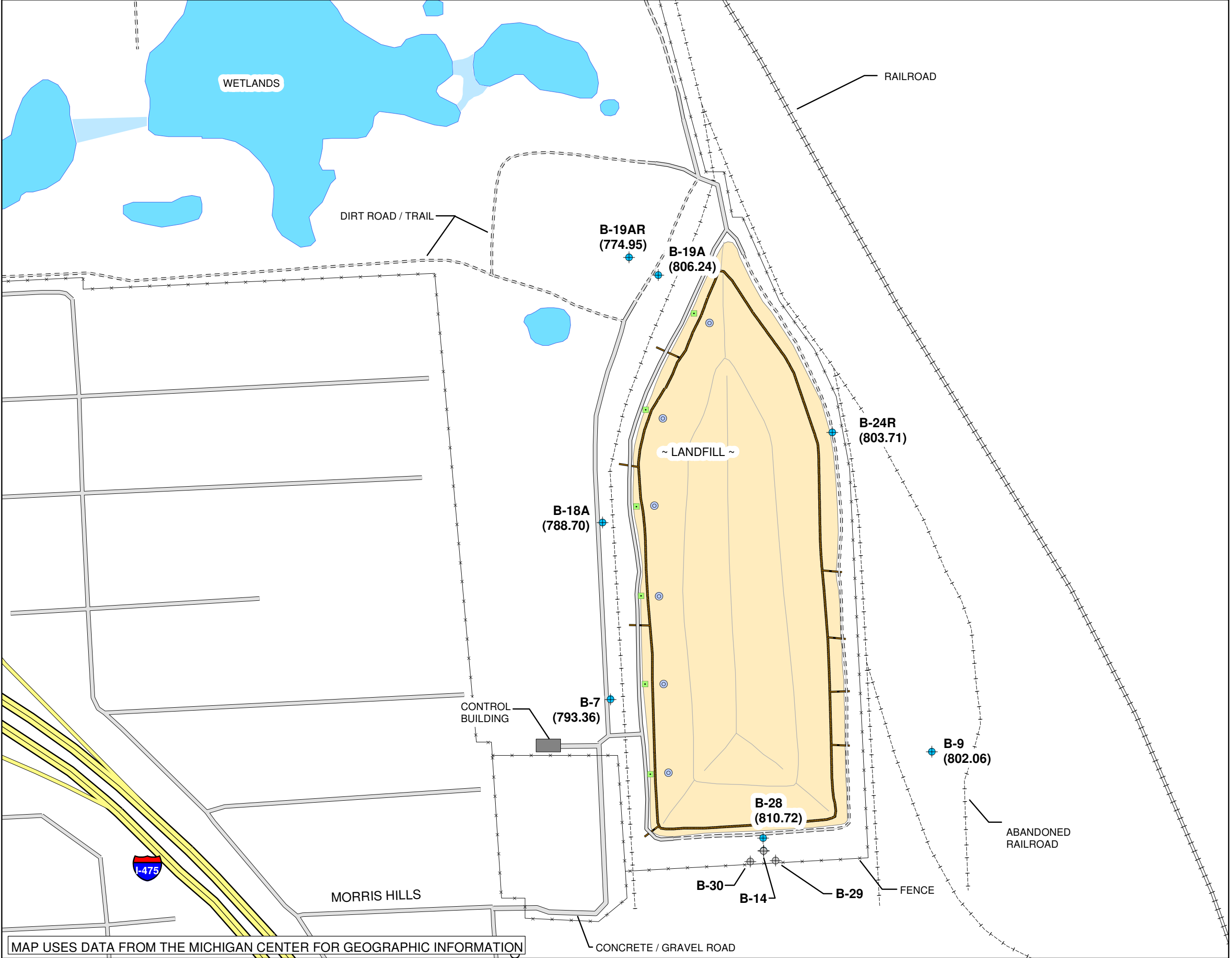





FIGURE 3

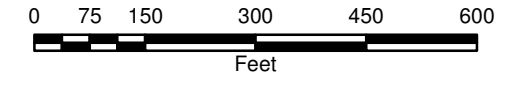


LEGEND

-  MONITORING WELL
-  (803.71) GROUNDWATER ELEVATION
-  ABANDONED WELL

RACER TRUST
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

**SHALLOW
GROUNDWATER
ELEVATION MAP
JUNE 21, 2011**



AUGUST 2011
15388/47850-003



MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

1078\PROJECTS\15388 RACER TRUST\47850\DCS\REPORTS\2011-8 SA FIGURES\004.MXD

PLOT DATE: 8/22/2011 ajf

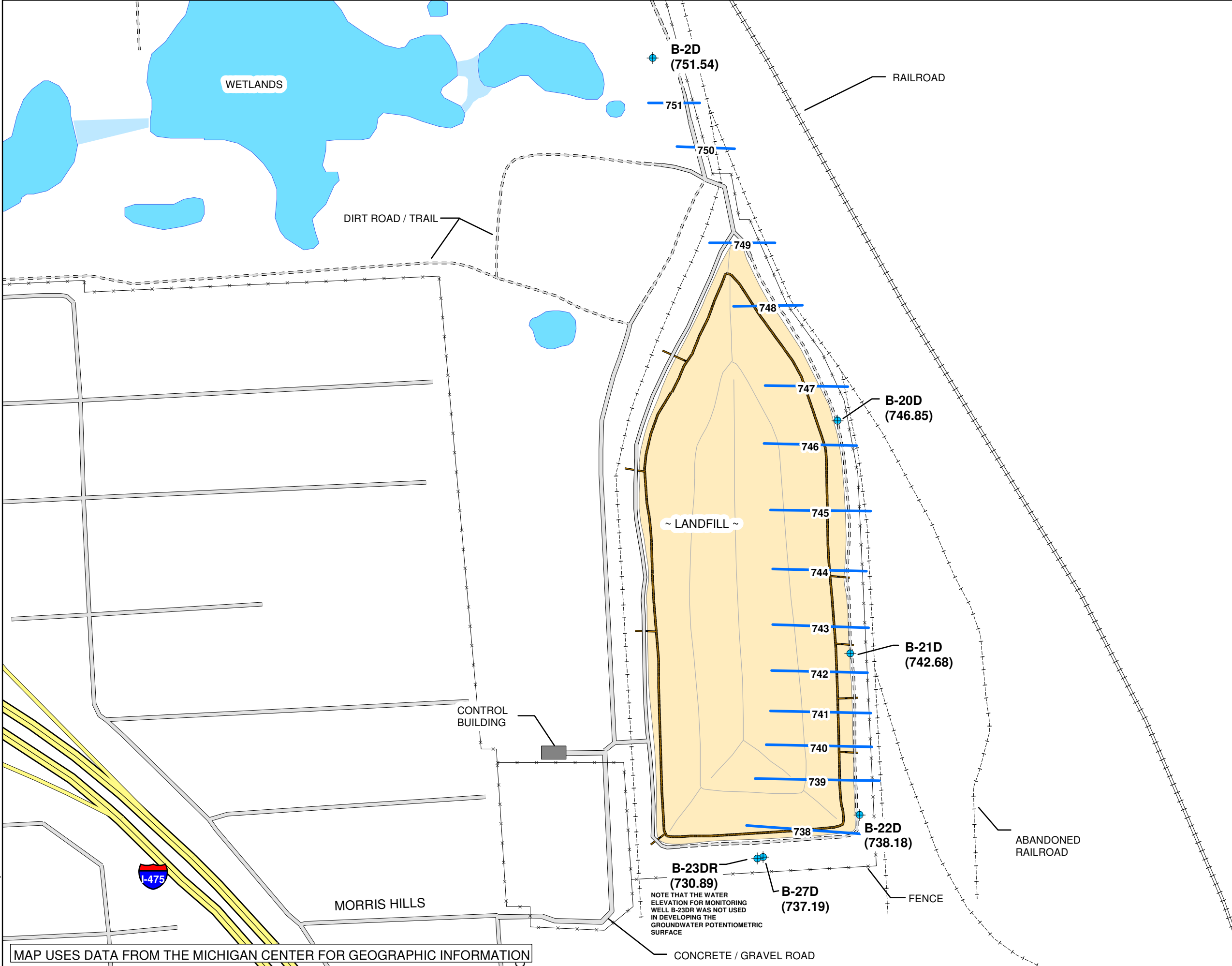


FIGURE 4

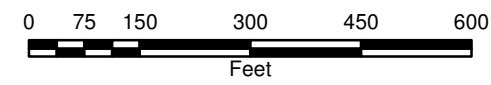


LEGEND

- MONITORING WELL
- (748.45) GROUNDWATER ELEVATION
- 740 GROUNDWATER POTENTIOMETRIC SURFACE ELEVATION

RACER TRUST
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

**DRIFT AQUIFER
GROUNDWATER
POTENTIOMETRIC
SURFACE MAP
JUNE 21, 2011**



AUGUST 2011
15388/47850-004



MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

**B-23DR
(730.89)**
NOTE THAT THE WATER ELEVATION FOR MONITORING WELL B-23DR WAS NOT USED IN DEVELOPING THE GROUNDWATER POTENTIOMETRIC SURFACE

**B-27D
(737.19)**

**B-22D
(738.18)**

**B-21D
(742.68)**

**B-20D
(746.85)**

**B-2D
(751.54)**

APPENDIX A
Sampling Procedures

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

TABLE OF CONTENTS

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.

APPENDIX B
Groundwater Sampling Logs

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/21/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / SMD

Weather cloudy 80
 Well # B-2D
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 72.97 ft.
 Depth to Water * 53.44 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 1/2 gal.(s)
 Did well go dry? No

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

Instrument Calibration:

Calibrated within Range

pH yes
 ORP yes
 Conductivity yes
 DO yes

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>1705</u> initial	<u>100</u>	initial <u>53.55</u>	initial <u>15.17</u>	initial <u>935</u>	initial <u>6.84</u>	initial <u>6.84</u>	initial <u>38.0</u>	initial <u>588</u>
<u>1710</u>	<u>120</u>	<u>53.55</u>	<u>18.79</u>	<u>930</u>	<u>5.78</u>	<u>6.89</u>	<u>37.4</u>	<u>588</u>
<u>1715</u>	<u>120</u>	<u>53.55</u>	<u>20.05</u>	<u>929</u>	<u>5.43</u>	<u>6.89</u>	<u>38.6</u>	<u>485</u>
<u>1720</u>	<u>120</u>	<u>53.55</u>	<u>19.606</u>	<u>899</u>	<u>4.48</u>	<u>6.91</u>	<u>35.8</u>	<u>301</u>
<u>1725</u>	<u>120</u>	<u>53.55</u>	<u>20.11</u>	<u>872</u>	<u>3.87</u>	<u>6.93</u>	<u>32.7</u>	<u>207</u>
<u>1730</u>	<u>120</u>	<u>53.55</u>	<u>20.44</u>	<u>850</u>	<u>3.36</u>	<u>6.95</u>	<u>29.2</u>	<u>152</u>
<u>1735</u>	<u>120</u>	<u>53.55</u>	<u>20.31</u>	<u>842</u>	<u>3.10</u>	<u>6.95</u>	<u>27.9</u>	<u>126</u>
<u>1740</u>	<u>120</u>	<u>53.55</u>	<u>20.17</u>	<u>834</u>	<u>2.95</u>	<u>6.96</u>	<u>27.4</u>	<u>103</u>
<u>1745</u>	<u>120</u>	<u>53.55</u>	<u>20.25</u>	<u>824</u>	<u>2.89</u>	<u>6.97</u>	<u>24.1</u>	<u>93.0</u>
<u>1750</u>	<u>120</u>	<u>53.55</u>	<u>20.25</u>	<u>818</u>	<u>2.64</u>	<u>6.99</u>	<u>22.8</u>	<u>83.1</u>
<u>1755</u>	<u>120</u>	<u>53.55</u>	<u>21.33</u>	<u>816</u>	<u>2.51</u>	<u>6.99</u>	<u>22.4</u>	<u>72.8</u>

Water Sample: 17020
 Time Collected _____

Physical Appearance at Start

Color Rust color
 Odor _____
 Turbidity (> 100 NTU) High
 Sheen/Free Product _____

Physical Appearance at Sampling

Color clear
 Odor _____
 Turbidity (> 100 NTU) Low
 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:

B-2D

Time	PUMP	DD	Temp	con	DO	pH	ORP	Turb
18:00	120	53.55	20.76	810	2.49	6.99	19.5	73.2
18:05	120	53.55	19.03	808	2.62	6.99	18.6	40.1
18:10	120	53.55	18.33	796	2.44	6.99	16.8	29.0
18:15	120	53.55	18.87	793	2.43	6.99	14.1	28.4
18:20	120	53.55	19.27	792	2.39	6.99	15.5	26.5

2/26/05

Date 6/22/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / ~~SM~~

Weather 75°, cloudy
 Well # 2-18A B-7
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 31.59 ft.
 Depth to Water * 21.84 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 1/2 gal.(s)
 Did well go dry? NO

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

Instrument Calibration:

Calibrated within Range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

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
0820	initial 80	initial 22.90	initial 16.31	initial 0.671	initial 4.48	initial 7.71	initial 78.7	initial 61
0825	80	23.67	14.13	0.714	4.01	7.54	74.0	24
0830	50	24.70	13.61	0.691	3.71	7.41	69.1	20
0835	50	25.90	13.66	0.683	3.01	7.33	60.9	34
0840	50	26.77	13.70	0.680	2.66	7.30	58.8	41
0845	50	27.80	13.71	0.679	2.60	7.28	56.3	40
0850	50	28.02	13.74	0.678	2.61	7.27	55.1	28
0855	50	28.66	13.77	0.674	2.58	7.27	54.3	40
0900	50	28.90	13.72	0.671	2.44	7.26	53.8	37
0905	50	28.94	13.73	0.671	2.46	7.26	52.1	35
0910	50	28.99	13.74	0.673	2.46	7.25	51.7	34

Water Sample: 0915
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color LT BROWN
 Odor NO
 Turbidity (> 100 NTU) LOW
 Sheen/Free Product NO

Color CLEAR
 Odor NO
 Turbidity (> 100 NTU) LOW
 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	2	125 ml Plastic	HNO ₃	1 yes / 1 NO
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	2	125 ml Plastic <u>40 ml</u>	H ₂ SO ₄	
TOX	1	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

Date 6/22/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / ~~SM~~

Weather 80° cloudy
 Well # B-9
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 25.35 ft.
 Depth to Water * 7.10 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ gal.(s)

Water Volume /ft. for:
 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

(Other, Specify) _____

* Measurements taken from Well Casing Protective Casing

Instrument Calibration:

Calibrated within Range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

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>1010</u> initial	<u>100</u>	initial <u>10.95</u>	initial <u>13.70</u>	initial <u>2.093</u>	initial <u>9.01</u>	initial <u>6.97</u>	initial <u>36.7</u>	initial <u>39</u>
<u>1015</u>	<u>100</u>	<u>11.90</u>	<u>12.86</u>	<u>2.052</u>	<u>3.10</u>	<u>6.87</u>	<u>28.6</u>	<u>23</u>
<u>1020</u>	<u>100</u>	<u>12.10</u>	<u>13.40</u>	<u>2.079</u>	<u>1.06</u>	<u>6.78</u>	<u>19.4</u>	<u>23</u>
<u>1025</u>	<u>100</u>	<u>13.01</u>	<u>13.49</u>	<u>2.091</u>	<u>0.84</u>	<u>6.72</u>	<u>18.5</u>	<u>21</u>
<u>1030</u>	<u>100</u>	<u>13.10</u>	<u>13.61</u>	<u>2.105</u>	<u>0.79</u>	<u>6.70</u>	<u>19.7</u>	<u>20</u>
<u>1035</u>	<u>100</u>	<u>13.22</u>	<u>12.73</u>	<u>2.132</u>	<u>0.80</u>	<u>6.70</u>	<u>16.4</u>	<u>19</u>
<u>1040</u>	<u>100</u>	<u>13.66</u>	<u>13.93</u>	<u>2.136</u>	<u>0.76</u>	<u>6.69</u>	<u>19.3</u>	<u>18</u>
<u>1045</u>	<u>100</u>	<u>13.71</u>	<u>13.96</u>	<u>2.139</u>	<u>0.70</u>	<u>6.69</u>	<u>19.9</u>	<u>20</u>
<u>1050</u>	<u>100</u>	<u>13.77</u>	<u>13.99</u>	<u>2.138</u>	<u>0.69</u>	<u>6.70</u>	<u>19.5</u>	<u>19</u>

Water Sample: 1055
 Time Collected _____

Physical Appearance at Start

Physical Appearance at Sampling

Color CLEAR
 Odor NO
 Turbidity (> 100 NTU) LOW
 Sheen/Free Product NO

Color CLEAR
 Odor NO
 Turbidity (> 100 NTU) LOW
 Sheen/Free Product NO

Samples collected:

Analyses	# Bottles	Bottle Size/Type	Preservative	Field Filtered
VOCs	<u>2</u>	40 ml Glass	HCL	
Dissolved Metals - Cu, Cr, Ni, Zn, Fe, Mn, Na	<u>2</u>	125 ml Plastic	HNO ₃	<u>1 yes / 1 NO</u>
Cyanide	<u>1</u>	125 ml Plastic	NAOH	
Phenols	<u>1</u>	125 ml Plastic	H ₂ SO ₄	
TOC	<u>2</u>	<u>125 ml Plastic</u> <u>46ml glass</u>	H ₂ SO ₄	
TOX	<u>1</u>	125 ml Plastic	H ₂ SO ₄	
Sulfate, Chlorides, SpC	<u>1</u>	500 ml Plastic	None	

Notes: _____

Date 6/21/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / ~~SMO~~

Weather 85°, CLOUDY
 Well # B-18A
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 43.4 ft.
 Depth to Water * 23.55 ~~21.84~~ ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 yes
 ORP yes
 Conductivity yes
 DO yes

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>12:55</u> initial	<u>100</u>	<u>24.65</u> initial	<u>15.35</u> initial	<u>0.836</u> initial	<u>5.92</u> initial	<u>7.45</u> initial	<u>108.1</u> initial	<u>7</u> initial
<u>13:00</u>	<u>100</u>	<u>25.25</u>	<u>17.71</u>	<u>0.879</u>	<u>3.68</u>	<u>7.25</u>	<u>75.2</u>	<u>7</u>
<u>13:05</u>	<u>100</u>	<u>26.01</u>	<u>18.21</u>	<u>0.888</u>	<u>3.40</u>	<u>7.23</u>	<u>71.1</u>	<u>7</u>
<u>13:10</u>	<u>100</u>	<u>26.33</u>	<u>18.51</u>	<u>0.895</u>	<u>3.26</u>	<u>7.20</u>	<u>66.0</u>	<u>6</u>
<u>13:15</u>	<u>100</u>	<u>26.81</u>	<u>18.59</u>	<u>0.900</u>	<u>3.13</u>	<u>7.17</u>	<u>67.0</u>	<u>6</u>
<u>13:20</u>	<u>100</u>	<u>26.90</u>	<u>18.71</u>	<u>0.908</u>	<u>3.09</u>	<u>7.16</u>	<u>64.9</u>	<u>7</u>
<u>13:25</u>	<u>100</u>	<u>26.94</u>	<u>18.74</u>	<u>0.910</u>	<u>3.02</u>	<u>7.16</u>	<u>63.3</u>	<u>7</u>
<u>13:30</u>	<u>100</u>	<u>26.99</u>	<u>18.77</u>	<u>0.912</u>	<u>3.00</u>	<u>7.16</u>	<u>62.3</u>	<u>8</u>

Water Sample:

Time Collected 13:35

Physical Appearance at Start

Physical Appearance at Sampling

Color clear
 Odor NO
 Turbidity (> 100 NTU) LOW
 Sheen/Free Product NO

Color clear
 Odor NO
 Turbidity (> 100 NTU) LOW
 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	2	125 ml Plastic	HNO ₃	1 yes / NO 1
Cyanide	1	125 ml Plastic <u>flask</u>	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	2	125 ml Plastic <u>40ml</u>	H ₂ SO ₄	
TOX	1	125 ml Plastic <u>flask</u>	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

Date 6/22/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS/SMD

Weather 80° SUN
 Well # B-19Ar
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 46.5 ft.
 Depth to Water * 38.20 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 Yes
 ORP Yes
 Conductivity Yes
 DO Yes

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
1540	initial 100	initial 39.30	initial 14.40	initial 885	initial 3.78	initial 7.92	initial -21.1	initial 241
1545	80	39.44	16.25	875	3.39	7.93	-18.5	137
1550	80	39.65	17.53	868	3.30	8.06	-23.7	131
1555	80	39.90	17.48	824	3.53	8.17	-26.2	77.9
1600	80	40.21	17.09	828	3.75	8.14	-27.0	61.2
1605	80	40.46	17.51	885	3.41	7.80	-18.6	44.6
1610	80	40.54	17.38	894	3.33	7.69	-9.7	33.7
1615	80	40.68	17.22	920	3.38	7.53	-3.9	32.8
1620	80	40.80	17.17	937	3.30	7.43	2.5	25.4
1625	80	40.91	17.18	940	3.28	7.39	6.9	24.9
1630	80	40.77	17.15	941	3.25	7.35	8.0	23.6

Water Sample:

Time Collected 1630

Physical Appearance at Start

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

Physical Appearance at Sampling

Color Clear
 Odor _____
 Turbidity (> 100 NTU) Low
 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:

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date: 6/22/11
 Site Name: Coldwater Road Landfill Weather: cloudy
 Location: Flint, MI Well #: B-20D
 Project No.: _____ Evacuation Method: submersible pump
 Personnel: KBS / GMD Sampling Method: Low-flow

Well Information:

Depth of Well * 84.97 ft. Water Volume /ft. for:
 Depth to Water * 69.76 ft. X 2" Diameter Well = 0.163 X LWC
 Length of Water Column _____ ft. 4" Diameter Well = 0.653 X LWC
 Volume of Water in Well _____ gal.(s) 6" Diameter Well = 1.469 X LWC

Volume removed before sampling 2 1/2 gal.(s)
 Did well go dry? NO

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

Instrument Calibration:

Calibrated within Range

pH yes
 ORP yes
 Conductivity yes
 DO yes

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
910	initial 100	initial 69.85	initial 17.19	initial 1125	initial 7.70	initial 6.85	initial 211.4	initial 158
915	100	70.05	16.82	1085	4.98	6.87	188.9	82
920	100	70.05	16.40	1046	2.46	7.06	14.3	48
925	100	70.05	16.06	1028	1.26	7.17	-50.1	150
930	100	70.08	15.91	1017	0.85	7.21	-66.8	207
935	100	70.08	16.31	1013	0.68	7.22	-74.7	265
940	100	70.08	16.69	1012	0.52	7.24	-81.5	329
945	100	70.08	16.57	1014	0.45	7.24	-83.5	286
950	100	70.08	16.44	1019	0.40	7.23	-85.0	212
955	100	70.10	15.02	1022	0.43	7.24	84.6	187
1000	100	70.10	14.70	1017	0.41	7.24	-83.8	154

Water Sample: 1090
 Time Collected

Physical Appearance at Start

Color: Slightly cloudy
 Odor: _____
 Turbidity (> 100 NTU): None
 Sheen/Free Product: _____

Physical Appearance at Sampling

Color: clear
 Odor: _____
 Turbidity (> 100 NTU): Low
 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:

B-20D

Time	Pump	OD	Temp	con	DO	pH	ORP	Turbo
1005	100	70.10	14.77	1015	0.44	7.25	-82.6	146
1010	100	70.10	14.93	1016	0.42	7.24	-82.8	106
1015	100	70.10	15.17	1015	0.35	7.24	-85.5	78.6
1020	100	70.10	15.00	1015	0.36	7.24	-85.8	55.4
1025	100	70.10	14.92	1013	0.36	7.23	-86.1	46.5
1030	100	70.10	15.08	1012	0.33	7.23	-86.9	35.42
1035	100	70.10	15.34	1012	0.30	7.23	-87.8	33.7
1040	100	70.10	15.45	1011	0.29	7.23	-88.4	32.2

1040

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/22/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / SMB

Weather Mostly Sunny
 Well # B-21D
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 97.44 ft.
 Depth to Water * 79.92 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 1/2 gal.(s)
 Did well go dry? No

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

Instrument Calibration:

Calibrated within Range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

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
1305 initial	100	81.15	23.00	680	7.54	7.49	17.6	226
1310	100	81.33	22.82	673	6.10	7.40	-5.7	225
1315	100	81.33	24.17	669	3.63	7.34	-11.7	253
1320	100	81.33	23.54	676	3.47	7.32	-24.6	587
1325	100	81.44	20.07	673	3.02	7.33	-57.9	706
1330	100	81.44	19.405	669	1.75	7.35	-67.4	588
1335	100	81.50	19.09	672	0.84	7.40	-84.7	469
1340	100	81.50	20.30	675	0.71	7.40	-88.0	489
1345	100	81.50	20.85	680	0.600	7.41	-92.0	373
1350	100	81.50	21.36	688	0.53	7.41	-94.9	377
1355	100	81.50	22.20	702	0.48	7.43	-100.9	347

Water Sample:

Time Collected 1440

Physical Appearance at Start

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

Physical Appearance at Sampling

Color Slightly cloudy
 Odor _____
 Turbidity (> 100 NTU) Low/Med
 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:

B-210

Time	PUMP	OD	Temp	Con	DO	PH	ORP	Turb
1400 <i>van</i>	100	81.50	19.29	723	0.51	7.48	-107.4	280
1405	100	81.50	20.28	727	0.48	7.51	-112.3	255
1410	100	81.50	21.38	730	0.43	7.50	-115.7	241
1415	100	81.50	21.66	741	0.38	7.49	-116.2	281
1420	100	81.50	21.96	741	0.36	7.47	-116.1	221
1425	100	81.50	20.52	751	0.40	7.46	-114.1	117
1430	100	81.50	20.00	757	0.43	7.46	-114.4	96
1435	100	81.50	19.54	759	0.40	7.44	-113.6	91
1440	100	81.50	19.47	757	0.39	7.41	-112.3	87.8

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 10/21/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / SMD

Weather cloudy 80°F
 Well # B-22D
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 97.24 ft.
 Depth to Water * 85.55 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 1/2 gal.(s)
 Did well go dry? No

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

Instrument Calibration:

Calibrated within Range
 pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

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>1530</u> initial	<u>100</u>	initial <u>85.60</u>	initial <u>15.85</u>	initial <u>715</u>	initial <u>3.60</u>	initial <u>7.33</u>	initial <u>-57.7</u>	initial <u>11.6</u>
<u>1535</u>	<u>100</u>	<u>85.65</u>	<u>16.20</u>	<u>717</u>	<u>1.01</u>	<u>7.33</u>	<u>-76.9</u>	<u>70.8</u>
<u>1540</u>	<u>100</u>	<u>85.78</u>	<u>16.35</u>	<u>721</u>	<u>0.70</u>	<u>7.35</u>	<u>-87.7</u>	<u>60.0</u>
<u>1545</u>	<u>100</u>	<u>85.78</u>	<u>16.50</u>	<u>722</u>	<u>0.66</u>	<u>7.34</u>	<u>-92.3</u>	<u>63.9</u>
<u>1550</u>	<u>100</u>	<u>85.78</u>	<u>15.35</u>	<u>720</u>	<u>0.59</u>	<u>7.34</u>	<u>-96.6</u>	<u>51.1</u>
<u>1555</u>	<u>100</u>	<u>85.78</u>	<u>16.69</u>	<u>722</u>	<u>0.45</u>	<u>7.34</u>	<u>-97.3</u>	<u>49.8</u>
<u>1600</u>	<u>100</u>	<u>85.78</u>	<u>18.99</u>	<u>725</u>	<u>0.39</u>	<u>7.34</u>	<u>-101.3</u>	<u>43.2</u>
<u>1605</u>	<u>100</u>	<u>85.78</u>	<u>17.55</u>	<u>727</u>	<u>0.45</u>	<u>7.36</u>	<u>-109.8</u>	<u>42.1</u>
<u>1610</u>	<u>100</u>	<u>85.78</u>	<u>17.16</u>	<u>725</u>	<u>0.43</u>	<u>7.36</u>	<u>-104.2</u>	<u>39.7</u>
<u>1615</u>	<u>100</u>	<u>85.78</u>	<u>17.01</u>	<u>725</u>	<u>0.42</u>	<u>7.35</u>	<u>-103.5</u>	<u>38.5</u>

Water Sample: 1615
 Time Collected

Physical Appearance at Start	<u>Slightly cloudy</u>	Physical Appearance at Sampling	<u>clear</u>
Color	<u>-</u>	Color	<u>-</u>
Odor	<u>-</u>	Odor	<u>-</u>
Turbidity (> 100 NTU)	<u>MED</u>	Turbidity (> 100 NTU)	<u>Low</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:

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/21/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / SMD

Weather cloudy 80°F
 Well # B-23Dr
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 107 ft.
 Depth to Water * 82.83 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 gal.(s)
 Did well go dry? No

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

Instrument Calibration:

Calibrated within Range

pH Yes
 ORP Yes
 Conductivity Yes
 DO Yes

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
1325	initial 100	initial 82.83	initial 20.34	initial 733	initial 8.06	initial 7.37	initial -22.9	initial 669
1330	100	82.83	19.30	733	6.04	7.29	-41.5	842
1335	100	82.83	18.93	703	3.61	7.29	-56.3	273
1340	100	82.83	19.41	763	2.71	7.30	-65.0	192
1345	100	82.83	19.09	767	2.44	7.29	-70.5	145
1350	100	82.83	19.93	764	1.81	7.28	-73.5	106
1355	100	82.83	19.63	767	1.49	7.28	-81.2	84.7
1400	100	82.83	19.45	765	1.31	7.39	-93.8	73.7
1405	100	82.83	18.68	765	0.99	7.32	-75.7	94.5
1410	100	82.83	18.35	766	0.91	7.33	-97.2	43.8
1415	100	82.83	18.00	765	0.80	7.33	-97.2	41.3

Water Sample: 1415
 Time Collected

Physical Appearance at Start

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

Physical Appearance at Sampling

Color clear
 Odor _____
 Turbidity (> 100 NTU) LOW
 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:

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/11/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / ~~SM~~

Weather 85°, cloudy
 Well # B-24r
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 29.5 ft.
 Depth to Water * 13.60 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 yes
 ORP yes
 Conductivity yes
 DO yes

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
14:30 initial	100	initial 14.5	initial 15.93	initial 0.901	initial 3.77	initial 7.57	initial -74.1	initial 392
14:35	100	15.11	16.57	0.906	0.92	7.32	-73.0	73
14:40	100	15.94	17.21	0.928	0.53	7.21	-69.7	53
14:45	100	16.41	17.44	0.935	0.36	7.14	-62.7	29
14:50	100	16.43	17.49	0.935	0.35	7.13	-62.1	23
14:55	100	16.46	17.51	0.937	0.34	7.11	-61.6	21
15:00	100	16.71	17.47	0.940	0.30	7.11	-60.1	11
15:05	100	16.75	17.51	0.943	0.30	7.10	-59.1	12
15:10	100	16.77	17.54	0.947	0.27	7.11	-59.2	9

Water Sample: 15:15
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color 60 EY / BROWN
 Odor NO
 Turbidity (> 100 NTU) HIGH
 Sheen/Free Product NO

Color clear
 Odor NO
 Turbidity (> 100 NTU) LOW
 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	2	125 ml Plastic	HNO ₃	(yes / NO)
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic	H ₂ SO ₄	
TOC	2	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-3 COLLECTED

Date 6/21/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS+SMD

Weather cloudy
 Well # B-27D
 Evacuation Method submersible pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 89 ft.
 Depth to Water * 77.17 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 1/2 gal.(s)
 Did well go dry? NO

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

Instrument Calibration:

Calibrated within Range
 pH yes
 ORP yes
 Conductivity yes
 DO yes

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
945	initial 100	initial 77.41	initial 17.15	initial 653	initial 2.91	initial 7.24	initial -79.5	initial 1100
950	100	77.51	16.84	642	1.13	7.37	-121.5	1100
955	100	77.51	15.66	642	0.82	7.43	-143.0	1080
1000	100	77.51	15.22	641	0.43	7.52	-167.3	924
1005	100	77.51	15.34	641	0.35	7.55	-178.8	1000
1010	100	77.51	15.41	642	0.36	7.56	-180.3	986
1015	100	77.51	13.84	643	0.30	7.60	-187.0	863
1020	100	77.57	14.05	642	0.31	7.58	-182.3	667
1025	100	77.57	14.91	643	0.29	7.50	-178.3	441
1030	100	77.51	15.50	645	0.29	7.55	-170.0	424
1035	100	77.51	16.13	647	0.28	7.52	-163.2	397

Water Sample:
 Time Collected 1120

Physical Appearance at Start
 Color cloudy
 Odor _____
 Turbidity (> 100 NTU) High
 Sheen/Free Product _____

Physical Appearance at Sampling
 Color mostly clear
 Odor _____
 Turbidity (> 100 NTU) low/med
 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:

B-270

Time	PUMP	DO	Temp	Con	DO	PH	ORP	Turb
1040	100	77.57	15.04	649	0.30	7.54	-159.2	347
1045	100	77.51	14.75	649	0.26	7.54	-154.0	286
1050	100	77.51	14.62	647	0.26	7.54	-154.3	191
1055	100	77.51	14.86	648	0.25	7.54	-150.4	194
1100	100	77.51	15.07	648	0.22	7.51	-133.9	125
1105	100	77.51	15.32	650	0.22	7.49	-125.2	101
1110	100	77.51	15.48	650	0.25	7.48	-123.8	68.6
1115	100	77.51	15.58	651	0.22	7.48	-121.0	68.0
1120	100	77.51	15.62	652	0.24	7.47	-117.4	64.2

O'Brien & Gere Engineers, Inc.

Ground Water Sampling Log

Date 6/21/11
 Site Name Coldwater Road Landfill
 Location Flint, MI
 Project No. _____
 Personnel KBS / SMD

Weather 75°, cloudy
 Well # B-28
 Evacuation Method peristaltic pump
 Sampling Method Low-flow

Well Information:

Depth of Well * 31.5 ft.
 Depth to Water * 7.35 ft.
 Length of Water Column _____ ft.
 Volume of Water in Well _____ 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 YES
 ORP YES
 Conductivity YES
 DO YES

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>0935</u>	initial <u>100</u>	initial <u>7.85</u>	initial <u>13.80</u>	initial <u>0.653</u>	initial <u>4.10</u>	initial <u>8.11</u>	initial <u>-34.3</u>	initial <u>12</u>
<u>0940</u>	<u>100</u>	<u>9.40</u>	<u>14.26</u>	<u>0.654</u>	<u>1.13</u>	<u>7.56</u>	<u>-42.6</u>	<u>4</u>
<u>0945</u>	<u>100</u>	<u>10.19</u>	<u>14.40</u>	<u>0.820</u>	<u>1.16</u>	<u>7.39</u>	<u>-49.9</u>	<u>3</u>
<u>0950</u>	<u>100</u>	<u>10.55</u>	<u>14.38</u>	<u>0.818</u>	<u>0.89</u>	<u>7.34</u>	<u>-56.1</u>	<u>3</u>
<u>0955</u>	<u>100</u>	<u>10.81</u>	<u>14.47</u>	<u>0.815</u>	<u>0.64</u>	<u>7.30</u>	<u>-46.8</u>	<u>2</u>
<u>1000</u>	<u>100</u>	<u>10.85</u>	<u>14.39</u>	<u>0.816</u>	<u>0.62</u>	<u>7.26</u>	<u>-34.1</u>	<u>2</u>
<u>1005</u>	<u>100</u>	<u>10.91</u>	<u>14.15</u>	<u>0.814</u>	<u>0.53</u>	<u>7.25</u>	<u>-31.3</u>	<u>2</u>
<u>1010</u>	<u>100</u>	<u>10.95</u>	<u>14.10</u>	<u>0.813</u>	<u>0.50</u>	<u>7.24</u>	<u>-31.0</u>	<u>2</u>
<u>1015</u>	<u>100</u>	<u>11.10</u>	<u>14.08</u>	<u>0.812</u>	<u>0.49</u>	<u>7.23</u>	<u>-29.8</u>	<u>2</u>

Water Sample: 1020
 Time Collected

Physical Appearance at Start

Physical Appearance at Sampling

Color Clear
 Odor NO
 Turbidity (> 100 NTU) Low
 Sheen/Free Product NO

Color Clear
 Odor NO
 Turbidity (> 100 NTU) Low
 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	2	125 ml Plastic	HNO ₃	1 yes / 1 NO
Cyanide	1	125 ml Plastic	NAOH	
Phenols	1	125 ml Plastic <u>glass</u>	H ₂ SO ₄	
TOC	2	125 ml Plastic <u>40 ml glass</u>	H ₂ SO ₄	
TOX (<u>headspace free</u>)	1	125 ml Plastic <u>glass</u>	H ₂ SO ₄	
Sulfate, Chlorides, SpC	1	500 ml Plastic	None	

Notes:

APPENDIX C
Analytical Results



Analytical Laboratory Report

Revised Report

Report ID: S49108.01(03)
Generated on 07/28/2011
Replaces report S49108.01(02) generated on 07/26/2011

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
37000 Grand River Ave.
Suite 260
Farmington, MI48335

Phone: 248-477-5701 FAX:
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): S49108.01-S49108.09
Project: Coldwater Road Landfill Semi-Annual Sampling
Collected Date: 06/21/2011
Submitted Date/Time: 06/22/2011 14:00
Sampled by: Kevin Schneider
P.O. #: MLT1103

Original Chromium results were false positives due to carbon interferences.

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.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Revised Report

Sample Summary (9 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49108.01	B-28	Groundwater	06/21/2011 10:20
S49108.02	B-27D	Groundwater	06/21/2011 11:20
S49108.03	B-18A	Groundwater	06/21/2011 13:35
S49108.04	B-23Dr	Groundwater	06/21/2011 14:15
S49108.05	B-24r	Groundwater	06/21/2011 15:15
S49108.06	B-22	Groundwater	06/21/2011 16:15
S49108.07	B-2D	Groundwater	06/21/2011 18:20
S49108.08	Dup-3	Groundwater	06/21/2011 00:01
S49108.09	TB-2	Quality Control	06/21/2011 00:01



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.01
 Sample Tag: B-28
 Collected Date/Time: 06/21/2011 10:20
 Matrix: Groundwater
 COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
2	125ml Amber	H2SO4	Yes	4.4	IR
2	40ml Glass	HCL	Yes	4.4	IR
1	125ml Plastic	NaOH	Yes	4.4	IR

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

Extraction / Prep.

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	12	mg/L	10	300.0	06/24/11 15:30	JDP	16887-00-6	
Conductivity	837	umhos/cm		120.1	06/30/11 14:08	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/27/11 11:08	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/24/11 15:20	JKB		
Sulfate	80	mg/L	10	300.0	06/24/11 15:30	JDP	14808-79-8	
TOC	1.5	mg/L	0.50	5310C	07/12/11 18:54	Trmx		O

Metals

Chromium, Dissolved	0.009	mg/L	0.005	200.8	06/29/11 15:35	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 14:50	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:35	PER	7440-50-8	
Iron, Dissolved	1.38	mg/L	0.02	200.8	06/29/11 15:35	PER	7439-89-6	
Manganese, Dissolved	0.130	mg/L	0.005	200.8	06/29/11 15:35	PER	7439-96-5	
Nickel, Dissolved	0.005	mg/L	0.005	200.8	06/29/11 15:35	PER	7440-02-0	
Sodium	23.4	mg/L	1.0	200.8	06/28/11 13:45	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:35	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 15:46	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 15:46	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 15:46	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 15:46	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 15:46	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 15:46	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.01 (continued)

Sample Tag: B-28

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 15:46	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 15:46	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 15:46	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 15:46	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/01/11 08:15	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.02
 Sample Tag: B-27D
 Collected Date/Time: 06/21/2011 11:20
 Matrix: Groundwater
 COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
2	125ml Amber	H2SO4	Yes	4.4	IR
2	40ml Glass	HCL	Yes	4.4	IR
1	125ml Plastic	NaOH	Yes	4.4	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	Not detected	mg/L	5	300.0	06/24/11 17:56	JDP	16887-00-6	
Conductivity	640	umhos/cm		120.1	06/30/11 14:12	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/27/11 11:16	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/24/11 15:22	JKB		
Sulfate	19	mg/L	10	300.0	06/24/11 15:42	JDP	14808-79-8	
TOC	1.5	mg/L	0.50	5310C	07/12/11 19:00	Trmx		O

Metals

Chromium, Dissolved	0.009	mg/L	0.005	200.8	06/29/11 15:36	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 14:53	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:36	PER	7440-50-8	
Iron, Dissolved	1.37	mg/L	0.02	200.8	06/29/11 15:36	PER	7439-89-6	
Manganese, Dissolved	0.029	mg/L	0.005	200.8	06/29/11 15:36	PER	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:36	PER	7440-02-0	
Sodium	34.6	mg/L	1.0	200.8	06/28/11 13:47	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:36	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 16:04	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 16:04	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 16:04	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 16:04	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 16:04	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 16:04	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.02 (continued)

Sample Tag: B-27D

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 16:04	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 16:04	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 16:04	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 16:04	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/01/11 08:32	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.03
 Sample Tag: B-18A
 Collected Date/Time: 06/21/2011 13:35
 Matrix: Groundwater
 COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
2	125ml Amber	H2SO4	Yes	4.4	IR
2	40ml Glass	HCL	Yes	4.4	IR
1	125ml Plastic	NaOH	Yes	4.4	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	17	mg/L	10	300.0	06/24/11 15:55	JDP	16887-00-6	
Conductivity	1,031	umhos/cm		120.1	06/30/11 14:14	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/27/11 11:18	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/24/11 15:24	JKB		
Sulfate	103	mg/L	10	300.0	06/24/11 15:55	JDP	14808-79-8	
TOC	1.2	mg/L	0.50	5310C	07/12/11 19:08	Trmx		O

Metals

Chromium, Dissolved	0.010	mg/L	0.005	200.8	06/29/11 15:38	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 14:56	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:38	PER	7440-50-8	
Iron, Dissolved	0.24	mg/L	0.02	200.8	06/29/11 15:38	PER	7439-89-6	
Manganese, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:38	PER	7439-96-5	
Nickel, Dissolved	0.005	mg/L	0.005	200.8	06/29/11 15:38	PER	7440-02-0	
Sodium	46.1	mg/L	1.0	200.8	06/28/11 13:48	PER	7440-23-5	
Zinc, Dissolved	0.012	mg/L	0.005	200.8	06/29/11 15:38	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 16:22	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 16:22	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 16:22	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 16:22	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 16:22	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 16:22	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.03 (continued)

Sample Tag: B-18A

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 16:22	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 16:22	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 16:22	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 16:22	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/01/11 08:53	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.04
 Sample Tag: B-23Dr
 Collected Date/Time: 06/21/2011 14:15
 Matrix: Groundwater
 COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
2	125ml Amber	H2SO4	Yes	4.4	IR
2	40ml Glass	HCL	Yes	4.4	IR
1	125ml Plastic	NaOH	Yes	4.4	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	22	mg/L	10	300.0	06/24/11 16:07	JDP	16887-00-6	
Conductivity	721	umhos/cm		120.1	06/30/11 14:16	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/27/11 11:20	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/24/11 15:26	JKB		
Sulfate	48	mg/L	10	300.0	06/24/11 16:07	JDP	14808-79-8	
TOC	1.2	mg/L	0.50	5310C	07/12/11 19:16	Trmx		O

Metals

Chromium, Dissolved	0.008	mg/L	0.005	200.8	06/29/11 15:40	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 14:58	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:40	PER	7440-50-8	
Iron, Dissolved	1.52	mg/L	0.02	200.8	06/29/11 15:40	PER	7439-89-6	
Manganese, Dissolved	0.037	mg/L	0.005	200.8	06/29/11 15:40	PER	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:40	PER	7440-02-0	
Sodium	22.4	mg/L	1.0	200.8	06/28/11 13:49	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:40	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 16:40	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 16:40	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 16:40	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 16:40	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 16:40	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 16:40	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.04 (continued)

Sample Tag: B-23Dr

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 16:40	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 16:40	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 16:40	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 16:40	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/01/11 09:48	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.05
 Sample Tag: B-24r
 Collected Date/Time: 06/21/2011 15:15
 Matrix: Groundwater
 COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
2	125ml Amber	H2SO4	Yes	4.4	IR
2	40ml Glass	HCL	Yes	4.4	IR
1	125ml Plastic	NaOH	Yes	4.4	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	45	mg/L	10	300.0	06/24/11 16:18	JDP	16887-00-6	
Conductivity	1,136	umhos/cm		120.1	06/30/11 14:18	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/27/11 11:22	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/24/11 15:28	JKB		
Sulfate	206	mg/L	10	300.0	06/24/11 16:18	JDP	14808-79-8	
TOC	3.7	mg/L	0.50	5310C	07/12/11 19:24	Trmx		O

Metals

Chromium, Dissolved	0.010	mg/L	0.005	200.8	06/29/11 15:41	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 15:12	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:41	PER	7440-50-8	
Iron, Dissolved	1.13	mg/L	0.02	200.8	06/29/11 15:41	PER	7439-89-6	
Manganese, Dissolved	0.255	mg/L	0.005	200.8	06/29/11 15:41	PER	7439-96-5	
Nickel, Dissolved	0.006	mg/L	0.005	200.8	06/29/11 15:41	PER	7440-02-0	
Sodium	51.7	mg/L	1.0	200.8	06/28/11 13:51	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:41	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 16:58	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 16:58	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 16:58	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 16:58	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 16:58	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 16:58	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.05 (continued)

Sample Tag: B-24r

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 16:58	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 16:58	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 16:58	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 16:58	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/01/11 10:08	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.06
 Sample Tag: B-22
 Collected Date/Time: 06/21/2011 16:15
 Matrix: Groundwater
 COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
2	125ml Amber	H2SO4	Yes	4.4	IR
2	40ml Glass	HCL	Yes	4.4	IR
1	125ml Plastic	NaOH	Yes	4.4	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	Not detected	mg/L	5	300.0	06/24/11 18:07	JDP	16887-00-6	
Conductivity	705	umhos/cm		120.1	06/30/11 14:20	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/27/11 11:24	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/24/11 15:30	JKB		
Sulfate	50	mg/L	10	300.0	06/24/11 16:30	JDP	14808-79-8	
TOC	1.3	mg/L	0.50	5310C	07/12/11 19:32	Trmx		O

Metals

Chromium, Dissolved	0.009	mg/L	0.005	200.8	06/29/11 15:43	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 15:15	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:43	PER	7440-50-8	
Iron, Dissolved	1.46	mg/L	0.02	200.8	06/29/11 15:43	PER	7439-89-6	
Manganese, Dissolved	0.030	mg/L	0.005	200.8	06/29/11 15:43	PER	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:43	PER	7440-02-0	
Sodium	27.3	mg/L	1.0	200.8	06/28/11 13:52	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:43	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 17:16	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 17:16	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 17:16	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 17:16	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 17:16	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 17:16	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.06 (continued)

Sample Tag: B-22

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 17:16	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 17:16	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 17:16	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 17:16	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/01/11 10:29	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.07
 Sample Tag: B-2D
 Collected Date/Time: 06/21/2011 18:20
 Matrix: Groundwater
 COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
2	125ml Amber	H2SO4	Yes	4.4	IR
2	40ml Glass	HCL	Yes	4.4	IR
1	125ml Plastic	NaOH	Yes	4.4	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	6	mg/L	5	300.0	06/24/11 18:19	JDP	16887-00-6	
Conductivity	742	umhos/cm		120.1	06/30/11 14:22	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/27/11 11:26	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/24/11 15:32	JKB		
Sulfate	57	mg/L	10	300.0	06/24/11 16:41	JDP	14808-79-8	
TOC	2.9	mg/L	0.50	5310C	07/12/11 19:40	Trmx		O

Metals

Chromium, Dissolved	0.009	mg/L	0.005	200.8	06/29/11 15:45	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 15:17	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:45	PER	7440-50-8	
Iron, Dissolved	0.25	mg/L	0.02	200.8	06/29/11 15:45	PER	7439-89-6	
Manganese, Dissolved	0.055	mg/L	0.005	200.8	06/29/11 15:45	PER	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:45	PER	7440-02-0	
Sodium	16.9	mg/L	1.0	200.8	06/28/11 13:53	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:45	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 17:34	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 17:34	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 17:34	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 17:34	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 17:34	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 17:34	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.07 (continued)

Sample Tag: B-2D

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 17:34	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 17:34	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 17:34	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 17:34	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/01/11 11:21	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.08
 Sample Tag: Dup-3
 Collected Date/Time: 06/21/2011 00:01
 Matrix: Groundwater
 COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.4	IR
1	500ml Plastic	None	Yes	4.4	IR
2	40ml Glass	H2SO4	Yes	4.4	IR
2	125ml Amber	H2SO4	Yes	4.4	IR
2	40ml Glass	HCL	Yes	4.4	IR
1	125ml Plastic	NaOH	Yes	4.4	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	45	mg/L	10	300.0	06/24/11 16:53	JDP	16887-00-6	
Conductivity	1,137	umhos/cm		120.1	06/30/11 14:24	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/27/11 11:28	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	06/24/11 15:34	JKB		
Sulfate	206	mg/L	10	300.0	06/24/11 16:53	JDP	14808-79-8	
TOC	3.7	mg/L	0.50	5310C	07/12/11 19:48	Trmx		O

Metals

Chromium, Dissolved	0.008	mg/L	0.005	200.8	06/29/11 15:46	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 15:20	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:46	PER	7440-50-8	
Iron, Dissolved	1.07	mg/L	0.02	200.8	06/29/11 15:46	PER	7439-89-6	
Manganese, Dissolved	0.255	mg/L	0.005	200.8	06/29/11 15:46	PER	7439-96-5	
Nickel, Dissolved	0.006	mg/L	0.005	200.8	06/29/11 15:46	PER	7440-02-0	
Sodium	52.0	mg/L	1.0	200.8	06/28/11 13:55	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:46	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 17:52	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 17:52	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 17:52	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 17:52	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 17:52	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 17:52	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.08 (continued)

Sample Tag: Dup-3

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 17:52	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 17:52	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 17:52	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 17:52	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/01/11 11:42	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49108.09
Sample Tag: TB-2
Collected Date/Time: 06/21/2011 00:01
Matrix: Quality Control
COC Reference: 47570

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	4.4	IR

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

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/28/11 18:10	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/28/11 18:10	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/28/11 18:10	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/28/11 18:10	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/28/11 18:10	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/28/11 18:10	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/28/11 18:10	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/28/11 18:10	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/28/11 18:10	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/28/11 18:10	WAT	75-01-4	



2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-6333
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

47570

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Knatz
 COMPANY: O'Brien & Gere
 ADDRESS: 37000 Grand River Ave Ste 260
 CITY: Farmington Hills STATE: MI ZIP CODE: 48335
 PHONE NO: 248-977-5701 FAX NO: _____
 E-MAIL ADDRESS: _____

CONTACT NAME: _____
 COMPANY: _____
 ADDRESS: _____
 CITY: _____ STATE: _____ ZIP CODE: _____
 PHONE NO: _____ FAX NO: _____
 ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME: ceddiker Rd landfill semi annual sampling
 TURNAROUND TIME REQUIRED: 24 HR 48 HR 72 HR STANDARD OTHER
 DELIVERABLES REQUIRED: STANDARD LEVEL II LEVEL III OTHER

SAMPLE FR/RT: Kevin Schneider PLEASE PRINT SIGN NAME: K. SCL
 SPECIAL INSTRUCTIONS/NOTES: Metals Anal: Cu, Cr, Ni, Zn, Fe, Mn

MATRIX CODE	GW-GROUNDWATER SL-SLUDGE	WW-WASTEWATER O-OIL	S-SOIL A-AIR	L-LIQUID W-WASTE	SD-SOLID M-MISC	# Containers & Preservatives							
MERIT LAB NO.	YEAR DATE TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION			MATRIX	# OF BOTTLES	NO	HCL	HNO3	H2SO4	NaOH	NaOH	OTHER
4910801	6/21/11	1020	B-28			GW	10	1	2	2	4	1	
.02		1120	B-27D			GW	10	1	2	2	4	1	
.03		1335	B-18A			GW	10	1	2	2	4	1	
.04		1415	B-23Dr			GW	10	1	2	2	4	1	
.05		1515	B-24r			GW	10	1	2	2	4	1	
.06		1615	B-22			GW	10	1	2	2	4	1	
.07		1820	B-20			GW	10	1	2	2	4	1	
.08			DUP-3			GW	10	1	2	2	4	1	
.09			TB-2			DC	1	1					

VOCS	TOC	TOX Phenols	Cyanide	Sulfate	chlorides specific	Conductivity	Dissolved Metals	Selenium
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X								

RELINQUISHED BY: [Signature] DATE: 6/22/11 TIME: 1230
 RECEIVED BY: [Signature] DATE: 6-22-11 TIME: 1230

RELINQUISHED BY: [Signature] DATE: 6-22-11 TIME: 1400
 RECEIVED BY: [Signature] DATE: 6-22-11 TIME: 1400
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 SEAL NO. _____ SEAL INTACT YES NO INITIALS _____
 NOTES: _____ TEMP. ON ARRIVAL: 4.7

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica North Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-1402-1
Client Project/Site: 49108

For:
Merit Laboratories
2680 E Lansing Drive
East Lansing, Michigan 48823

Attn: Paula Shaw



Authorized for release by:
07/07/2011 07:16:17 AM

Denise Heckler
Project Manager II
denise.heckler@testamericainc.com



LINKS

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TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	5
Sample Summary	6
Detection Summary	7
Client Sample Results	8
QC Sample Results	10
QC Association Summary	11
Lab Chronicle	12
Certification Summary	14
Chain of Custody	15
Receipt Checklists	18

Definitions/Glossary

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis.
EPA	United States Environmental Protection Agency
ND	Not Detected above the reporting level.
MDL	Method Detection Limit
RL	Reporting Limit
RE, RE1 (etc.)	Indicates a Re-extraction or Reanalysis of the sample.
%R	Percent Recovery
RPD	Relative Percent Difference, a measure of the relative difference between two points.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
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- 10
- 11
- 12
- 13
- 14

Case Narrative

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Job ID: 240-1402-1

Laboratory: TestAmerica North Canton

Narrative

Job Narrative
240-1402-1

Comments

No additional comments.

Receipt

All samples were received in good condition within temperature requirements.

General Chemistry

No analytical or quality issues were noted.

- 1
- 2
- 3
- 4
- 5
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- 8
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- 11
- 12
- 13
- 14

Method Summary

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Method	Method Description	Protocol	Laboratory
9020B	Organic Halides, Total (TOX)	SW846	TAL NC

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NC = TestAmerica North Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



Sample Summary

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-1402-1	49108.01	Water	06/21/11 10:20	06/23/11 09:40
240-1402-2	49108.02	Water	06/21/11 11:20	06/23/11 09:40
240-1402-3	49108.03	Water	06/21/11 13:35	06/23/11 09:40
240-1402-4	49108.04	Water	06/21/11 14:15	06/23/11 09:40
240-1402-5	49108.05	Water	06/21/11 15:15	06/23/11 09:40
240-1402-6	49108.06	Water	06/21/11 16:15	06/23/11 09:40
240-1402-7	49108.07	Water	06/21/11 18:20	06/23/11 09:40
240-1402-8	49108.08	Water	06/21/11 00:00	06/23/11 09:40

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- 14

Detection Summary

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Client Sample ID: 49108.01

Lab Sample ID: 240-1402-1

No Detections.

Client Sample ID: 49108.02

Lab Sample ID: 240-1402-2

No Detections.

Client Sample ID: 49108.03

Lab Sample ID: 240-1402-3

No Detections.

Client Sample ID: 49108.04

Lab Sample ID: 240-1402-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Halogens, Total Organic	31		30	17	ug/L	1		9020B	Total/NA

Client Sample ID: 49108.05

Lab Sample ID: 240-1402-5

No Detections.

Client Sample ID: 49108.06

Lab Sample ID: 240-1402-6

No Detections.

Client Sample ID: 49108.07

Lab Sample ID: 240-1402-7

No Detections.

Client Sample ID: 49108.08

Lab Sample ID: 240-1402-8

No Detections.

Client Sample Results

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Client Sample ID: 49108.01

Date Collected: 06/21/11 10:20
Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/01/11 08:15	1

Client Sample ID: 49108.02

Date Collected: 06/21/11 11:20
Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/01/11 08:32	1

Client Sample ID: 49108.03

Date Collected: 06/21/11 13:35
Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/01/11 08:53	1

Client Sample ID: 49108.04

Date Collected: 06/21/11 14:15
Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	31		30	17	ug/L			07/01/11 09:48	1

Client Sample ID: 49108.05

Date Collected: 06/21/11 15:15
Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-5

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/01/11 10:08	1

Client Sample ID: 49108.06

Date Collected: 06/21/11 16:15
Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/01/11 10:29	1

Client Sample ID: 49108.07

Date Collected: 06/21/11 18:20
Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-7

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/01/11 11:21	1

Client Sample Results

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Client Sample ID: 49108.08

Lab Sample ID: 240-1402-8

Date Collected: 06/21/11 00:00

Matrix: Water

Date Received: 06/23/11 09:40

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/01/11 11:42	1

- 1
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QC Sample Results

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Method: 9020B - Organic Halides, Total (TOX)

Lab Sample ID: MB 240-6938/7
Matrix: Water
Analysis Batch: 6938

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Halogens, Total Organic	30	U	30	17	ug/L			06/30/11 10:45	1

Lab Sample ID: LCS 240-6938/8
Matrix: Water
Analysis Batch: 6938

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec Limits

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QC Association Summary

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

General Chemistry

Analysis Batch: 6938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-6938/7	Method Blank	Total/NA	Water	9020B	
LCS 240-6938/8	Lab Control Sample	Total/NA	Water	9020B	
240-1402-1	49108.01	Total/NA	Water	9020B	
240-1402-2	49108.02	Total/NA	Water	9020B	
240-1402-3	49108.03	Total/NA	Water	9020B	
240-1402-4	49108.04	Total/NA	Water	9020B	
240-1402-5	49108.05	Total/NA	Water	9020B	
240-1402-6	49108.06	Total/NA	Water	9020B	
240-1402-7	49108.07	Total/NA	Water	9020B	
240-1402-8	49108.08	Total/NA	Water	9020B	

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Lab Chronicle

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Client Sample ID: 49108.01

Date Collected: 06/21/11 10:20

Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	6938	07/01/11 08:15	TH	TAL NC

Client Sample ID: 49108.02

Date Collected: 06/21/11 11:20

Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	6938	07/01/11 08:32	TH	TAL NC

Client Sample ID: 49108.03

Date Collected: 06/21/11 13:35

Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	6938	07/01/11 08:53	TH	TAL NC

Client Sample ID: 49108.04

Date Collected: 06/21/11 14:15

Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	6938	07/01/11 09:48	TH	TAL NC

Client Sample ID: 49108.05

Date Collected: 06/21/11 15:15

Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	6938	07/01/11 10:08	TH	TAL NC

Client Sample ID: 49108.06

Date Collected: 06/21/11 16:15

Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	6938	07/01/11 10:29	TH	TAL NC

Client Sample ID: 49108.07

Date Collected: 06/21/11 18:20

Date Received: 06/23/11 09:40

Lab Sample ID: 240-1402-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	6938	07/01/11 11:21	TH	TAL NC

Lab Chronicle

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Client Sample ID: 49108.08

Lab Sample ID: 240-1402-8

Date Collected: 06/21/11 00:00

Matrix: Water

Date Received: 06/23/11 09:40

<u>Prep Type</u>	<u>Batch Type</u>	<u>Batch Method</u>	<u>Run</u>	<u>Dilution Factor</u>	<u>Batch Number</u>	<u>Prepared Or Analyzed</u>	<u>Analyst</u>	<u>Lab</u>
Total/NA	Analysis	9020B		1	6938	07/01/11 11:42	TH	TAL NC

Laboratory References:

TAL NC = TestAmerica North Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

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- 12
- 13
- 14

Certification Summary

Client: Merit Laboratories
Project/Site: 49108

TestAmerica Job ID: 240-1402-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica North Canton	ACCLASS	DoD ELAP		ADE-1437
TestAmerica North Canton	California	NELAC	9	01144CA
TestAmerica North Canton	Connecticut	State Program	1	PH-0590
TestAmerica North Canton	Florida	NELAC	4	E87225
TestAmerica North Canton	Georgia	Georgia EPD	4	N/A
TestAmerica North Canton	Illinois	NELAC	5	200004
TestAmerica North Canton	Kansas	NELAC	7	E-10336
TestAmerica North Canton	Kentucky	State Program	4	58
TestAmerica North Canton	Minnesota	NELAC	5	039-999-348
TestAmerica North Canton	Nevada	State Program	9	OH-000482008A
TestAmerica North Canton	New Jersey	NELAC	2	OH001
TestAmerica North Canton	New York	NELAC	2	10975
TestAmerica North Canton	New York	NELAC	2	10975
TestAmerica North Canton	Ohio	OVAP	5	CL0024
TestAmerica North Canton	Pennsylvania	NELAC	3	68-00340
TestAmerica North Canton	USDA	USDA		P330-08-00123
TestAmerica North Canton	West Virginia	West Virginia DEP	3	210
TestAmerica North Canton	Wisconsin	State Program	5	999518190

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.





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

C.O.C. PAGE #

62846

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME		CONTACT NAME	
COMPANY		COMPANY	
ADDRESS		ADDRESS	
CITY	STATE	CITY	STATE
PHONE NO.	FAX NO.	PHONE NO.	FAX NO.
E-MAIL ADDRESS	QUOTE NO.		
PROJECT NO./NAME	SAMPLER(S) - PLEASE PRINT/SIGN NAME		
TURNOURROUND TIME REQUIRED	<input type="checkbox"/> 24 HR	<input type="checkbox"/> 48 HR	<input checked="" type="checkbox"/> STANDARD
DELIVERABLES REQUIRED	<input checked="" type="checkbox"/> STANDARD	<input type="checkbox"/> LEVEL II	<input type="checkbox"/> LEVEL III
MATRIX CODE:	GW=GROUNDWATER SL=SLUDGE	WW=WASTEWATER O=OIL	S=SOIL A=AIR
	L=LIQUID W=WASTE	SD=SOLID M=MISC	
MERIT LAB NO.	YEAR	DATE	TIME

MATERIAL	MATERIAL	MATERIAL	MATERIAL	MATERIAL	MATERIAL	MATERIAL	MATERIAL	MATERIAL	MATERIAL	ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)		SPECIAL INSTRUCTIONS/NOTES
										# Containers & Preservatives	OTHER	
	6-22-11	1020	1120		49108.01	6W				X		Sub'd to Test America
	1335	1415	1515		.02					X		
	1615	1820			.03					X		
					.04					X		
					.05					X		
					.06					X		
					.07					X		
					.08					X		
					.09					X		NO Sample. (PS)

RELINQUISHED BY: SIGNATURE/Organization	DATE	TIME	RELINQUISHED BY: SIGNATURE/Organization	DATE	TIME
<i>[Signature]</i>	6-22-11	1600	<i>[Signature]</i>	6-23-11	1540
RECEIVED BY: SIGNATURE/Organization	DATE	TIME	RECEIVED BY: SIGNATURE/Organization	DATE	TIME
<i>[Signature]</i>	6-23-11	0940	<i>[Signature]</i>		
RELINQUISHED BY: SIGNATURE/Organization	DATE	TIME	RELINQUISHED BY: SIGNATURE/Organization	DATE	TIME
RECEIVED BY: SIGNATURE/Organization	DATE	TIME	RECEIVED BY: SIGNATURE/Organization	DATE	TIME

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



TestAmerica Cooler Receipt Form/Narrative

Lot Number: _____

North Canton Facility

Client Merit Project 49108 By Qu Clark

Cooler Received on 6-23-11 Opened on 6-23-11 (Signature)

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

TestAmerica Cooler # NO# 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 4.5 °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# 100110-HNO₃; Sulfuric Acid Lot# 110410-H₂SO₄; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH₃COO)₂ZN/NaOH. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

Login Sample Receipt Checklist

Client: Merit Laboratories

Job Number: 240-1402-1

Login Number: 1402

List Source: TestAmerica North Canton

List Number: 1

Creator: Sutek, Nick

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



July 20, 2011

Merit Laboratories, Inc.
Attn: Ms. Paula Shaw
2680 East Lansing Road
East Lansing, MI 48823

Project: Analytical Services

Dear Ms. Paula Shaw,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
1107093	07/08/2011	49108

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,



Gary L. Wood
Project Chemist

Enclosures(s)

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107093
Project:	Analytical Services	Description:	49108
Client Sample ID:	49108.01	Sampled:	06/21/11 10:20
Lab Sample ID:	1107093-01	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.5	0.50	mg/L	1	SM 5310 C 20th	07/12/11 18:54	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107093
Project:	Analytical Services	Description:	49108
Client Sample ID:	49108.02	Sampled:	06/21/11 11:20
Lab Sample ID:	1107093-02	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.5	0.50	mg/L	1	SM 5310 C 20th	07/12/11 19:00	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107093
Project:	Analytical Services	Description:	49108
Client Sample ID:	49108.03	Sampled:	06/21/11 13:35
Lab Sample ID:	1107093-03	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.2	0.50	mg/L	1	SM 5310 C 20th	07/12/11 19:08	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107093
Project:	Analytical Services	Description:	49108
Client Sample ID:	49108.04	Sampled:	06/21/11 14:15
Lab Sample ID:	1107093-04	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.2	0.50	mg/L	1	SM 5310 C 20th	07/12/11 19:16	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107093
Project:	Analytical Services	Description:	49108
Client Sample ID:	49108.05	Sampled:	06/21/11 15:15
Lab Sample ID:	1107093-05	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	3.7	0.50	mg/L	1	SM 5310 C 20th	07/12/11 19:24	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107093
Project:	Analytical Services	Description:	49108
Client Sample ID:	49108.06	Sampled:	06/21/11 16:15
Lab Sample ID:	1107093-06	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.3	0.50	mg/L	1	SM 5310 C 20th	07/12/11 19:32	GEH	1107129

*See Statement of Data Qualifications

Page 7 of 11

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107093
Project:	Analytical Services	Description:	49108
Client Sample ID:	49108.07	Sampled:	06/21/11 18:20
Lab Sample ID:	1107093-07	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	2.9	0.50	mg/L	1	SM 5310 C 20th	07/12/11 19:40	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107093
Project:	Analytical Services	Description:	49108
Client Sample ID:	49108.08	Sampled:	06/21/11 00:00
Lab Sample ID:	1107093-08	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	3.7	0.50	mg/L	1	SM 5310 C 20th	07/12/11 19:48	GEH	1107129

*See Statement of Data Qualifications

QUALITY CONTROL REPORT
Physical/Chemical Parameters by EPA/APHA/ASTM Methods

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
---------	--------------	------------	--------	------	--------------	----------------	-----	------------	----

Analyte: Carbon, Total Organic/SM 5310 C 20th

QC Batch: 1107129 (General Inorganic Prep)						Analyzed: 07/12/2011 By: GEH			
Method Blank			<0.50	mg/L					0.50
Laboratory Control Sample		2.00	2.19	mg/L	109	84-118			0.50
Laboratory Control Sample Duplicate			2.18	mg/L			0.4	20	0.50

STATEMENT OF DATA QUALIFICATIONS**Physical/Chemical Parameters by EPA/APHA/ASTM Methods**

Qualification: Due to insufficient sample volume received, no matrix QC is available with this batch of samples.

Analysis: SM 5310 C 20th

Sample/Analyte:	1107093-01	49108.01	Carbon, Total Organic
	1107093-02	49108.02	Carbon, Total Organic
	1107093-03	49108.03	Carbon, Total Organic
	1107093-04	49108.04	Carbon, Total Organic
	1107093-05	49108.05	Carbon, Total Organic
	1107093-06	49108.06	Carbon, Total Organic
	1107093-07	49108.07	Carbon, Total Organic
	1107093-08	49108.08	Carbon, Total Organic

E-1107093



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www.meritlabs.com

C.O.C. PAGE # 1 OF 1

63481

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Paula Shaw
 COMPANY: Merit Labs
 ADDRESS: [Blank]
 CITY: [Blank] STATE: [Blank] ZIP CODE: [Blank]
 PHONE NO.: [Blank] FAX NO.: [Blank]
 E-MAIL ADDRESS: [Blank] QUOTE NO.: [Blank]

CONTACT NAME: Julie Teague
 COMPANY: [Blank]
 ADDRESS: [Blank]
 CITY: [Blank] STATE: [Blank] ZIP CODE: [Blank]
 PHONE NO.: [Blank] FAX NO.: [Blank]
 ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME: 49108
 TURNAROUND TIME REQUIRED: 24 HR 48 HR 72 HR STANDARD
 DELIVERABLES REQUIRED: STANDARD LEVEL II LEVEL III OTHER
 MATRIX CODE: GW-GROUNDWATER SL-SLUDGE WW-WASTEWATER O-OIL S-SOIL A-AIR L-LIQUID W-WASTE SD-SOLID M-MISC
 SAMPLE(S) - PLEASE PRINT/SIGN NAME: [Blank]

SPECIAL INSTRUCTIONS/NOTES: *Sub'd to Trimatrix

MERIT LAB NO.	YEAR		IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCL	HNO ₃	H ₂ SO ₄	NaOH	MeOH	OTHER	# Containers & Preservatives	TOC	INITIALS	DATE	TIME
	DATE	TIME															
01	6-21	1020	49108.01	GW	1												
02	1120		.02		1												
03	1335		.03		1												
04	1415		.04		1												
05	1515		.05		1												
06	1615		.06		1												
07	1820		.07		1												
08			.08		1												

*Historical Results
0-10mg/L

RELINQUISHED BY: [Signature]
 SIGNATURE/ORGANIZATION: [Blank]
 RECEIVED BY: [Signature]
 SIGNATURE/ORGANIZATION: [Blank]
 DATE: 7-7-11
 TIME: 1600

RELINQUISHED BY: [Signature]
 SIGNATURE/ORGANIZATION: [Blank]
 RECEIVED BY: [Signature]
 SIGNATURE/ORGANIZATION: [Blank]
 SEAL NO.: [Blank]
 SEAL INTACT: YES NO
 INITIALS: [Blank]
 DATE: 7/11/11
 TIME: 6:70

SAMPLE RECEIVING / LOG-IN CHECKLIST



Client: <u>Merit</u>	Work Order #: <u>1107093</u>
Receipt Record Page/Line #	Project Chemist
	Sample #s

Recorded by: (Initials/Date) <u>LA 7/8/11</u>	<input checked="" type="checkbox"/> Cooler <input type="checkbox"/> Box <input type="checkbox"/> Other _____	Qty Received <u>1</u>	<input checked="" type="checkbox"/> IR Gun (#202) Thermometer Used <input type="checkbox"/> Digital Thermometer (#54) <input type="checkbox"/> See Additional Cooler Information Form <input type="checkbox"/> Other (# _____)
--	--	--------------------------	--

Cooler #	Time	Cooler #	Time	Cooler #	Time	Cooler #	Time
<u>-</u>	<u>1058</u>						
Custody Seals: <input checked="" type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		Custody Seals: <input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		Custody Seals: <input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		Custody Seals: <input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact	
Coolant Location: <input checked="" type="checkbox"/> Dispersed / <input checked="" type="checkbox"/> Top / <input checked="" type="checkbox"/> Middle / <input type="checkbox"/> Bottom		Coolant Location: <input type="checkbox"/> Dispersed / <input type="checkbox"/> Top / <input type="checkbox"/> Middle / <input type="checkbox"/> Bottom		Coolant Location: <input type="checkbox"/> Dispersed / <input type="checkbox"/> Top / <input type="checkbox"/> Middle / <input type="checkbox"/> Bottom		Coolant Location: <input type="checkbox"/> Dispersed / <input type="checkbox"/> Top / <input type="checkbox"/> Middle / <input type="checkbox"/> Bottom	
Coolant/Temperature Taken Via: <input checked="" type="checkbox"/> Loose ice / Avg 2-3 containers <input checked="" type="checkbox"/> Bagged ice / Avg 2-3 containers <input type="checkbox"/> Blue ice / Avg 2-3 containers <input checked="" type="checkbox"/> None / Avg 2-3 containers		Coolant/Temperature Taken Via: <input type="checkbox"/> Loose ice / Avg 2-3 containers <input type="checkbox"/> Bagged ice / Avg 2-3 containers <input type="checkbox"/> Blue ice / Avg 2-3 containers <input checked="" type="checkbox"/> None / Avg 2-3 containers		Coolant/Temperature Taken Via: <input type="checkbox"/> Loose ice / Avg 2-3 containers <input type="checkbox"/> Bagged ice / Avg 2-3 containers <input type="checkbox"/> Blue ice / Avg 2-3 containers <input checked="" type="checkbox"/> None / Avg 2-3 containers		Coolant/Temperature Taken Via: <input type="checkbox"/> Loose ice / Avg 2-3 containers <input type="checkbox"/> Bagged ice / Avg 2-3 containers <input type="checkbox"/> Blue ice / Avg 2-3 containers <input checked="" type="checkbox"/> None / Avg 2-3 containers	
Alternate Temperature Taken Via: <input type="checkbox"/> Temperature Blank (TB) <input type="checkbox"/> 1 Container		Alternate Temperature Taken Via: <input type="checkbox"/> Temperature Blank (TB) <input type="checkbox"/> 1 Container		Alternate Temperature Taken Via: <input type="checkbox"/> Temperature Blank (TB) <input type="checkbox"/> 1 Container		Alternate Temperature Taken Via: <input type="checkbox"/> Temperature Blank (TB) <input type="checkbox"/> 1 Container	
Recorded °C	Correction Factor °C	Actual °C	Recorded °C	Correction Factor °C	Actual °C	Recorded °C	Correction Factor °C
Temp Blank:			Temp Blank:			Temp Blank:	
TB location: Representative / Not Representative		TB location: Representative / Not Representative		TB location: Representative / Not Representative		TB location: Representative / Not Representative	
1	<u>6.7</u>	<u>-</u>	<u>6.7</u>	1			
2	<u>6.0</u>	<u>-</u>	<u>6.0</u>	2			
3	<u>7.3</u>	<u>-</u>	<u>7.3</u>	3			
Average °C		Average °C		Average °C		Average °C	
<input type="checkbox"/> Cooler ID on COC?		<u>6.7</u>		<input type="checkbox"/> Cooler ID on COC?		<input type="checkbox"/> Cooler ID on COC?	
<input type="checkbox"/> VOC Trip Blank received?				<input type="checkbox"/> VOC Trip Blank received?		<input type="checkbox"/> VOC Trip Blank received?	

If any shaded areas checked, complete Sample Receiving Non-Conformance Form

Paperwork Received No COC Received

N/A	Yes	No	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Chain of Custody record(s)?
	<input type="checkbox"/>	<input type="checkbox"/>	If No, COC Initiated By _____
	<input type="checkbox"/>	<input type="checkbox"/>	Rec'd for Lab Signed/Date/Time?
	<input type="checkbox"/>	<input type="checkbox"/>	Shipping document?
	<input type="checkbox"/>	<input type="checkbox"/>	Other _____

COC ID #s

TriMatrix

Other (Name or ID#) _____

Check COC for Accuracy No analysis requested

Yes	No	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID matches COC?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample Date and Time matches COC?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Container type completed on COC?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	All container types indicated are received?

Sample Condition Summary Non-TriMatrix containers, see Notes

N/A	Yes	No	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Broken containers/lids?
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Missing or incomplete labels?
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Illegible information on labels?
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Low volume received?
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inappropriate containers received?
	<input type="checkbox"/>	<input type="checkbox"/>	VOC vials / TOX containers have headspace?
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Extra sample locations / containers not listed on COC?

Check Sample Preservation

N/A	Yes	No	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Average sample temperature ≤ 6° C?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Completed Sample Preservation Verification Form?
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Samples preserved correctly?
			If "No", added orange tag?
			Received pre-preserved VOC soils?
			<input type="checkbox"/> MeOH <input type="checkbox"/> Na ₂ SO ₄

Check for Short Hold-Time Prep/Analyses

- Bacteriological
- Air Bags
- EnCores / Methanol Pre-Preserved
- Formaldehyde/Aldehyde
- Green-tagged containers
- Yellow/White-tagged 1L ambers (SV Prep-Lab)

AFTER HOURS ONLY:
COPIES OF COC TO LAB AREA(S)

NONE RECEIVED

RECEIVED, COCs TO LAB(S)

Notes

Trip Blank received Trip Blank not listed on COC

No COC received, Proj. Chemist reviewed (Init/Date) _____

No analysis requested, Proj. Chemist completed (Init/Date) _____

Cooler Received (Date/Time): <u>7/8/11 10:00</u>	Paperwork Delivered (Date/Time): <u>7/8/11 11:20</u>	≤ 1 Hour Goal Met? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
--	--	--



Analytical Laboratory Report

Revised Report

Report ID: S49128.01(03)
Generated on 07/28/2011
Replaces report S49128.01(02) generated on 07/26/2011

Report to

Attention: Clifford Yantz
O'Brien & Gere Engineers, Inc.
37000 Grand River Ave.
Suite 260
Farmington, MI 48335

Phone: 248-477-5701 FAX:
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): S49128.01-S49128.07
Project: Coldwater Road Landfill Semi-Annual Sampling
Collected Date: 06/22/2011
Submitted Date/Time: 06/23/2011 14:40
Sampled by: Kevin Schneider
P.O. #: MLT1103

Original Chromium results were false positives due to carbon interferences.

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.

Laboratory Certifications:

Michigan DNRE (#9956), Ohio EPA (#CL0002), NELAC NY (#11814), NELAC FL (#E871045), WBENC (#2005110032)
Some analytes reported may not be certified. Full certification lists are available upon request.

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Revised Report

Sample Summary (7 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S49128.01	EB-1	Groundwater	06/22/2011 08:00
S49128.02	B-7	Groundwater	06/22/2011 09:15
S49128.03	B-20D	Groundwater	06/22/2011 10:40
S49128.04	B-9	Groundwater	06/22/2011 10:55
S49128.05	B-21D	Groundwater	06/22/2011 14:40
S49128.06	B-19Ar	Groundwater	06/22/2011 16:30
S49128.07	TB-3	Groundwater	06/22/2011 00:01



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.01
 Sample Tag: EB-1
 Collected Date/Time: 06/22/2011 08:00
 Matrix: Groundwater
 COC Reference: 47569

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
2	125ml Amber	H2SO4	Yes	4.5	IR
2	40ml Glass	HCL	Yes	4.5	IR
1	125ml Plastic	NaOH	Yes	4.5	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	Not detected	mg/L	2	300.0	06/29/11 07:09	JDP	16887-00-6	
Conductivity	3	umhos/cm		120.1	06/30/11 14:26	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/29/11 11:38	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/05/11 15:08	JKB		
Sulfate	Not detected	mg/L	2	300.0	06/29/11 07:09	JDP	14808-79-8	
TOC	0.88	mg/L	0.50	5310C	07/12/11 17:21	Trmx		O

Metals

Chromium, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:55	PER	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:55	PER	7440-50-8	
Iron, Dissolved	Not detected	mg/L	0.02	200.8	06/29/11 15:55	PER	7439-89-6	
Manganese, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:55	PER	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:55	PER	7440-02-0	
Sodium	0.46	mg/L	0.20	200.8	06/28/11 13:01	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:55	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/27/11 18:58	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/27/11 18:58	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/27/11 18:58	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/27/11 18:58	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/27/11 18:58	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/27/11 18:58	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	107-06-2	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.01 (continued)

Sample Tag: EB-1

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/27/11 18:58	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/27/11 18:58	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/27/11 18:58	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/27/11 18:58	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/05/11 15:43	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.02
 Sample Tag: B-7
 Collected Date/Time: 06/22/2011 09:15
 Matrix: Groundwater
 COC Reference: 47569

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
2	125ml Amber	H2SO4	Yes	4.5	IR
2	40ml Glass	HCL	Yes	4.5	IR
1	125ml Plastic	NaOH	Yes	4.5	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	26	mg/L	10	300.0	06/29/11 07:20	JDP	16887-00-6	
Conductivity	910	umhos/cm		120.1	06/30/11 14:28	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/29/11 11:40	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/05/11 15:12	JKB		
Sulfate	88	mg/L	10	300.0	06/29/11 07:20	JDP	14808-79-8	
TOC	4.3	mg/L	0.50	5310C	07/12/11 17:28	Trmx		O

Metals

Chromium, Dissolved	0.010	mg/L	0.005	200.8	06/29/11 15:56	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 15:23	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:56	PER	7440-50-8	
Iron, Dissolved	0.22	mg/L	0.02	200.8	06/29/11 15:56	PER	7439-89-6	
Manganese, Dissolved	0.006	mg/L	0.005	200.8	06/29/11 15:56	PER	7439-96-5	
Nickel, Dissolved	0.005	mg/L	0.005	200.8	06/29/11 15:56	PER	7440-02-0	
Sodium	55.2	mg/L	1.0	200.8	06/28/11 13:02	PER	7440-23-5	
Zinc, Dissolved	0.006	mg/L	0.005	200.8	06/29/11 15:56	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/27/11 19:16	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/27/11 19:16	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/27/11 19:16	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/27/11 19:16	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/27/11 19:16	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/27/11 19:16	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.02 (continued)

Sample Tag: B-7

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/27/11 19:16	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/27/11 19:16	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/27/11 19:16	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/27/11 19:16	WAT	75-01-4	
Organics								
TOX	25	ug/L	30	9020A	07/06/11 08:09	TestA		O1
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

O-Analysis performed by outside laboratory. See attached report. 1-Result is less than the RL but greater than or equal to the MDL and the concentration in an approximate value.



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.03
 Sample Tag: B-20D
 Collected Date/Time: 06/22/2011 10:40
 Matrix: Groundwater
 COC Reference: 47569

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
2	125ml Amber	H2SO4	Yes	4.5	IR
2	40ml Glass	HCL	Yes	4.5	IR
1	125ml Plastic	NaOH	Yes	4.5	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	Not detected	mg/L	5	300.0	06/29/11 09:17	JDP	16887-00-6	
Conductivity	967	umhos/cm		120.1	06/30/11 14:32	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/29/11 11:48	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/05/11 15:16	JKB		
Sulfate	164	mg/L	10	300.0	06/29/11 07:32	JDP	14808-79-8	
TOC	1.6	mg/L	0.50	5310C	07/12/11 17:36	Trmx		O

Metals

Chromium, Dissolved	0.009	mg/L	0.005	200.8	06/29/11 15:58	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 15:25	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 15:58	PER	7440-50-8	
Iron, Dissolved	2.55	mg/L	0.02	200.8	06/29/11 15:58	PER	7439-89-6	
Manganese, Dissolved	0.054	mg/L	0.005	200.8	06/29/11 15:58	PER	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 15:58	PER	7440-02-0	
Sodium	18.6	mg/L	1.0	200.8	06/28/11 13:05	PER	7440-23-5	
Zinc, Dissolved	0.013	mg/L	0.005	200.8	06/29/11 15:58	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/27/11 19:34	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/27/11 19:34	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/27/11 19:34	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/27/11 19:34	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/27/11 19:34	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/27/11 19:34	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.03 (continued)

Sample Tag: B-20D

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/27/11 19:34	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/27/11 19:34	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/27/11 19:34	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/27/11 19:34	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/06/11 08:29	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.04
 Sample Tag: B-9
 Collected Date/Time: 06/22/2011 10:55
 Matrix: Groundwater
 COC Reference: 47569

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
2	125ml Amber	H2SO4	Yes	4.5	IR
2	40ml Glass	HCL	Yes	4.5	IR
1	125ml Plastic	NaOH	Yes	4.5	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	99	mg/L	10	300.0	06/29/11 07:43	JDP	16887-00-6	
Conductivity	2,600	umhos/cm		120.1	06/30/11 14:34	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/29/11 11:50	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/05/11 15:18	JKB		
Sulfate	972	mg/L	100	300.0	06/29/11 09:29	JDP	14808-79-8	
TOC	1.9	mg/L	0.50	5310C	07/12/11 17:44	Trmx		O

Metals

Chromium, Dissolved	0.017	mg/L	0.005	200.8	06/29/11 16:00	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 15:28	SLS	7440-47-3	
Copper, Dissolved	0.006	mg/L	0.004	200.8	06/29/11 16:00	PER	7440-50-8	
Iron, Dissolved	0.78	mg/L	0.02	200.8	06/29/11 16:00	PER	7439-89-6	
Manganese, Dissolved	0.661	mg/L	0.005	200.8	06/29/11 16:00	PER	7439-96-5	
Nickel, Dissolved	0.021	mg/L	0.005	200.8	06/29/11 16:00	PER	7440-02-0	
Sodium	63.3	mg/L	1.0	200.8	06/28/11 13:06	PER	7440-23-5	
Zinc, Dissolved	0.012	mg/L	0.005	200.8	06/29/11 16:00	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/27/11 19:52	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/27/11 19:52	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/27/11 19:52	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/27/11 19:52	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/27/11 19:52	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/27/11 19:52	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.04 (continued)

Sample Tag: B-9

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/27/11 19:52	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/27/11 19:52	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/27/11 19:52	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/27/11 19:52	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/06/11 08:50	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.05
 Sample Tag: B-21D
 Collected Date/Time: 06/22/2011 14:40
 Matrix: Groundwater
 COC Reference: 47569

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
2	125ml Amber	H2SO4	Yes	4.5	IR
2	40ml Glass	HCL	Yes	4.5	IR
1	125ml Plastic	NaOH	Yes	4.5	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	Not detected	mg/L	5	300.0	06/29/11 09:40	JDP	16887-00-6	
Conductivity	718	umhos/cm		120.1	06/30/11 14:36	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/29/11 11:52	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/05/11 15:20	JKB		
Sulfate	61	mg/L	10	300.0	06/29/11 07:55	JDP	14808-79-8	
TOC	1.4	mg/L	0.50	5310C	07/12/11 17:52	Trmx		O

Metals

Chromium, Dissolved	0.010	mg/L	0.005	200.8	06/29/11 16:01	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	0.007	mg/L	0.005	200.8	07/25/11 15:34	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 16:01	PER	7440-50-8	
Iron, Dissolved	1.54	mg/L	0.02	200.8	06/29/11 16:01	PER	7439-89-6	
Manganese, Dissolved	0.033	mg/L	0.005	200.8	06/29/11 16:01	PER	7439-96-5	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 16:01	PER	7440-02-0	
Sodium	23.3	mg/L	1.0	200.8	06/28/11 13:08	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 16:01	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/27/11 20:10	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/27/11 20:10	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/27/11 20:10	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/27/11 20:10	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/27/11 20:10	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/27/11 20:10	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.05 (continued)

Sample Tag: B-21D

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/27/11 20:10	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/27/11 20:10	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/27/11 20:10	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/27/11 20:10	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/06/11 09:06	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.06
 Sample Tag: B-19Ar
 Collected Date/Time: 06/22/2011 16:30
 Matrix: Groundwater
 COC Reference: 47569

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
2	125ml Plastic	HNO3	Yes	4.5	IR
1	500ml Plastic	None	Yes	4.5	IR
2	40ml Glass	H2SO4	Yes	4.5	IR
2	125ml Amber	H2SO4	Yes	4.5	IR
2	40ml Glass	HCL	Yes	4.5	IR
1	125ml Plastic	NaOH	Yes	4.5	IR

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

Metal Digestion	Completed			3015A	06/29/11 11:00	PER		
Metal Digestion (Replicate 01)	Completed			3015A	07/25/11 01:00	SLR		
Metal Digestion	Completed			3015A	06/28/11 11:00	PER		

Inorganics

Chloride	64	mg/L	10	300.0	06/29/11 08:07	JDP	16887-00-6	
Conductivity	902	umhos/cm		120.1	06/30/11 14:38	JKB		
Cyanide	Not detected	mg/L	0.005	335.4/4500-CN-E	06/29/11 11:54	JDP	57-12-5	
Phenols	Not detected	mg/L	0.01	420.1	07/05/11 15:22	JKB		
Sulfate	140	mg/L	10	300.0	06/29/11 08:07	JDP	14808-79-8	
TOC	1.5	mg/L	0.50	5310C	07/12/11 18:00	Trmx		O

Metals

Chromium, Dissolved	0.005	mg/L	0.005	200.8	06/29/11 16:03	PER	7440-47-3	
Chromium, Dissolved (Replicate 01)	Not detected	mg/L	0.005	200.8	07/25/11 15:31	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	06/29/11 16:03	PER	7440-50-8	
Iron, Dissolved	0.24	mg/L	0.02	200.8	06/29/11 16:03	PER	7439-89-6	
Manganese, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 16:03	PER	7439-96-5	
Nickel, Dissolved	0.005	mg/L	0.005	200.8	06/29/11 16:03	PER	7440-02-0	
Sodium	22.4	mg/L	1.0	200.8	06/28/11 13:09	PER	7440-23-5	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	06/29/11 16:03	PER	7440-66-6	

Organics - Volatiles

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/27/11 20:29	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/27/11 20:29	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/27/11 20:29	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/27/11 20:29	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/27/11 20:29	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/27/11 20:29	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	124-48-1	

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.06 (continued)

Sample Tag: B-19Ar

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Organics - Volatiles (continued)								
VOCs, TTO List (continued)								
1,1-Dichloroethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/27/11 20:29	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/27/11 20:29	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/27/11 20:29	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/27/11 20:29	WAT	75-01-4	
Organics								
TOX	Not detected	ug/L	30	9020A	07/06/11 09:26	TestA		O
Other / Misc.								
Subcontracting Shipped (Replicate 01)	Completed				07/07/11 16:00	PCS		

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



Analytical Laboratory Report

Revised Report

Lab Sample ID: S49128.07
 Sample Tag: TB-3
 Collected Date/Time: 06/22/2011 00:01
 Matrix: Groundwater
 COC Reference: 47569

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	40ml Glass	HCL	Yes	4.5	IR

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

VOCs, TTO List

Acrolein	Not detected	ug/L	10	624	06/27/11 20:47	WAT	107-02-8	
Acrylonitrile	Not detected	ug/L	1	624	06/27/11 20:47	WAT	107-13-1	
Benzene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	71-43-2	
Bromodichloromethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	75-27-4	
Bromoform	Not detected	ug/L	1	624	06/27/11 20:47	WAT	75-25-2	
Bromomethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	74-83-9	
Carbon tetrachloride	Not detected	ug/L	1	624	06/27/11 20:47	WAT	56-23-5	
Chlorobenzene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	108-90-7	
Chloroethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	75-00-3	
2-Chloroethylvinyl ether	Not detected	ug/L	1	624	06/27/11 20:47	WAT	110-75-8	
Chloroform	Not detected	ug/L	1	624	06/27/11 20:47	WAT	67-66-3	
Chloromethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	74-87-3	
Dibromochloromethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	124-48-1	
1,1-Dichloroethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	75-34-3	
1,2-Dichloroethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	107-06-2	
1,1-Dichloroethene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	75-35-4	
trans-1,2-Dichloroethene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	156-60-5	
1,2-Dichloropropane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	78-87-5	
cis-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	10061-01-5	
trans-1,3-Dichloropropene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	10061-02-6	
Ethylbenzene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	100-41-4	
Methylene chloride	Not detected	ug/L	5	624	06/27/11 20:47	WAT	75-09-2	
1,1,2,2-Tetrachloroethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	79-34-5	
Tetrachloroethene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	127-18-4	
Toluene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	108-88-3	
1,1,1-Trichloroethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	71-55-6	
1,1,2-Trichloroethane	Not detected	ug/L	1	624	06/27/11 20:47	WAT	79-00-5	
Trichloroethene	Not detected	ug/L	1	624	06/27/11 20:47	WAT	79-01-6	
Vinyl chloride	Not detected	ug/L	1	624	06/27/11 20:47	WAT	75-01-4	



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C.O.C. PAGE # 1 OF 1

47569

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz
 COMPANY: O'Brien & Gere
 ADDRESS: 37000 Grand River Ave Ste 200
 CITY: Farmington Hills STATE: MI ZIP CODE: 48335
 PHONE NO: 248-477-5761 FAX NO: _____
 E-MAIL ADDRESS: _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME: Coldwater Rd Landfill soil Annual sampling
 SAMPLE(S) PLEASE PRINT/SIGN NAME: Kevin Schneider
 TURNAROUND TIME REQUIRED: 124 HR 48 HR 72 HR STANDARD OTHER
 DELIVERABLES REQUIRED: STANDARD LEVEL II LEVEL III OTHER

VOCs	TOC	TOX	Phenols	Cyanide	Sulfate	Chlorides	Specific Conductivity	Dissolved Metals	Sodium	SPECIAL INSTRUCTIONS/NOTES
										Metals Anal: Cu, Cr, Ni, Zn, Fe, Mn

MATRIX CODE: GW=GROUNDWATER SL=SLUDGE WW=WASTEWATER O=OIL S=SOIL A=AIR L=LIQUID W=WASTE SO=SOLID M=MISC
 # Containers & Preservatives

MERIT LAB NO.	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCL	HNO3	H2SO4	NaOH	MEDIH	OTHER	VOCs	TOC	TOX	Phenols	Cyanide	Sulfate	Chlorides	Specific Conductivity	Dissolved Metals	Sodium	SPECIAL INSTRUCTIONS/NOTES	
	DATE	TIME																						
4912801	6/22/11	800	EB-1	GC	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	Equipment Blank
.02		915	B-7	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.03		1040	B-20D	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.04		1055	B-9	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.05		1440	B-21D	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.06		1630	B-19AC	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.07			TB-3	GC	1	1							X											Trip Blank

RELINQUISHED BY: [Signature] DATE: 6/22/11 TIME: 1740
 RECEIVED BY: [Signature] DATE: 6-22-11 TIME: 1745

RELINQUISHED BY: [Signature] DATE: 6-22-11 TIME: 1740
 RECEIVED BY: [Signature] DATE: 6-23-11 TIME: 1440
 SEAL NO: _____ SEAL INTACT YES: _____ NO: _____ INITIALS: _____ NOTES: _____ TEMP. ON ARRIVAL: 45

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

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica North Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-1412-1
Client Project/Site: 49128

For:
Merit Laboratories
2680 E Lansing Drive
East Lansing, Michigan 48823

Attn: Paula Shaw



Authorized for release by:
07/07/2011 12:27:56 PM

Denise Heckler
Project Manager II
denise.heckler@testamericainc.com



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- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	5
Sample Summary	6
Detection Summary	7
Client Sample Results	8
QC Sample Results	9
QC Association Summary	10
Lab Chronicle	11
Certification Summary	12
Chain of Custody	13
Receipt Checklists	16

Definitions/Glossary

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Qualifiers

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis.
EPA	United States Environmental Protection Agency
ND	Not Detected above the reporting level.
MDL	Method Detection Limit
RL	Reporting Limit
RE, RE1 (etc.)	Indicates a Re-extraction or Reanalysis of the sample.
%R	Percent Recovery
RPD	Relative Percent Difference, a measure of the relative difference between two points.

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Case Narrative

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Job ID: 240-1412-1

Laboratory: TestAmerica North Canton

Narrative

Job Narrative
240-1412-1

Comments

No additional comments.

Receipt

All samples were received in good condition within temperature requirements.

General Chemistry

No analytical or quality issues were noted.

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Method Summary

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Method	Method Description	Protocol	Laboratory
9020B	Organic Halides, Total (TOX)	SW846	TAL NC

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NC = TestAmerica North Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



Sample Summary

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-1412-1	49128.01	Water	06/22/11 08:00	06/24/11 10:00
240-1412-2	49128.02	Water	06/22/11 09:15	06/24/11 10:00
240-1412-3	49128.03	Water	06/22/11 10:40	06/24/11 10:00
240-1412-4	49128.04	Water	06/22/11 10:55	06/24/11 10:00
240-1412-5	49128.05	Water	06/22/11 14:40	06/24/11 10:00
240-1412-6	49128.06	Water	06/22/11 16:30	06/24/11 10:00

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Detection Summary

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Client Sample ID: 49128.01

Lab Sample ID: 240-1412-1

No Detections.

Client Sample ID: 49128.02

Lab Sample ID: 240-1412-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Halogens, Total Organic	25	J	30	17	ug/L	1		9020B	Total/NA

Client Sample ID: 49128.03

Lab Sample ID: 240-1412-3

No Detections.

Client Sample ID: 49128.04

Lab Sample ID: 240-1412-4

No Detections.

Client Sample ID: 49128.05

Lab Sample ID: 240-1412-5

No Detections.

Client Sample ID: 49128.06

Lab Sample ID: 240-1412-6

No Detections.

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Client Sample Results

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Client Sample ID: 49128.01

Date Collected: 06/22/11 08:00

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-1

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/05/11 15:43	1

Client Sample ID: 49128.02

Date Collected: 06/22/11 09:15

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-2

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	25	J	30	17	ug/L			07/06/11 08:09	1

Client Sample ID: 49128.03

Date Collected: 06/22/11 10:40

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/06/11 08:29	1

Client Sample ID: 49128.04

Date Collected: 06/22/11 10:55

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-4

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/06/11 08:50	1

Client Sample ID: 49128.05

Date Collected: 06/22/11 14:40

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-5

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/06/11 09:06	1

Client Sample ID: 49128.06

Date Collected: 06/22/11 16:30

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	30	U	30	17	ug/L			07/06/11 09:26	1

QC Sample Results

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Method: 9020B - Organic Halides, Total (TOX)

Lab Sample ID: MB 240-7384/7
Matrix: Water
Analysis Batch: 7384

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Halogens, Total Organic	30	U	30	17	ug/L			07/05/11 11:52	1

Lab Sample ID: LCS 240-7384/8
Matrix: Water
Analysis Batch: 7384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	% Rec	% Rec. Limits

- 1
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QC Association Summary

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

General Chemistry

Analysis Batch: 7384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 240-7384/7	Method Blank	Total/NA	Water	9020B	
LCS 240-7384/8	Lab Control Sample	Total/NA	Water	9020B	
240-1412-1	49128.01	Total/NA	Water	9020B	
240-1412-2	49128.02	Total/NA	Water	9020B	
240-1412-3	49128.03	Total/NA	Water	9020B	
240-1412-4	49128.04	Total/NA	Water	9020B	
240-1412-5	49128.05	Total/NA	Water	9020B	
240-1412-6	49128.06	Total/NA	Water	9020B	

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Lab Chronicle

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Client Sample ID: 49128.01

Date Collected: 06/22/11 08:00

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	7384	07/05/11 15:43	TH	TAL NC

Client Sample ID: 49128.02

Date Collected: 06/22/11 09:15

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	7384	07/06/11 08:09	TH	TAL NC

Client Sample ID: 49128.03

Date Collected: 06/22/11 10:40

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	7384	07/06/11 08:29	TH	TAL NC

Client Sample ID: 49128.04

Date Collected: 06/22/11 10:55

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	7384	07/06/11 08:50	TH	TAL NC

Client Sample ID: 49128.05

Date Collected: 06/22/11 14:40

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	7384	07/06/11 09:06	TH	TAL NC

Client Sample ID: 49128.06

Date Collected: 06/22/11 16:30

Date Received: 06/24/11 10:00

Lab Sample ID: 240-1412-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared Or Analyzed	Analyst	Lab
Total/NA	Analysis	9020B		1	7384	07/06/11 09:26	TH	TAL NC

Laboratory References:

TAL NC = TestAmerica North Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Certification Summary

Client: Merit Laboratories
Project/Site: 49128

TestAmerica Job ID: 240-1412-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica North Canton	ACCLASS	DoD ELAP		ADE-1437
TestAmerica North Canton	California	NELAC	9	01144CA
TestAmerica North Canton	Connecticut	State Program	1	PH-0590
TestAmerica North Canton	Florida	NELAC	4	E87225
TestAmerica North Canton	Georgia	Georgia EPD	4	N/A
TestAmerica North Canton	Illinois	NELAC	5	200004
TestAmerica North Canton	Kansas	NELAC	7	E-10336
TestAmerica North Canton	Kentucky	State Program	4	58
TestAmerica North Canton	Minnesota	NELAC	5	039-999-348
TestAmerica North Canton	Nevada	State Program	9	OH-000482008A
TestAmerica North Canton	New Jersey	NELAC	2	OH001
TestAmerica North Canton	New York	NELAC	2	10975
TestAmerica North Canton	New York	NELAC	2	10975
TestAmerica North Canton	Ohio	OVAP	5	CL0024
TestAmerica North Canton	Pennsylvania	NELAC	3	68-00340
TestAmerica North Canton	USDA	USDA		P330-08-00123
TestAmerica North Canton	West Virginia	West Virginia DEP	3	210
TestAmerica North Canton	Wisconsin	State Program	5	999518190

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.





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C.O.C. PAGE # 1 OF 1
 62848

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Paula Shaw CONTACT NAME: Julie Teague CONTACT NAME: SAME

COMPANY: Merit Labs COMPANY: Test America

ADDRESS: _____ ADDRESS: _____

CITY: _____ CITY: _____ STATE: _____ STATE: _____ ZIP CODE: _____ ZIP CODE: _____

PHONE NO.: _____ PHONE NO.: _____ P.O. NO.: _____ P.O. NO.: _____

E-MAIL ADDRESS: _____ FAX NO.: _____ FAX NO.: _____

PROJECT NO./NAME	SAMPLER(S) - PLEASE PRINT/SIGN NAME				TURNAROUND TIME REQUIRED	DELIVERABLES REQUIRED	MATRIX				# Containers & Preservatives	SPECIAL INSTRUCTIONS/NOTES
	24 HR	48 HR	72 HR	OTHER			GW=GROUNDWATER SL=SLUDGE	WW=WASTEWATER O=OIL	S=SOIL A=AIR	L=LIQUID W=WASTE		
49128	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	STANDARD	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OTHER	MeOH	*Sub'd to Test America
										H ₂ O ₂		
										HNO ₃		
										HCL		
										NONE		
										OTHER		
MERIT LAB NO.	YEAR	DATE	TIME	SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES						
		6-22	0800	49128.01	GW	1						
			0915	.02								
			1040	.03								
			1055	.04								
			1440	.05								
			1630	.06								

RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
<u>Paula Shaw</u>	6-23-11	1600	<u>Julie Teague</u>	6-23-11	1600
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME
<u>Jill Clark</u>	6-24-11	1000	<u>Jill Clark</u>	6-24-11	1000
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME
RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME	RECEIVED BY: SIGNATURE/ORGANIZATION	DATE	TIME

SEAL NO. _____ SEAL NO. _____

SEAL INTACT YES NO SEAL INTACT YES NO

INITIALS _____ INITIALS _____

NOTES: _____

TEMP. ON ARRIVAL _____

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



TestAmerica Cooler Receipt Form/Narrative
North Canton Facility

Lot Number: _____

Client Merit Project 49128 By: Jill Clark
 Cooler Received on 10-24-11 Opened on 10-24-11 (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 3.2 °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# 100110-HNO₃; Sulfuric Acid Lot# 110410-H₂SO₄; Sodium Hydroxide Lot# 100108 -NaOH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zinc Acetate Lot# 100108-(CH₃COO)₂ZN/NaOH. What time was preservative added to sample(s)? _____

Client ID	pH	Date	Initials

Login Sample Receipt Checklist

Client: Merit Laboratories

Job Number: 240-1412-1

Login Number: 1412

List Source: TestAmerica North Canton

List Number: 1

Creator: Sutek, Nick

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



July 20, 2011

Merit Laboratories, Inc.
Attn: Ms. Paula Shaw
2680 East Lansing Road
East Lansing, MI 48823

Project: Analytical Services

Dear Ms. Paula Shaw,

Enclosed is a copy of the laboratory report, comprised of the following work order(s), for test samples received by TriMatrix Laboratories:

Work Order	Received	Description
1107091	07/08/2011	49128

This report relates only to the sample(s), as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Conference (NELAC). Any qualifications of results, including sample acceptance requirements, are explained in the Statement of Data Qualifications.

Estimates of analytical uncertainties for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,



Gary L. Wood
Project Chemist

Enclosures(s)

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107091
Project:	Analytical Services	Description:	49128
Client Sample ID:	49128.01	Sampled:	06/22/11 08:00
Lab Sample ID:	1107091-01	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	0.88	0.50	mg/L	1	SM 5310 C 20th	07/12/11 17:21	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107091
Project:	Analytical Services	Description:	49128
Client Sample ID:	49128.02	Sampled:	06/22/11 09:15
Lab Sample ID:	1107091-02	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	4.3	0.50	mg/L	1	SM 5310 C 20th	07/12/11 17:28	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107091
Project:	Analytical Services	Description:	49128
Client Sample ID:	49128.03	Sampled:	06/22/11 10:40
Lab Sample ID:	1107091-03	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.6	0.50	mg/L	1	SM 5310 C 20th	07/12/11 17:36	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107091
Project:	Analytical Services	Description:	49128
Client Sample ID:	49128.04	Sampled:	06/22/11 10:55
Lab Sample ID:	1107091-04	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.9	0.50	mg/L	1	SM 5310 C 20th	07/12/11 17:44	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107091
Project:	Analytical Services	Description:	49128
Client Sample ID:	49128.05	Sampled:	06/22/11 14:40
Lab Sample ID:	1107091-05	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.4	0.50	mg/L	1	SM 5310 C 20th	07/12/11 17:52	GEH	1107129

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client:	Merit Laboratories, Inc.	Work Order:	1107091
Project:	Analytical Services	Description:	49128
Client Sample ID:	49128.06	Sampled:	06/22/11 16:30
Lab Sample ID:	1107091-06	Sampled By:	Client
Matrix:	Water	Received:	07/08/11 10:00

Physical/Chemical Parameters by EPA/APHA/ASTM Methods

Analyte	Analytical Result	RL	Unit	Dilution Factor	Method	Date Time Analyzed	By	QC Batch
*Carbon, Total Organic	1.5	0.50	mg/L	1	SM 5310 C 20th	07/12/11 18:00	GEH	1107129

*See Statement of Data Qualifications

QUALITY CONTROL REPORT
Physical/Chemical Parameters by EPA/APHA/ASTM Methods

QC Type	Sample Conc.	Spike Qty.	Result	Unit	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
---------	--------------	------------	--------	------	--------------	----------------	-----	------------	----

Analyte: Carbon, Total Organic/SM 5310 C 20th

QC Batch: 1107129 (General Inorganic Prep)

Analyzed: 07/12/2011 By: GEH

Method Blank			<0.50	mg/L					0.50
Laboratory Control Sample		2.00	2.19	mg/L	109	84-118			0.50
Laboratory Control Sample Duplicate			2.18	mg/L			0.4	20	0.50

STATEMENT OF DATA QUALIFICATIONS**Physical/Chemical Parameters by EPA/APHA/ASTM Methods**

Qualification: Due to insufficient sample volume received, no matrix QC is available with this batch of samples.

Analysis: SM 5310 C 20th

Sample/Analyte:	1107091-01	49128.01	Carbon, Total Organic
	1107091-02	49128.02	Carbon, Total Organic
	1107091-03	49128.03	Carbon, Total Organic
	1107091-04	49128.04	Carbon, Total Organic
	1107091-05	49128.05	Carbon, Total Organic
	1107091-06	49128.06	Carbon, Total Organic

E-1107091



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 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

63482

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Paula Shaw
 COMPANY: Merit Labs
 ADDRESS: Merit Labs

CONTACT NAME: Julie Teague
 COMPANY: Julie Teague
 ADDRESS: Julie Teague
 CITY: Julie Teague
 STATE: Julie Teague
 ZIP CODE: Julie Teague

CITY: Julie Teague
 STATE: Julie Teague
 ZIP CODE: Julie Teague
 PHONE NO.: Julie Teague
 FAX NO.: Julie Teague
 P.O. NO.: Julie Teague
 QUOTE NO.: Julie Teague

CITY: Julie Teague
 STATE: Julie Teague
 ZIP CODE: Julie Teague
 PHONE NO.: Julie Teague
 FAX NO.: Julie Teague
 P.O. NO.: Julie Teague

PROJECT NO./NAME: 49128

SAMPLER(S) - PLEASE PRINT/SIGN NAME

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

SPECIAL INSTRUCTIONS/NOTES

TURNAROUND TIME REQUIRED: 24 HR 48 HR 72 HR STANDARD
 DELIVERABLES REQUIRED: STANDARD LEVEL II LEVEL III OTHER
 MATRIX CODE: GW=GROUNDWATER SL=SLUDGE WW=WASTEWATER O=OIL S=SOIL A=AIR L=LIQUID W=WASTE SD=SOLID M=MISC

OTHER: *Please hold time*
 TOC

MERIT LAB NO.	YEAR		IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	# Containers & Preservatives	SEAL INTACT	INITIALS	NOTES	DATE	TIME
	DATE	TIME									
01	6-22	0800	49128.01	GW	1		X				
02	0915		.02				X				
03	1040		.03				X				
04	1055		.04				X				
05	1440		.05				X				
06	1630		.06				X				

* Historical Results:
 0-10 mg/L

* Sub'd to Trimatrix

RELINQUISHED BY: [Signature]
 SIGNATURE/ORGANIZATION: [Signature]

RELINQUISHED BY: [Signature]
 SIGNATURE/ORGANIZATION: [Signature]

RECEIVED BY: [Signature]
 SIGNATURE/ORGANIZATION: [Signature]

RECEIVED BY: [Signature]
 SIGNATURE/ORGANIZATION: [Signature]

SAMPLE RECEIVING / LOG-IN CHECKLIST



Client: <u>Merit</u>	Work Order #: <u>1107091</u>
Receipt Record Page/Line #	Project Chemist / Sample #s

Recorded by (Initials/Date): <u>La 7/8/11</u>	<input checked="" type="checkbox"/> Cooler <input type="checkbox"/> Box <input type="checkbox"/> Other _____	Qty Received: <u>1</u>	<input checked="" type="checkbox"/> IR Gun (#202) <input type="checkbox"/> Digital Thermometer (#54) <input type="checkbox"/> Other (# _____)	<input type="checkbox"/> Thermometer Used <input type="checkbox"/> See Additional Cooler Information Form
--	--	---------------------------	---	--

Cooler #	Time	Cooler #	Time	Cooler #	Time	Cooler #	Time	
<u>-</u>	<u>1058</u>							
Custody Seals: <input checked="" type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		Custody Seals: <input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		Custody Seals: <input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		Custody Seals: <input type="checkbox"/> None <input type="checkbox"/> Present / Intact <input type="checkbox"/> Present / Not Intact		
Coolant Location: <input checked="" type="checkbox"/> Dispersed / Top / Middle / Bottom		Coolant Location: <input type="checkbox"/> Dispersed / Top / Middle / Bottom		Coolant Location: <input type="checkbox"/> Dispersed / Top / Middle / Bottom		Coolant Location: <input type="checkbox"/> Dispersed / Top / Middle / Bottom		
Coolant/Temperature Taken Via: <input checked="" type="checkbox"/> Loose Ice / Avg 2-3 containers <input checked="" type="checkbox"/> Bagged Ice / Avg 2-3 containers <input type="checkbox"/> Blue Ice / Avg 2-3 containers <input checked="" type="checkbox"/> None / Avg 2-3 containers		Coolant/Temperature Taken Via: <input type="checkbox"/> Loose Ice / Avg 2-3 containers <input type="checkbox"/> Bagged Ice / Avg 2-3 containers <input type="checkbox"/> Blue Ice / Avg 2-3 containers <input checked="" type="checkbox"/> None / Avg 2-3 containers		Coolant/Temperature Taken Via: <input type="checkbox"/> Loose Ice / Avg 2-3 containers <input type="checkbox"/> Bagged Ice / Avg 2-3 containers <input type="checkbox"/> Blue Ice / Avg 2-3 containers <input checked="" type="checkbox"/> None / Avg 2-3 containers		Coolant/Temperature Taken Via: <input type="checkbox"/> Loose Ice / Avg 2-3 containers <input type="checkbox"/> Bagged Ice / Avg 2-3 containers <input type="checkbox"/> Blue Ice / Avg 2-3 containers <input checked="" type="checkbox"/> None / Avg 2-3 containers		
Alternate Temperature Taken Via: <input type="checkbox"/> Temperature Blank (TB) <input type="checkbox"/> 1 Container		Alternate Temperature Taken Via: <input type="checkbox"/> Temperature Blank (TB) <input type="checkbox"/> 1 Container		Alternate Temperature Taken Via: <input type="checkbox"/> Temperature Blank (TB) <input type="checkbox"/> 1 Container		Alternate Temperature Taken Via: <input type="checkbox"/> Temperature Blank (TB) <input type="checkbox"/> 1 Container		
Recorded °C	Correction Factor °C	Actual °C	Recorded °C	Correction Factor °C	Actual °C	Recorded °C	Correction Factor °C	Actual °C
Temp Blank:			Temp Blank:			Temp Blank:		
TB location: Representative / Not Representative			TB location: Representative / Not Representative			TB location: Representative / Not Representative		
1	<u>6.7</u>	<u>-</u>	1			1		
2	<u>6.0</u>	<u>-</u>	2			2		
3	<u>7.3</u>	<u>-</u>	3			3		
Average °C			Average °C			Average °C		
<input type="checkbox"/> Cooler ID on COC? <input type="checkbox"/> VOC Trip Blank received?			<input type="checkbox"/> Cooler ID on COC? <input type="checkbox"/> VOC Trip Blank received?			<input type="checkbox"/> Cooler ID on COC? <input type="checkbox"/> VOC Trip Blank received?		

If any shaded areas checked, complete Sample Receiving Non-Conformance Form

Paperwork Received <input type="checkbox"/> No COC Received <table style="width: 100%;"> <tr> <td style="width: 10%;">N/A</td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td></td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Chain of Custody record(s)?</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td> If No, COC Initiated By _____</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td> Rec'd for Lab Signed/Date/Time?</td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td> Shipping document?</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td> Other _____</td> </tr> </table> COC ID #s: <input checked="" type="checkbox"/> TriMatrix <input type="checkbox"/> Other (Name or ID#) _____ Check COC for Accuracy <input type="checkbox"/> No analysis requested <table style="width: 100%;"> <tr> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Sample ID matches COC?</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Sample Date and Time matches COC?</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td> Container type completed on COC?</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> All container types indicated are received?</td> </tr> </table> Sample Condition Summary <input type="checkbox"/> Non-TriMatrix containers, see Notes <table style="width: 100%;"> <tr> <td style="width: 10%;">N/A</td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td></td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Broken containers/lids?</td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Missing or incomplete labels?</td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Illegible information on labels?</td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Low volume received?</td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Inappropriate containers received?</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> VOC vials / TOX containers have headspace?</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Extra sample locations / containers not listed on COC?</td> </tr> </table>	N/A	Yes	No			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Chain of Custody record(s)?		<input type="checkbox"/>	<input checked="" type="checkbox"/>	If No, COC Initiated By _____		<input type="checkbox"/>	<input checked="" type="checkbox"/>	Rec'd for Lab Signed/Date/Time?		<input checked="" type="checkbox"/>	<input type="checkbox"/>	Shipping document?		<input type="checkbox"/>	<input type="checkbox"/>	Other _____	Yes	No		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Sample ID matches COC?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Sample Date and Time matches COC?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Container type completed on COC?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> All container types indicated are received?	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Check Sample Preservation <table style="width: 100%;"> <tr> <td style="width: 10%;">N/A</td> <td style="width: 10%;">Yes</td> <td style="width: 10%;">No</td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Average sample temperature $\leq 6^\circ\text{C}$?</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/> Completed Sample Preservation Verification Form?</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/> Samples preserved correctly?</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td> If "No", added orange tag?</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td> Received pre-preserved VOC soils?</td> </tr> <tr> <td></td> <td></td> <td><input type="checkbox"/></td> <td> <input type="checkbox"/> MeOH <input type="checkbox"/> Na₂SO₄</td> </tr> </table> Check for Short Hold-Time Prep/Analyses <table style="width: 100%;"> <tr> <td><input type="checkbox"/></td> <td>Bacteriological</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Air Bags</td> </tr> <tr> <td><input type="checkbox"/></td> <td>EnCores / Methanol Pre-Preserved</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Formaldehyde/Aldehyde</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Green-tagged containers</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Yellow/White-tagged 1L ambers (SV Prep-Lab)</td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> AFTER HOURS ONLY: COPIES OF COC TO LAB AREA(S) <input checked="" type="checkbox"/> NONE RECEIVED <input type="checkbox"/> RECEIVED, COCs TO LAB(S) </div> Notes <input type="checkbox"/> Trip Blank received <input type="checkbox"/> Trip Blank not listed on COC <input type="checkbox"/> No COC received, Proj. Chemist reviewed (Init/Date) _____ <input type="checkbox"/> No analysis requested, Proj. Chemist completed (Init/Date) _____ <table style="width: 100%; margin-top: 10px;"> <tr> <td style="width: 33%;">Cooler Received (Date/Time)</td> <td style="width: 33%;">Paperwork Delivered (Date/Time)</td> <td style="width: 33%;">≤1 Hour Goal Met?</td> </tr> <tr> <td><u>7/8/11 10:00</u></td> <td><u>7/8/11 11:20</u></td> <td style="text-align: center;">Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></td> </tr> </table>	N/A	Yes	No		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Average sample temperature $\leq 6^\circ\text{C}$?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Completed Sample Preservation Verification Form?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Samples preserved correctly?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	If "No", added orange tag?		<input type="checkbox"/>	<input type="checkbox"/>	Received pre-preserved VOC soils?			<input type="checkbox"/>	<input type="checkbox"/> MeOH <input type="checkbox"/> Na ₂ SO ₄	<input type="checkbox"/>	Bacteriological	<input type="checkbox"/>	Air Bags	<input type="checkbox"/>	EnCores / Methanol Pre-Preserved	<input type="checkbox"/>	Formaldehyde/Aldehyde	<input type="checkbox"/>	Green-tagged containers	<input type="checkbox"/>	Yellow/White-tagged 1L ambers (SV Prep-Lab)	Cooler Received (Date/Time)	Paperwork Delivered (Date/Time)	≤1 Hour Goal Met?	<u>7/8/11 10:00</u>	<u>7/8/11 11:20</u>	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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2680 East Lansing Dr., East Lansing, MI 48823
 Phone (517) 332-0167 Fax (517) 332-6333
 www.meritlabs.com

C.O.C. PAGE # 1 OF 1

47569

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Clifford Yantz
 COMPANY: O'Brien & Gere
 ADDRESS: 37000 Grand River Ave Ste 200
 CITY: Farmington Hills STATE: MI ZIP CODE: 48335
 PHONE NO: 248-477-5761 FAX NO: _____
 E-MAIL ADDRESS: _____

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

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME: Coldwater Rd Landfill soil Annual sampling
 SAMPLE(S) PLEASE PRINT/SIGN NAME: Kevin Schneider
 TURNAROUND TIME REQUIRED: 124 HR 48 HR 72 HR STANDARD OTHER
 DELIVERABLES REQUIRED: STANDARD LEVEL II LEVEL III OTHER

VOCs	TOC	TOX	Phenols	Cyanide	Sulfate	Chlorides	Specific Conductivity	Dissolved Metals	Sodium	SPECIAL INSTRUCTIONS/NOTES
										Metals Anal: Cu, Cr, Ni, Zn, Fe, Mn

MATRIX CODE: GW=GROUNDWATER SL=SLUDGE WW=WASTEWATER O=OIL S=SOIL A=AIR L=LIQUID W=WASTE SO=SOLID M=MISC
 # Containers & Preservatives

MERIT LAB NO.	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCL	HNO3	H2SO4	NaOH	MEDIH	OTHER	VOCs	TOC	TOX	Phenols	Cyanide	Sulfate	Chlorides	Specific Conductivity	Dissolved Metals	Sodium	SPECIAL INSTRUCTIONS/NOTES	
	DATE	TIME																						
4912801	6/22/11	800	EB-1	GC	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	Equipment Blank
.02		915	B-7	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.03		1040	B-20D	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.04		1055	B-9	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.05		1440	B-21D	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.06		1630	B-19AC	GW	10	1	2	2	4	1			X	X	X	X	X	X	X	X	X	X	X	
.07			TB-3	GC	1	1							X											Trip Blank

RELINQUISHED BY: [Signature] DATE: 6/22/11 TIME: 1740
 RECEIVED BY: [Signature] DATE: 6-22-11 TIME: 1745

RELINQUISHED BY: [Signature] DATE: 6-22-11 TIME: 1740
 RECEIVED BY: [Signature] DATE: 6-23-11 TIME: 1440
 SEAL NO: _____ SEAL INTACT YES/NO: _____ INITIALS: _____ NOTES: _____ TEMP. ON ARRIVAL: 45

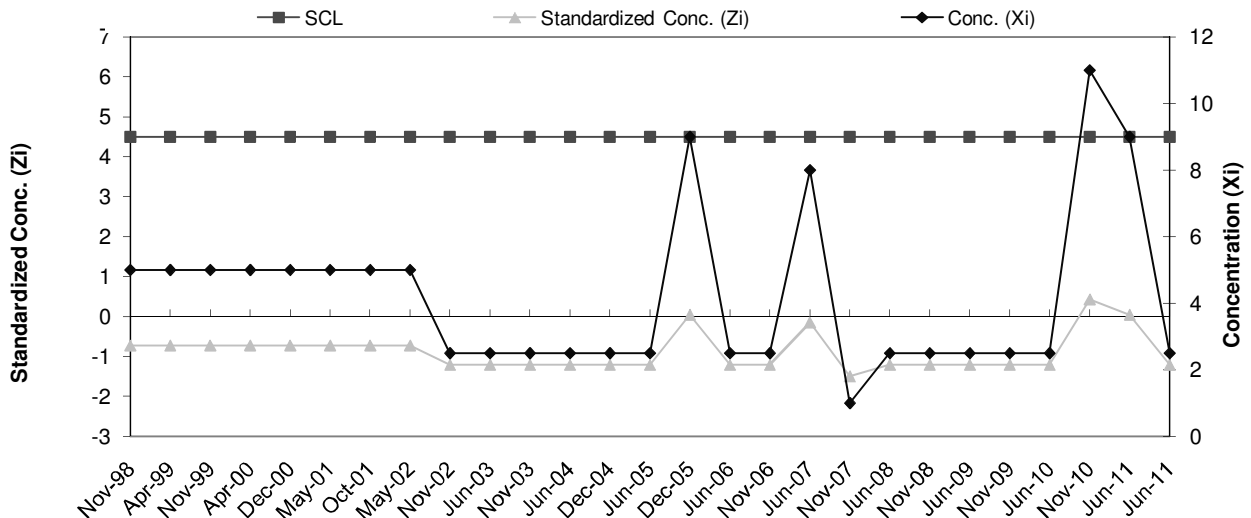
PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE

APPENDIX D
Shewart - Charts

COLDWATER ROAD LANDFILL 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)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.73
10	Apr-99	4.5	5	-0.73
11	Nov-99	4.5	5	-0.73
12	Apr-00	4.5	5	-0.73
13	Dec-00	4.5	5	-0.73
14	May-01	4.5	5	-0.73
15	Oct-01	4.5	5	-0.73
16	May-02	4.5	5	-0.73
17	Nov-02	4.5	2.5	-1.21
18	Jun-03	4.5	2.5	-1.21
19	Nov-03	4.5	2.5	-1.21
20	Jun-04	4.5	2.5	-1.21
21	Dec-04	4.5	2.5	-1.21
22	Jun-05	4.5	2.5	-1.21
23	Dec-05	4.5	9	0.04
24	Jun-06	4.5	2.5	-1.21
25	Nov-06	4.5	2.5	-1.21
26	Jun-07	4.5	8	-0.15
27	Nov-07	4.5	1	-1.50
28	Jun-08	4.5	2.5	-1.21
29	Nov-08	4.5	2.5	-1.21
30	Jun-09	4.5	2.5	-1.21
31	Nov-09	4.5	2.5	-1.21
32	Jun-10	4.5	2.5	-1.21
33	Nov-10	4.5	11	0.43
34	Jun-11	4.5	9	0.04
35	Jun-11	4.5	2.5	-1.21

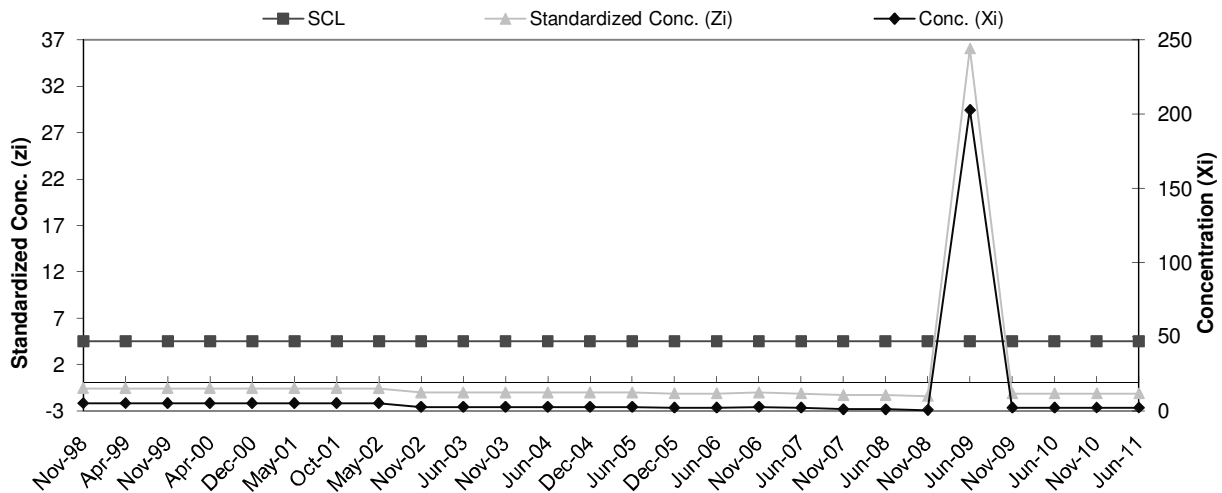


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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		

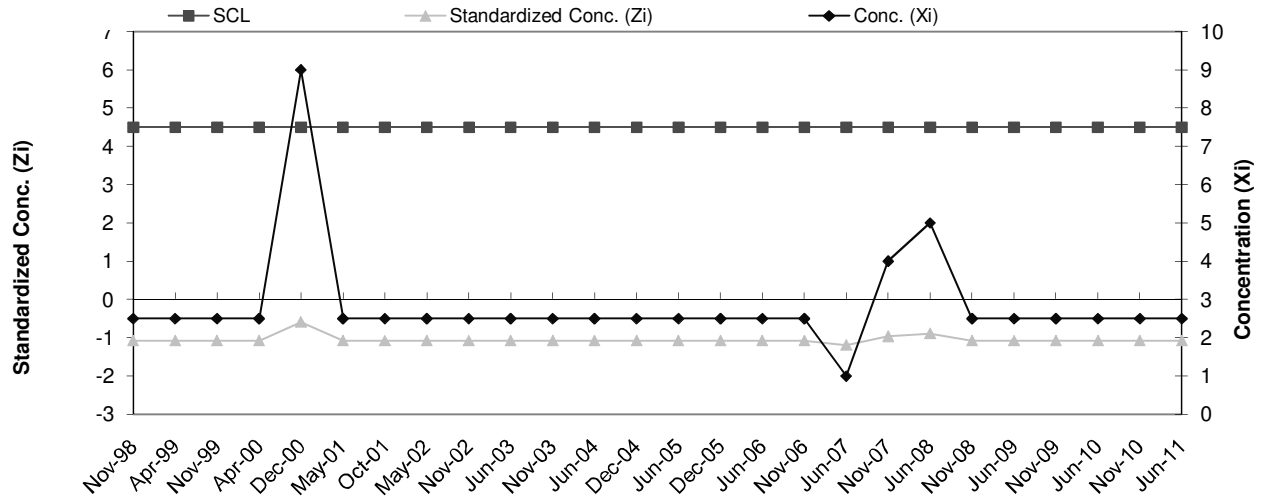
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.58
10	Apr-99	4.5	5	-0.58
11	Nov-99	4.5	5	-0.58
12	Apr-00	4.5	5	-0.58
13	Dec-00	4.5	5	-0.58
14	May-01	4.5	5	-0.58
15	Oct-01	4.5	5	-0.58
16	May-02	4.5	5	-0.58
17	Nov-02	4.5	2.5	-1.04
18	Jun-03	4.5	2.5	-1.04
19	Nov-03	4.5	2.5	-1.04
20	Jun-04	4.5	2.5	-1.04
21	Dec-04	4.5	2.5	-1.04
22	Jun-05	4.5	2.5	-1.04
23	Dec-05	4.5	2	-1.14
24	Jun-06	4.5	2	-1.14
25	Nov-06	4.5	2.5	-1.04
26	Jun-07	4.5	2	-1.14
27	Nov-07	4.5	1	-1.32
28	Jun-08	4.5	1	-1.32
29	Nov-08	4.5	0.5	-1.41
30	Jun-09	4.5	203	36.09
31	Nov-09	4.5	2	-1.14
32	Jun-10	4.5	2	-1.14
33	Nov-10	4.5	2	-1.14
34	Jun-11	4.5	2	-1.14



**COLDWATER ROAD LANDFILL 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		

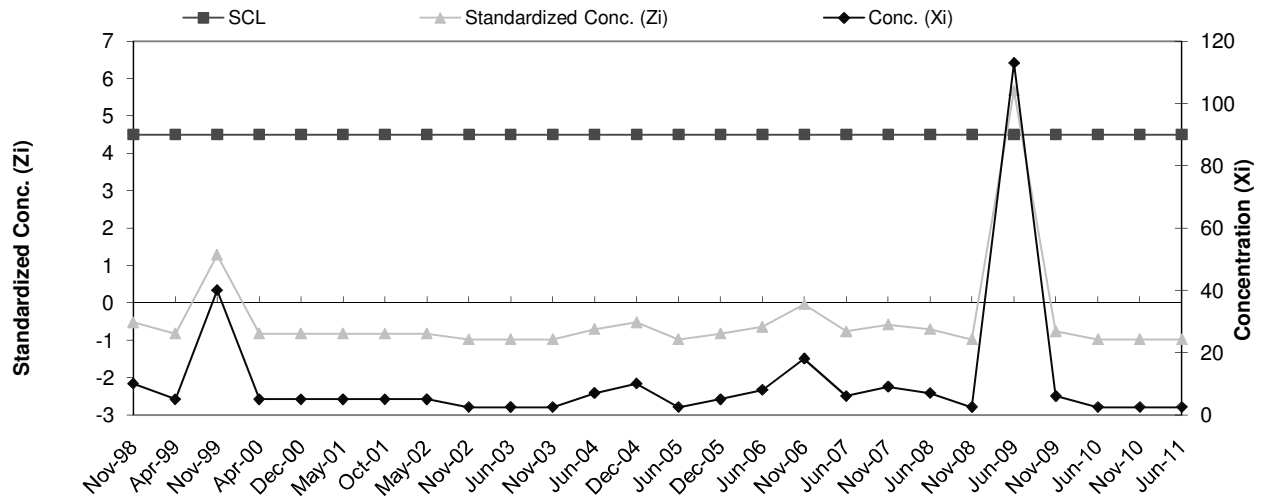
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	2.5	-1.08
10	Apr-99	4.5	2.5	-1.08
11	Nov-99	4.5	2.5	-1.08
12	Apr-00	4.5	2.5	-1.08
13	Dec-00	4.5	9	-0.59
14	May-01	4.5	2.5	-1.08
15	Oct-01	4.5	2.5	-1.08
16	May-02	4.5	2.5	-1.08
17	Nov-02	4.5	2.5	-1.08
18	Jun-03	4.5	2.5	-1.08
19	Nov-03	4.5	2.5	-1.08
20	Jun-04	4.5	2.5	-1.08
21	Dec-04	4.5	2.5	-1.08
22	Jun-05	4.5	2.5	-1.08
23	Dec-05	4.5	2.5	-1.08
24	Jun-06	4.5	2.5	-1.08
25	Nov-06	4.5	2.5	-1.08
26	Jun-07	4.5	1	-1.19
27	Nov-07	4.5	4	-0.97
28	Jun-08	4.5	5	-0.89
29	Nov-08	4.5	2.5	-1.08
30	Jun-09	4.5	2.5	-1.08
31	Nov-09	4.5	2.5	-1.08
32	Jun-10	4.5	2.5	-1.08
33	Nov-10	4.5	2.5	-1.08
34	Jun-11	4.5	2.5	-1.08



**COLDWATER ROAD LANDFILL 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		

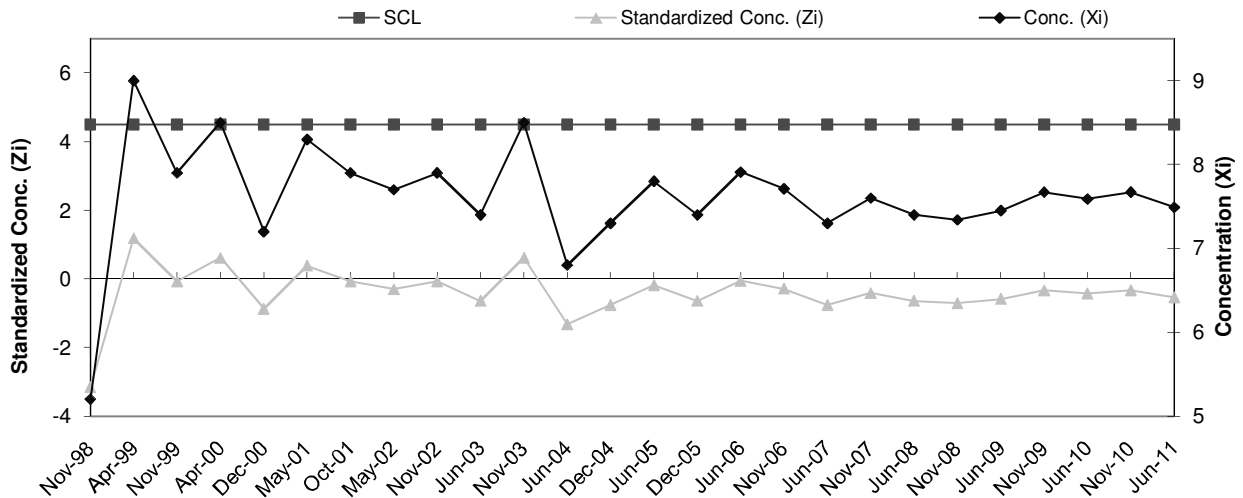
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	10	-0.53
10	Apr-99	4.5	5	-0.83
11	Nov-99	4.5	40	1.28
12	Apr-00	4.5	5	-0.83
13	Dec-00	4.5	5	-0.83
14	May-01	4.5	5	-0.83
15	Oct-01	4.5	5	-0.83
16	May-02	4.5	5	-0.83
17	Nov-02	4.5	2.5	-0.98
18	Jun-03	4.5	2.5	-0.98
19	Nov-03	4.5	2.5	-0.98
20	Jun-04	4.5	7	-0.71
21	Dec-04	4.5	10	-0.53
22	Jun-05	4.5	2.5	-0.98
23	Dec-05	4.5	5	-0.83
24	Jun-06	4.5	8	-0.65
25	Nov-06	4.5	18	-0.05
26	Jun-07	4.5	6	-0.77
27	Nov-07	4.5	9	-0.59
28	Jun-08	4.5	7	-0.71
29	Nov-08	4.5	2.5	-0.98
30	Jun-09	4.5	113	5.67
31	Nov-09	4.5	6	-0.77
32	Jun-10	4.5	2.5	-0.98
33	Nov-10	4.5	2.5	-0.98
34	Jun-11	4.5	2.5	-0.98



**COLDWATER ROAD LANDFILL 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		

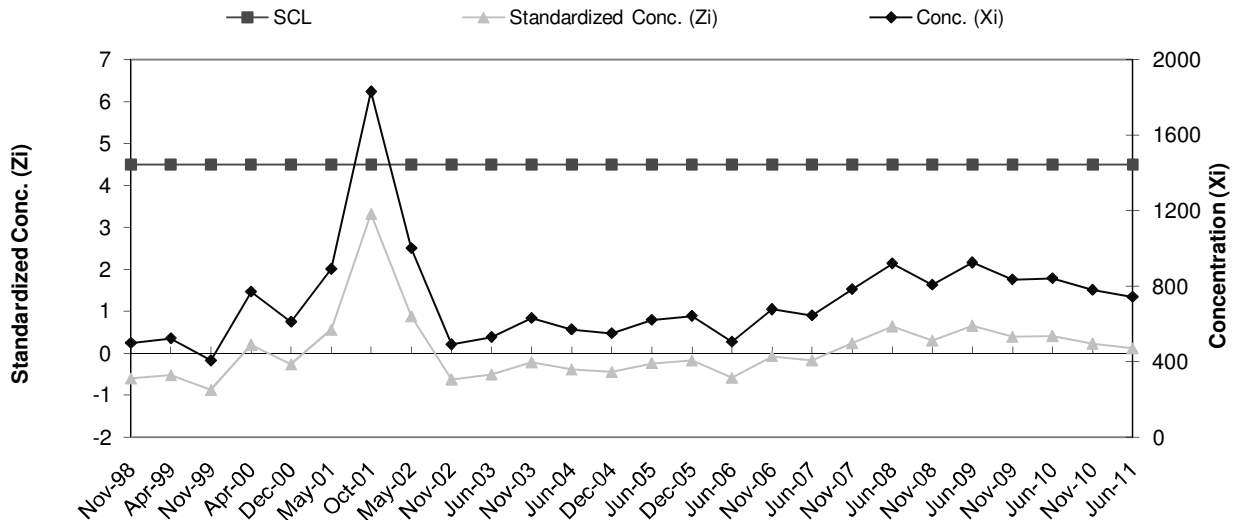
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	4.7	-3.15
10	Apr-99	4.5	8.5	1.18
11	Nov-99	4.5	7.4	-0.07
12	Apr-00	4.5	8.0	0.61
13	Dec-00	4.5	6.7	-0.87
14	May-01	4.5	7.8	0.38
15	Oct-01	4.5	7.4	-0.07
16	May-02	4.5	7.2	-0.30
17	Nov-02	4.5	7.4	-0.07
18	Jun-03	4.5	6.9	-0.64
19	Nov-03	4.5	8.0	0.61
20	Jun-04	4.5	6.3	-1.32
21	Dec-04	4.5	6.8	-0.75
22	Jun-05	4.5	7.3	-0.19
23	Dec-05	4.5	6.9	-0.64
24	Jun-06	4.5	7.4	-0.06
25	Nov-06	4.5	7.2	-0.29
26	Jun-07	4.5	6.8	-0.75
27	Nov-07	4.5	7.1	-0.41
28	Jun-08	4.5	6.9	-0.64
29	Nov-08	4.5	6.8	-0.71
30	Jun-09	4.5	7.0	-0.58
31	Nov-09	4.5	7.2	-0.33
32	Jun-10	4.5	7.1	-0.42
33	Nov-10	4.5	7.2	-0.33
34	Jun-11	4.5	7.0	-0.54



COLDWATER ROAD LANDFILL 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		

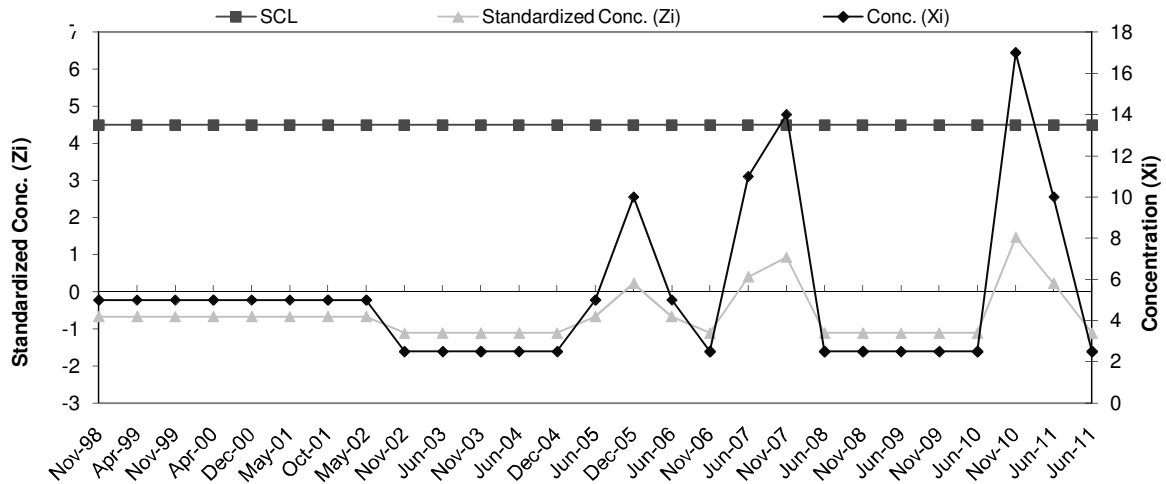
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	498.0	-0.60
10	Apr-99	4.5	523.0	-0.53
11	Nov-99	4.5	405.0	-0.87
12	Apr-00	4.5	770.0	0.20
13	Dec-00	4.5	610.0	-0.27
14	May-01	4.5	890.0	0.56
15	Oct-01	4.5	1830.0	3.32
16	May-02	4.5	1000.0	0.88
17	Nov-02	4.5	490.0	-0.62
18	Jun-03	4.5	530.0	-0.51
19	Nov-03	4.5	630.0	-0.21
20	Jun-04	4.5	570.0	-0.39
21	Dec-04	4.5	550.0	-0.45
22	Jun-05	4.5	620.0	-0.24
23	Dec-05	4.5	642.0	-0.18
24	Jun-06	4.5	504.1	-0.58
25	Nov-06	4.5	677.0	-0.07
26	Jun-07	4.5	644.0	-0.17
27	Nov-07	4.5	783.0	0.24
28	Jun-08	4.5	920.0	0.64
29	Nov-08	4.5	806.0	0.31
30	Jun-09	4.5	924.0	0.66
31	Nov-09	4.5	835.0	0.39
32	Jun-10	4.5	841.0	0.41
33	Nov-10	4.5	779.0	0.23
34	Jun-11	4.5	742.0	0.12



**COLDWATER ROAD LANDFILL 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)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.67
10	Apr-99	4.5	5	-0.67
11	Nov-99	4.5	5	-0.67
12	Apr-00	4.5	5	-0.67
13	Dec-00	4.5	5	-0.67
14	May-01	4.5	5	-0.67
15	Oct-01	4.5	5	-0.67
16	May-02	4.5	5	-0.67
17	Nov-02	4.5	2.5	-1.12
18	Jun-03	4.5	2.5	-1.12
19	Nov-03	4.5	2.5	-1.12
20	Jun-04	4.5	2.5	-1.12
21	Dec-04	4.5	2.5	-1.12
22	Jun-05	4.5	5	-0.67
23	Dec-05	4.5	10	0.22
24	Jun-06	4.5	5	-0.67
25	Nov-06	4.5	2.5	-1.12
26	Jun-07	4.5	11	0.40
27	Nov-07	4.5	14	0.94
28	Jun-08	4.5	2.5	-1.12
29	Nov-08	4.5	2.5	-1.12
30	Jun-09	4.5	2.5	-1.12
31	Nov-09	4.5	2.5	-1.12
32	Jun-10	4.5	2.5	-1.12
33	Nov-10	4.5	17	1.47
34	Jun-11	4.5	10	0.22
35	Jun-11	4.5	2.5	-1.12

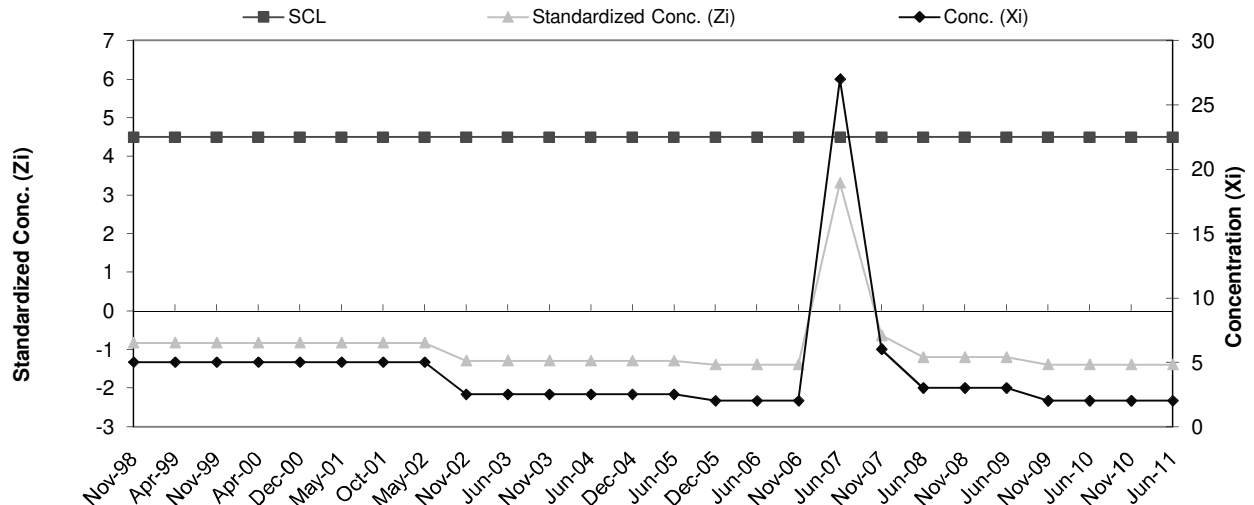


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	Nov-98	4.5	5	-0.83
10	Apr-99	4.5	5	-0.83
11	Nov-99	4.5	5	-0.83
12	Apr-00	4.5	5	-0.83
13	Dec-00	4.5	5	-0.83
14	May-01	4.5	5	-0.83
15	Oct-01	4.5	5	-0.83
16	May-02	4.5	5	-0.83
17	Nov-02	4.5	2.5	-1.30
18	Jun-03	4.5	2.5	-1.30
19	Nov-03	4.5	2.5	-1.30
20	Jun-04	4.5	2.5	-1.30
21	Dec-04	4.5	2.5	-1.30
22	Jun-05	4.5	2.5	-1.30
23	Dec-05	4.5	2	-1.39
24	Jun-06	4.5	2	-1.39
25	Nov-06	4.5	2	-1.39
26	Jun-07	4.5	27	3.31
27	Nov-07	4.5	6	-0.64
28	Jun-08	4.5	3	-1.20
29	Nov-08	4.5	3	-1.20
30	Jun-09	4.5	3	-1.20
31	Nov-09	4.5	2	-1.39
32	Jun-10	4.5	2	-1.39
33	Nov-10	4.5	2	-1.39
34	Jun-11	4.5	2	-1.39

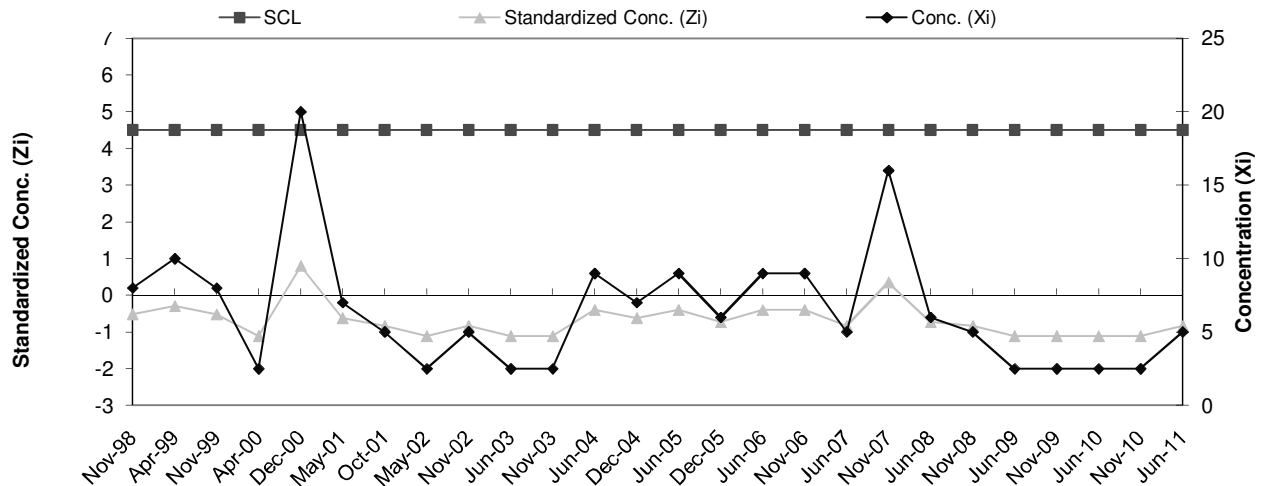


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	Nov-98	4.5	8	-0.51
10	Apr-99	4.5	10	-0.29
11	Nov-99	4.5	8	-0.51
12	Apr-00	4.5	2.5	-1.11
13	Dec-00	4.5	20	0.79
14	May-01	4.5	7	-0.62
15	Oct-01	4.5	5	-0.84
16	May-02	4.5	2.5	-1.11
17	Nov-02	4.5	5	-0.84
18	Jun-03	4.5	2.5	-1.11
19	Nov-03	4.5	2.5	-1.11
20	Jun-04	4.5	9	-0.40
21	Dec-04	4.5	7	-0.62
22	Jun-05	4.5	9	-0.40
23	Dec-05	4.5	6	-0.73
24	Jun-06	4.5	9	-0.40
25	Nov-06	4.5	9	-0.40
26	Jun-07	4.5	5	-0.84
27	Nov-07	4.5	16	0.36
28	Jun-08	4.5	6	-0.73
29	Nov-08	4.5	5	-0.84
30	Jun-09	4.5	2.5	-1.11
31	Nov-09	4.5	2.5	-1.11
32	Jun-10	4.5	2.5	-1.11
33	Nov-10	4.5	2.5	-1.11
34	Jun-11	4.5	5	-0.84

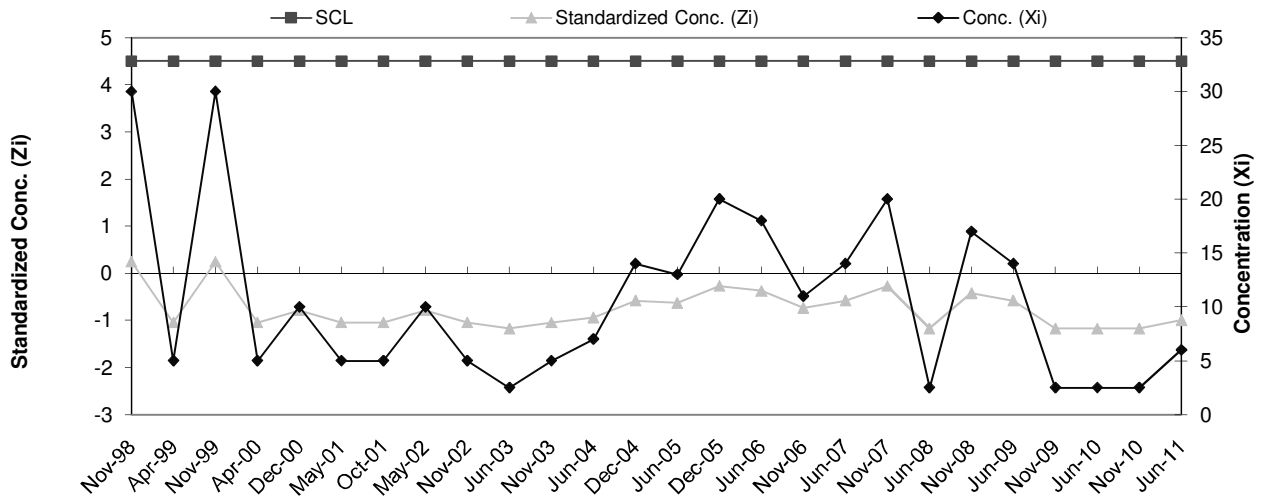


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	Nov-98	4.5	30	0.24
10	Apr-99	4.5	5	-1.04
11	Nov-99	4.5	30	0.24
12	Apr-00	4.5	5	-1.04
13	Dec-00	4.5	10	-0.79
14	May-01	4.5	5	-1.04
15	Oct-01	4.5	5	-1.04
16	May-02	4.5	10	-0.79
17	Nov-02	4.5	5	-1.04
18	Jun-03	4.5	2.5	-1.17
19	Nov-03	4.5	5	-1.04
20	Jun-04	4.5	7	-0.94
21	Dec-04	4.5	14	-0.58
22	Jun-05	4.5	13	-0.63
23	Dec-05	4.5	20	-0.27
24	Jun-06	4.5	18	-0.37
25	Nov-06	4.5	11	-0.73
26	Jun-07	4.5	14	-0.58
27	Nov-07	4.5	20	-0.27
28	Jun-08	4.5	2.5	-1.17
29	Nov-08	4.5	17	-0.43
30	Jun-09	4.5	14	-0.58
31	Nov-09	4.5	2.5	-1.17
32	Jun-10	4.5	2.5	-1.17
33	Nov-10	4.5	2.5	-1.17
34	Jun-11	4.5	6	-0.99

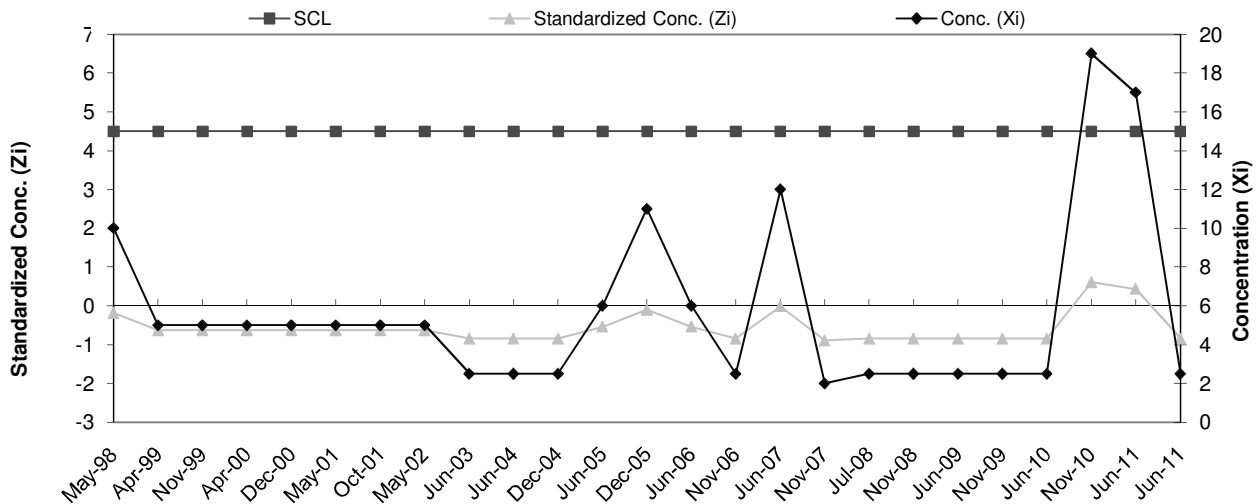


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	May-98	4.5	10	-0.19
10	Apr-99	4.5	5	-0.63
11	Nov-99	4.5	5	-0.63
12	Apr-00	4.5	5	-0.63
13	Dec-00	4.5	5	-0.63
14	May-01	4.5	5	-0.63
15	Oct-01	4.5	5	-0.63
16	May-02	4.5	5	-0.63
17	Jun-03	4.5	2.5	-0.85
18	Jun-04	4.5	2.5	-0.85
19	Dec-04	4.5	2.5	-0.85
20	Jun-05	4.5	6	-0.54
21	Dec-05	4.5	11	-0.10
22	Jun-06	4.5	6	-0.54
23	Nov-06	4.5	2.5	-0.85
24	Jun-07	4.5	12	-0.01
25	Nov-07	4.5	2	-0.89
26	Jul-08	4.5	2.5	-0.85
27	Nov-08	4.5	2.5	-0.85
28	Jun-09	4.5	2.5	-0.85
29	Nov-09	4.5	2.5	-0.85
30	Jun-10	4.5	2.5	-0.85
31	Nov-10	4.5	19	0.61
32	Jun-11	4.5	17	0.43
33	Jun-11	4.5	2.5	-0.85

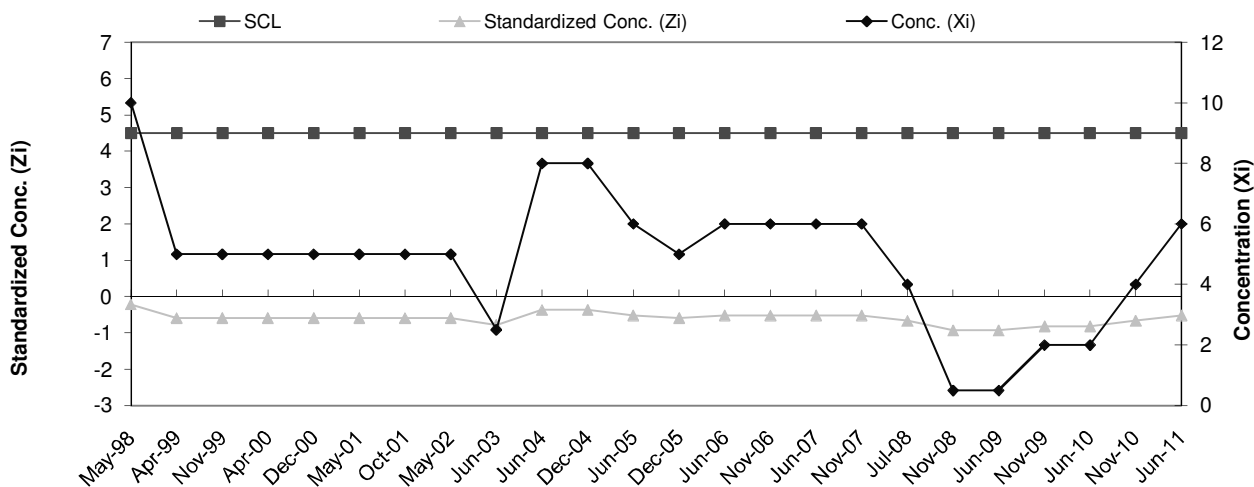


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	May-98	4.5	10	-0.22
10	Apr-99	4.5	5	-0.59
11	Nov-99	4.5	5	-0.59
12	Apr-00	4.5	5	-0.59
13	Dec-00	4.5	5	-0.59
14	May-01	4.5	5	-0.59
15	Oct-01	4.5	5	-0.59
16	May-02	4.5	5	-0.59
17	Jun-03	4.5	2.5	-0.78
18	Jun-04	4.5	8	-0.37
19	Dec-04	4.5	8	-0.37
20	Jun-05	4.5	6	-0.52
21	Dec-05	4.5	5	-0.59
22	Jun-06	4.5	6	-0.52
23	Nov-06	4.5	6	-0.52
24	Jun-07	4.5	6	-0.52
25	Nov-07	4.5	6	-0.52
26	Jul-08	4.5	4	-0.67
27	Nov-08	4.5	0.5	-0.93
28	Jun-09	4.5	0.5	-0.93
29	Nov-09	4.5	2	-0.82
30	Jun-10	4.5	2	-0.82
31	Nov-10	4.5	4	-0.67
32	Jun-11	4.5	6	-0.52

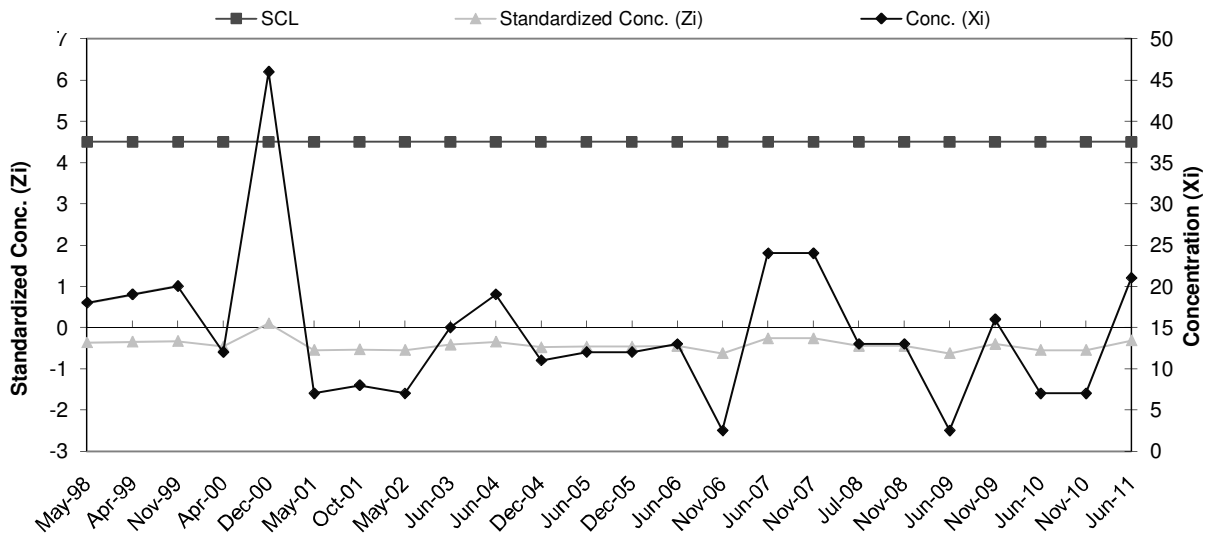


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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		

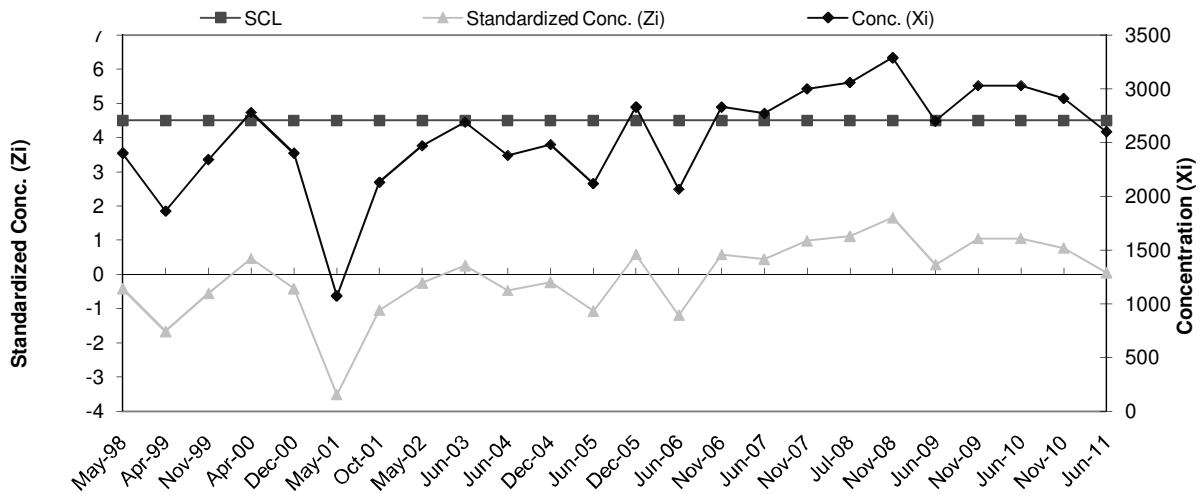
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	18	-0.36
10	Apr-99	4.5	19	-0.35
11	Nov-99	4.5	20	-0.33
12	Apr-00	4.5	12	-0.46
13	Dec-00	4.5	46	0.10
14	May-01	4.5	7	-0.55
15	Oct-01	4.5	8	-0.53
16	May-02	4.5	7	-0.55
17	Jun-03	4.5	15	-0.41
18	Jun-04	4.5	19	-0.35
19	Dec-04	4.5	11	-0.48
20	Jun-05	4.5	12	-0.46
21	Dec-05	4.5	12	-0.46
22	Jun-06	4.5	13	-0.45
23	Nov-06	4.5	2.5	-0.62
24	Jun-07	4.5	24	-0.26
25	Nov-07	4.5	24	-0.26
26	Jul-08	4.5	13	-0.45
27	Nov-08	4.5	13	-0.45
28	Jun-09	4.5	2.5	-0.62
29	Nov-09	4.5	16	-0.40
30	Jun-10	4.5	7	-0.55
31	Nov-10	4.5	7	-0.55
32	Jun-11	4.5	21	-0.31



COLDWATER ROAD LANDFILL 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)	Standardized Conc. (Zi)
9	May-98	4.5	2400	-0.42
10	Apr-99	4.5	1860	-1.68
11	Nov-99	4.5	2340	-0.56
12	Apr-00	4.5	2780	0.47
13	Dec-00	4.5	2400	-0.42
14	May-01	4.5	1070	-3.52
15	Oct-01	4.5	2130	-1.05
16	May-02	4.5	2470	-0.25
17	Jun-03	4.5	2690	0.26
18	Jun-04	4.5	2379	-0.47
19	Dec-04	4.5	2480	-0.23
20	Jun-05	4.5	2116	-1.08
21	Dec-05	4.5	2830	0.59
22	Jun-06	4.5	2065	-1.20
23	Nov-06	4.5	2830	0.59
24	Jun-07	4.5	2770	0.45
25	Nov-07	4.5	3000	0.98
26	Jul-08	4.5	3060	1.12
27	Nov-08	4.5	3290	1.66
28	Jun-09	4.5	2700	0.28
29	Nov-09	4.5	3030	1.05
30	Jun-10	4.5	3030	1.05
31	Nov-10	4.5	2910	0.77
32	Jun-11	4.5	2600	0.05

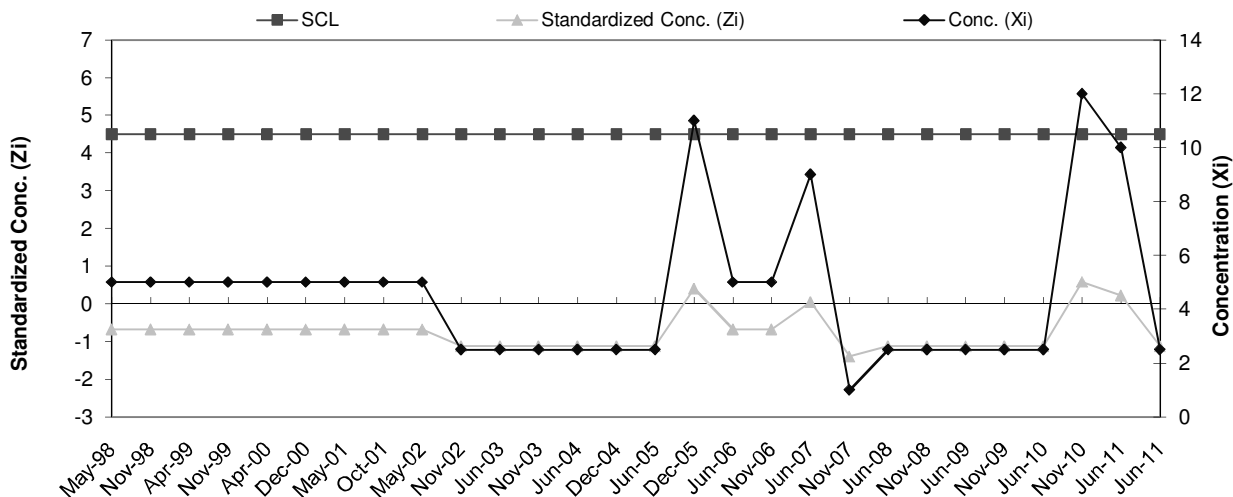


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.67
10	Nov-98	4.5	5	-0.67
11	Apr-99	4.5	5	-0.67
12	Nov-99	4.5	5	-0.67
13	Apr-00	4.5	5	-0.67
14	Dec-00	4.5	5	-0.67
15	May-01	4.5	5	-0.67
16	Oct-01	4.5	5	-0.67
17	May-02	4.5	5	-0.67
18	Nov-02	4.5	2.5	-1.12
19	Jun-03	4.5	2.5	-1.12
20	Nov-03	4.5	2.5	-1.12
21	Jun-04	4.5	2.5	-1.12
22	Dec-04	4.5	2.5	-1.12
23	Jun-05	4.5	2.5	-1.12
24	Dec-05	4.5	11	0.41
25	Jun-06	4.5	5	-0.67
26	Nov-06	4.5	5	-0.67
27	Jun-07	4.5	9	0.05
28	Nov-07	4.5	1	-1.39
29	Jun-08	4.5	2.5	-1.12
30	Nov-08	4.5	2.5	-1.12
31	Jun-09	4.5	2.5	-1.12
32	Nov-09	4.5	2.5	-1.12
33	Jun-10	4.5	2.5	-1.12
34	Nov-10	4.5	12	0.59
35	Jun-11	4.5	10	0.23
36	Jun-11	4.5	2.5	-1.12

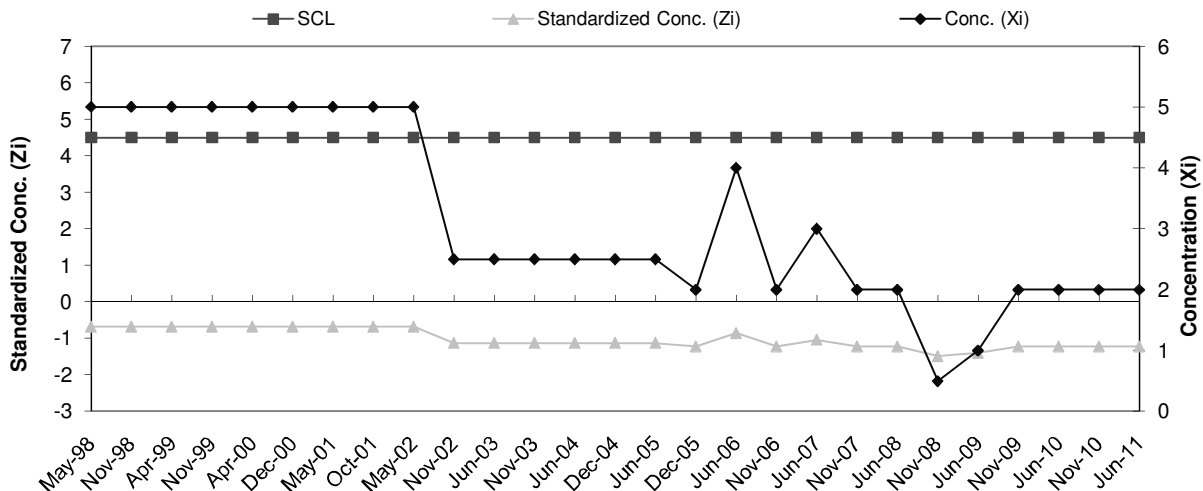


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.68
10	Nov-98	4.5	5	-0.68
11	Apr-99	4.5	5	-0.68
12	Nov-99	4.5	5	-0.68
13	Apr-00	4.5	5	-0.68
14	Dec-00	4.5	5	-0.68
15	May-01	4.5	5	-0.68
16	Oct-01	4.5	5	-0.68
17	May-02	4.5	5	-0.68
18	Nov-02	4.5	2.5	-1.13
19	Jun-03	4.5	2.5	-1.13
20	Nov-03	4.5	2.5	-1.13
21	Jun-04	4.5	2.5	-1.13
22	Dec-04	4.5	2.5	-1.13
23	Jun-05	4.5	2.5	-1.13
24	Dec-05	4.5	2	-1.22
25	Jun-06	4.5	4	-0.86
26	Nov-06	4.5	2	-1.22
27	Jun-07	4.5	3	-1.04
28	Nov-07	4.5	2	-1.22
29	Jun-08	4.5	2	-1.22
30	Nov-08	4.5	0.5	-1.49
31	Jun-09	4.5	1	-1.40
32	Nov-09	4.5	2	-1.22
33	Jun-10	4.5	2	-1.22
34	Nov-10	4.5	2	-1.22
35	Jun-11	4.5	2	-1.22

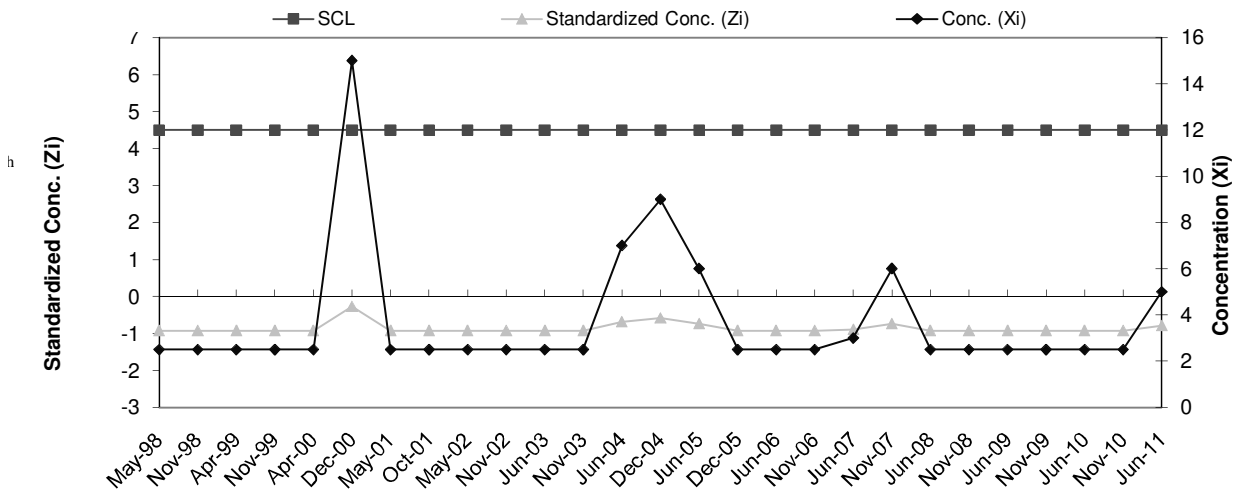


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-0.92
10	Nov-98	4.5	2.5	-0.92
11	Apr-99	4.5	2.5	-0.92
12	Nov-99	4.5	2.5	-0.92
13	Apr-00	4.5	2.5	-0.92
14	Dec-00	4.5	15	-0.26
15	May-01	4.5	2.5	-0.92
16	Oct-01	4.5	2.5	-0.92
17	May-02	4.5	2.5	-0.92
18	Nov-02	4.5	2.5	-0.92
19	Jun-03	4.5	2.5	-0.92
20	Nov-03	4.5	2.5	-0.92
21	Jun-04	4.5	7	-0.69
22	Dec-04	4.5	9	-0.58
23	Jun-05	4.5	6	-0.74
24	Dec-05	4.5	2.5	-0.92
25	Jun-06	4.5	2.5	-0.92
26	Nov-06	4.5	2.5	-0.92
27	Jun-07	4.5	3	-0.90
28	Nov-07	4.5	6	-0.74
29	Jun-08	4.5	2.5	-0.92
30	Nov-08	4.5	2.5	-0.92
31	Jun-09	4.5	2.5	-0.92
32	Nov-09	4.5	2.5	-0.92
33	Jun-10	4.5	2.5	-0.92
34	Nov-10	4.5	2.5	-0.92
35	Jun-11	4.5	5	-0.79

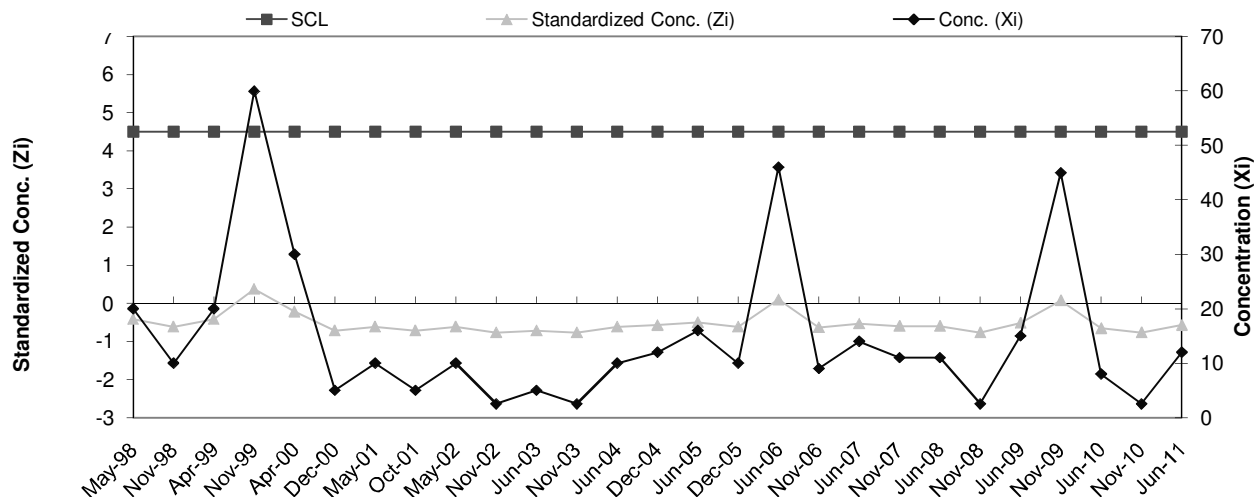


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	May-98	4.5	20	-0.42
10	Nov-98	4.5	10	-0.62
11	Apr-99	4.5	20	-0.42
12	Nov-99	4.5	60	0.37
13	Apr-00	4.5	30	-0.22
14	Dec-00	4.5	5	-0.72
15	May-01	4.5	10	-0.62
16	Oct-01	4.5	5	-0.72
17	May-02	4.5	10	-0.62
18	Nov-02	4.5	2.5	-0.76
19	Jun-03	4.5	5	-0.72
20	Nov-03	4.5	2.5	-0.76
21	Jun-04	4.5	10	-0.62
22	Dec-04	4.5	12	-0.58
23	Jun-05	4.5	16	-0.50
24	Dec-05	4.5	10	-0.62
25	Jun-06	4.5	46	0.09
26	Nov-06	4.5	9	-0.64
27	Jun-07	4.5	14	-0.54
28	Nov-07	4.5	11	-0.60
29	Jun-08	4.5	11	-0.60
30	Nov-08	4.5	2.5	-0.76
31	Jun-09	4.5	15	-0.52
32	Nov-09	4.5	45	0.07
33	Jun-10	4.5	8	-0.66
34	Nov-10	4.5	2.5	-0.76
35	Jun-11	4.5	12	-0.58

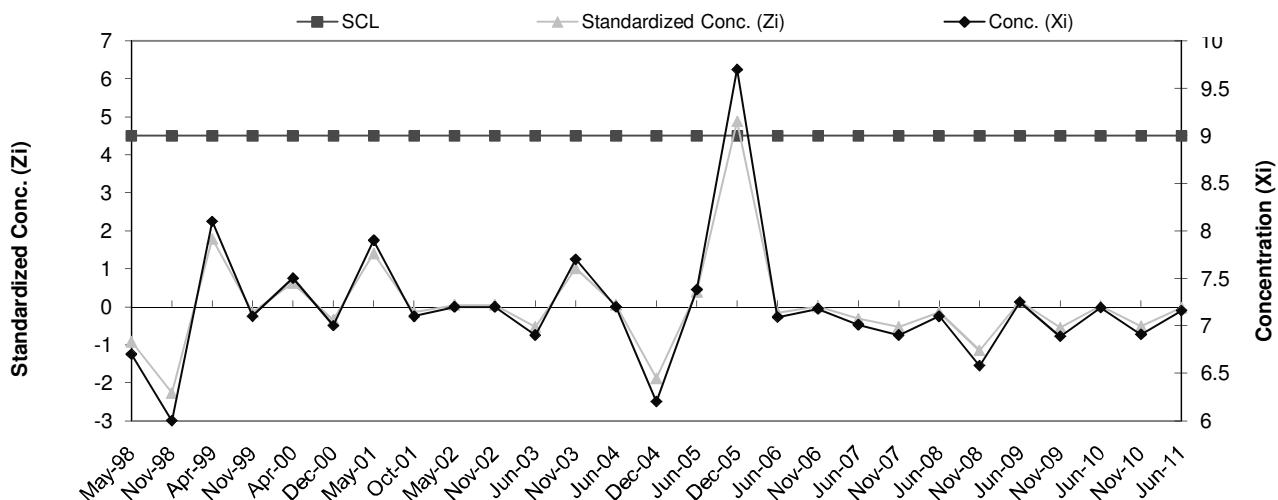


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	May-98	4.5	6.7	-0.92
10	Nov-98	4.5	6.0	-2.27
11	Apr-99	4.5	8.1	1.79
12	Nov-99	4.5	7.1	-0.14
13	Apr-00	4.5	7.5	0.63
14	Dec-00	4.5	7.0	-0.34
15	May-01	4.5	7.9	1.40
16	Oct-01	4.5	7.1	-0.14
17	May-02	4.5	7.2	0.05
18	Nov-02	4.5	7.2	0.05
19	Jun-03	4.5	6.9	-0.53
20	Nov-03	4.5	7.7	1.01
21	Jun-04	4.5	7.2	0.05
22	Dec-04	4.5	6.2	-1.88
23	Jun-05	4.5	7.4	0.40
24	Dec-05	4.5	9.7	4.88
25	Jun-06	4.5	7.1	-0.16
26	Nov-06	4.5	7.2	0.01
27	Jun-07	4.5	7.0	-0.32
28	Nov-07	4.5	6.9	-0.53
29	Jun-08	4.5	7.1	-0.14
30	Nov-08	4.5	6.6	-1.15
31	Jun-09	4.5	7.3	0.14
32	Nov-09	4.5	6.9	-0.55
33	Jun-10	4.5	7.2	0.03
34	Nov-10	4.5	6.9	-0.51
35	Jun-11	4.5	7.2	-0.03

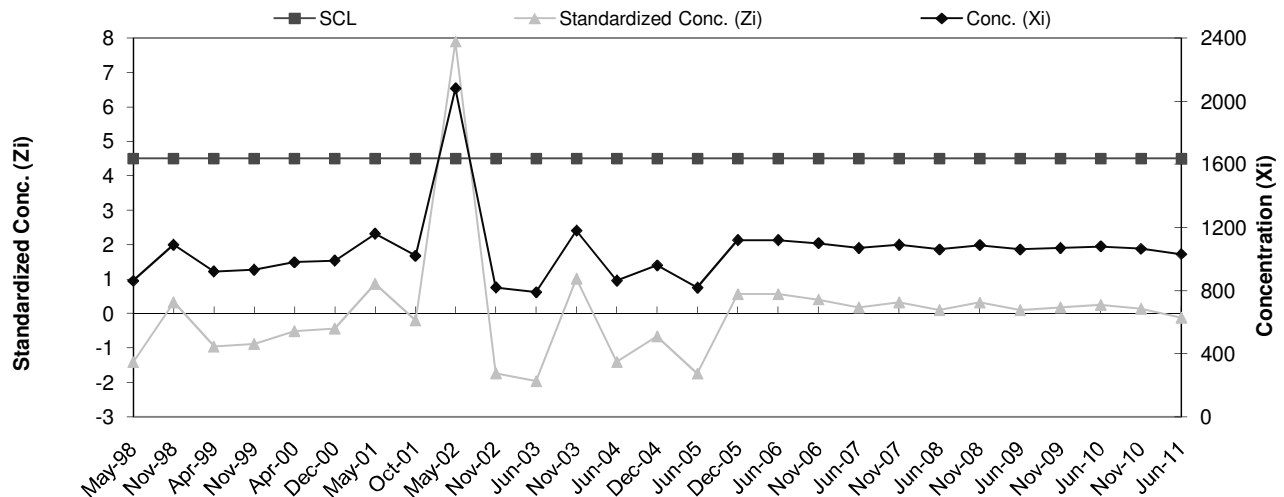


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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		

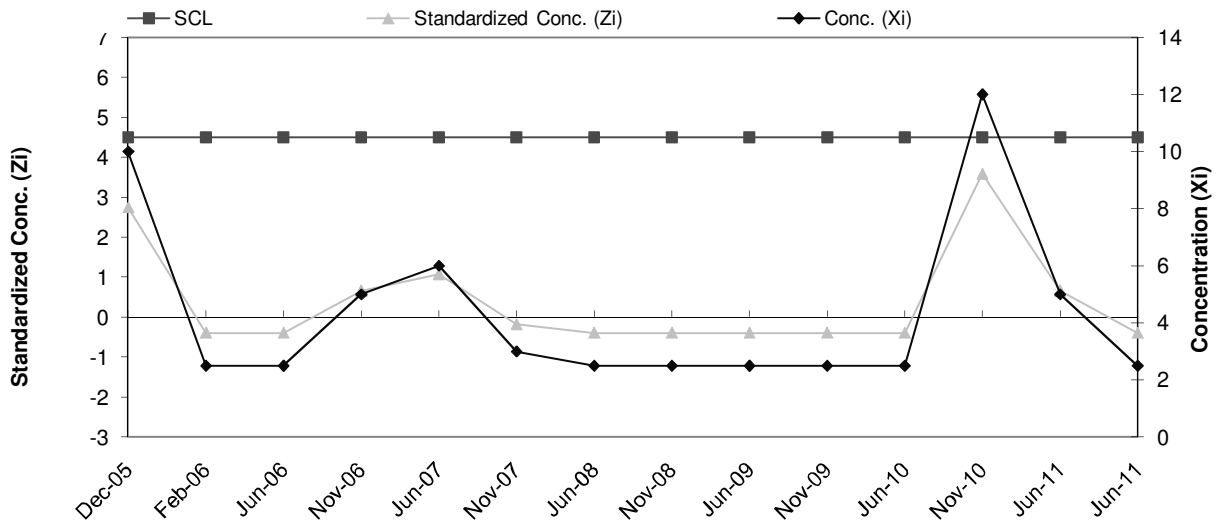
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	862	-1.41
10	Nov-98	4.5	1090.0	0.33
11	Apr-99	4.5	921	-0.96
12	Nov-99	4.5	932	-0.88
13	Apr-00	4.5	980	-0.51
14	Dec-00	4.5	990.0	-0.43
15	May-01	4.5	1160	0.87
16	Oct-01	4.5	1020	-0.20
17	May-02	4.5	2080	7.90
18	Nov-02	4.5	820	-1.73
19	Jun-03	4.5	790	-1.96
20	Nov-03	4.5	1180	1.02
21	Jun-04	4.5	863	-1.40
22	Dec-04	4.5	960	-0.66
23	Jun-05	4.5	819	-1.74
24	Dec-05	4.5	1120	0.56
25	Jun-06	4.5	1120	0.56
26	Nov-06	4.5	1100	0.41
27	Jun-07	4.5	1070	0.18
28	Nov-07	4.5	1090	0.33
29	Jun-08	4.5	1060	0.10
30	Nov-08	4.5	1088	0.32
31	Jun-09	4.5	1060	0.10
32	Nov-09	4.5	1070	0.18
33	Jun-10	4.5	1080	0.25
34	Nov-10	4.5	1065	0.14
35	Jun-11	4.5	1031	-0.12



**COLDWATER ROAD LANDFILL 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)	Standardized Conc. (Zi)
9	Dec-05	4.5	10	2.74
10	Feb-06	4.5	2.5	-0.39
11	Jun-06	4.5	2.5	-0.39
12	Nov-06	4.5	5	0.65
13	Jun-07	4.5	6	1.07
14	Nov-07	4.5	3	-0.18
15	Jun-08	4.5	2.5	-0.39
16	Nov-08	4.5	2.5	-0.39
17	Jun-09	4.5	2.5	-0.39
18	Nov-09	4.5	2.5	-0.39
19	Jun-10	4.5	2.5	-0.39
20	Nov-10	4.5	12	3.58
21	Jun-11	4.5	5	0.65
22	Jun-11	4.5	2.5	-0.39

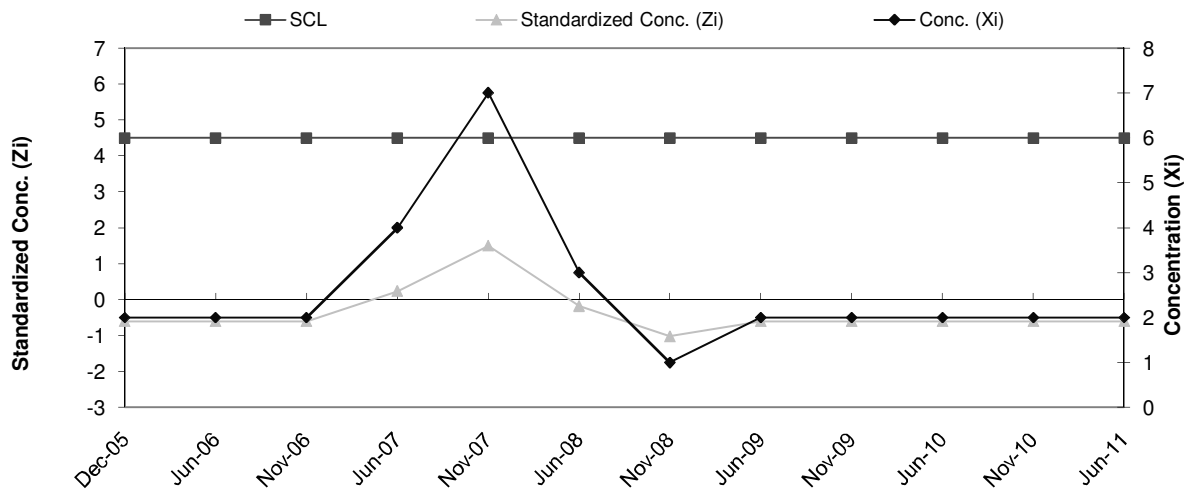


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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)	Standardized Conc. (Zi)
9	Dec-05	4.5	2	-0.60
10	Jun-06	4.5	2	-0.60
11	Nov-06	4.5	2	-0.60
12	Jun-07	4.5	4	0.24
13	Nov-07	4.5	7	1.50
14	Jun-08	4.5	3	-0.18
15	Nov-08	4.5	1	-1.02
16	Jun-09	4.5	2	-0.60
17	Nov-09	4.5	2	-0.60
18	Jun-10	4.5	2	-0.60
19	Nov-10	4.5	2	-0.60
20	Jun-11	4.5	2	-0.60

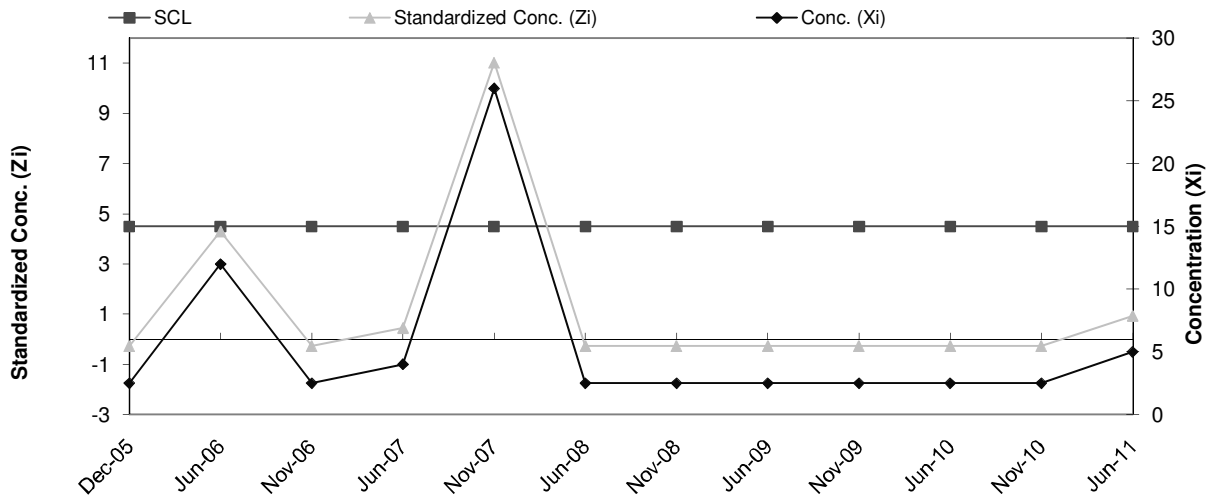


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

B-19a Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	May-98	2.5	3.06	2.08
2	May-01	2.5		
3	May-02	2.5		
4	Jun-03	2.5		
5	Nov-03	2.5		
6	Jun-04	2.5		
7	Dec-04	2.5		
8	Jun-05	7		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	2.5	-0.27
10	Jun-06	4.5	12	4.30
11	Nov-06	4.5	2.5	-0.27
12	Jun-07	4.5	4	0.45
13	Nov-07	4.5	26	11.03
14	Jun-08	4.5	2.5	-0.27
15	Nov-08	4.5	2.5	-0.27
16	Jun-09	4.5	2.5	-0.27
17	Nov-09	4.5	2.5	-0.27
19	Jun-10	4.5	2.5	-0.27
20	Nov-10	4.5	2.5	-0.27
21	Jun-11	4.5	5	0.93

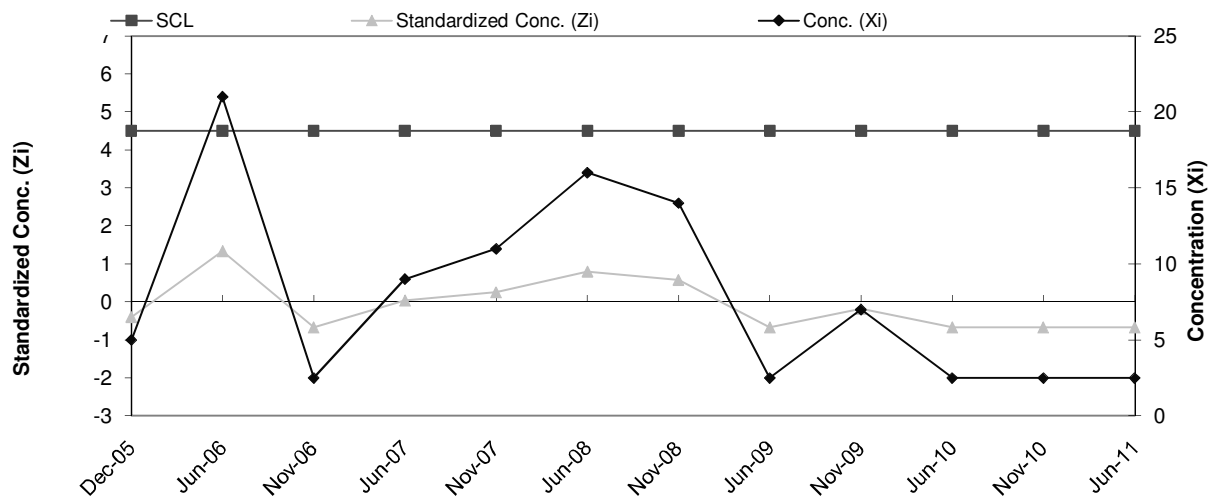


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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		

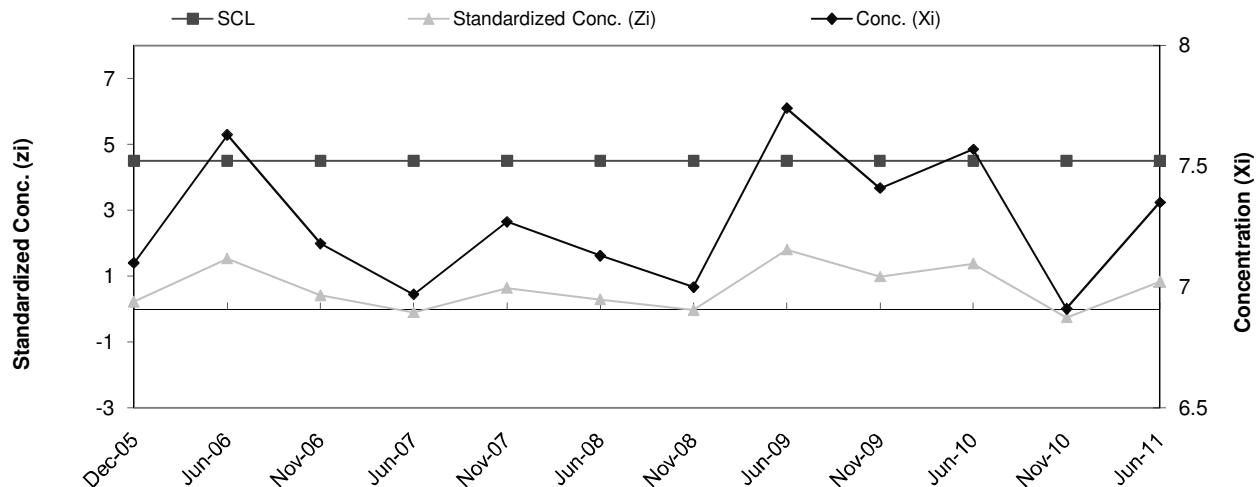
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	5	-0.40
10	Jun-06	4.5	21	1.33
11	Nov-06	4.5	2.5	-0.67
12	Jun-07	4.5	9	0.03
13	Nov-07	4.5	11	0.25
14	Jun-08	4.5	16	0.79
15	Nov-08	4.5	14	0.57
16	Jun-09	4.5	2.5	-0.67
17	Nov-09	4.5	7	-0.18
18	Jun-10	4.5	2.5	-0.67
19	Nov-10	4.5	2.5	-0.67
20	Jun-11	4.5	2.5	-0.67



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	May-98	6.8	7.01	0.40
2	May-01	7.1		
3	May-02	7.2		
4	Jun-03	6.9		
5	Nov-03	7.6		
6	Jun-04	7.2		
7	Dec-04	6.2		
8	Jun-05	7.1		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	7.1	0.22
10	Jun-06	4.5	7.6	1.53
11	Nov-06	4.5	7.2	0.42
12	Jun-07	4.5	7.0	-0.10
13	Nov-07	4.5	7.3	0.64
14	Jun-08	4.5	7.1	0.29
15	Nov-08	4.5	7.0	-0.03
16	Jun-09	4.5	7.7	1.80
17	Nov-09	4.5	7.4	0.99
18	Jun-10	4.5	7.6	1.38
19	Nov-10	4.5	6.9	-0.25
20	Jun-11	4.5	7.4	0.84

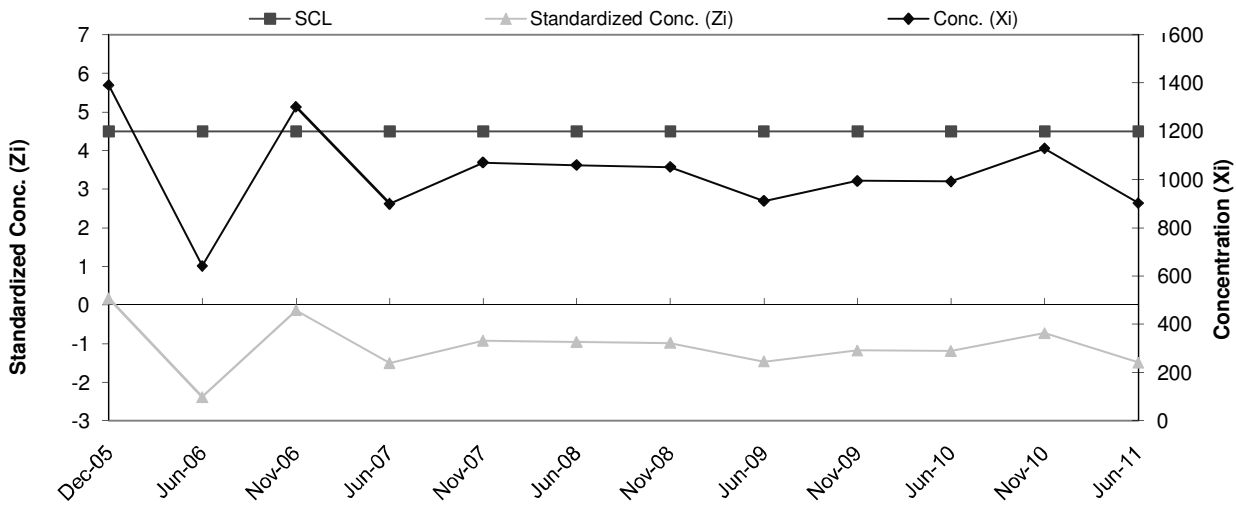


**COLDWATER ROAD LANDFILL FACILITY
 RCRA GROUND WATER DETECTION MONITORING SYSTEM
 SHEWART CONTROL CHART**

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		

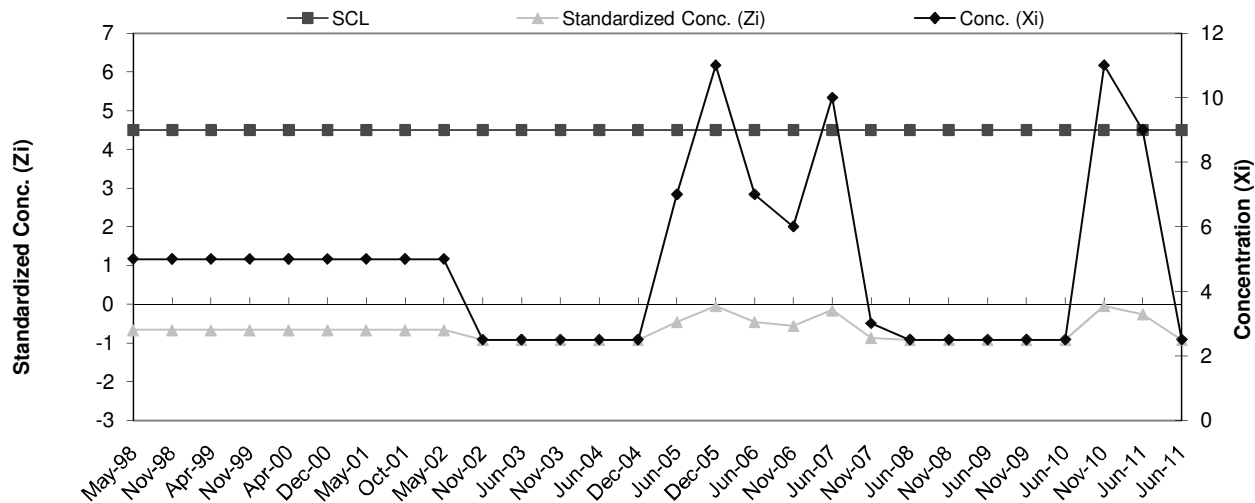
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	1390	0.17
10	Jun-06	4.5	642	-2.38
11	Nov-06	4.5	1300	-0.14
12	Jun-07	4.5	899	-1.50
13	Nov-07	4.5	1070	-0.92
14	Jun-08	4.5	1060	-0.96
15	Nov-08	4.5	1052	-0.98
16	Jun-09	4.5	911	-1.46
17	Nov-09	4.5	994	-1.18
18	Jun-10	4.5	992	-1.19
19	Nov-10	4.5	1128	-0.72
20	Jun-11	4.5	902	-1.49



**COLDWATER ROAD LANDFILL 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		

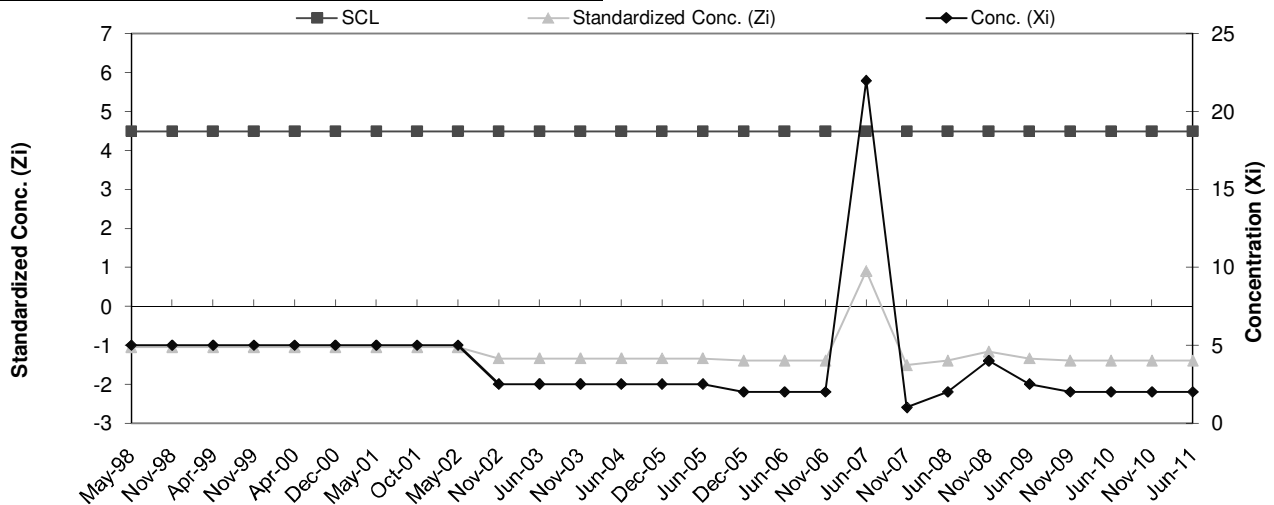
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.66
10	Nov-98	4.5	5	-0.66
11	Apr-99	4.5	5	-0.66
12	Nov-99	4.5	5	-0.66
13	Apr-00	4.5	5	-0.66
14	Dec-00	4.5	5	-0.66
15	May-01	4.5	5	-0.66
16	Oct-01	4.5	5	-0.66
17	May-02	4.5	5	-0.66
18	Nov-02	4.5	2.5	-0.92
19	Jun-03	4.5	2.5	-0.92
20	Nov-03	4.5	2.5	-0.92
21	Jun-04	4.5	2.5	-0.92
22	Dec-04	4.5	2.5	-0.92
23	Jun-05	4.5	7	-0.46
24	Dec-05	4.5	11	-0.05
25	Jun-06	4.5	7	-0.46
26	Nov-06	4.5	6	-0.56
27	Jun-07	4.5	10	-0.15
28	Nov-07	4.5	3	-0.87
29	Jun-08	4.5	2.5	-0.92
30	Nov-08	4.5	2.5	-0.92
31	Jun-09	4.5	2.5	-0.92
32	Nov-09	4.5	2.5	-0.92
33	Jun-10	4.5	2.5	-0.92
34	Nov-10	4.5	11	-0.05
35	Jun-11	4.5	9	-0.26
36	Jun-11	4.5	2.5	-0.92



**COLDWATER ROAD LANDFILL 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		

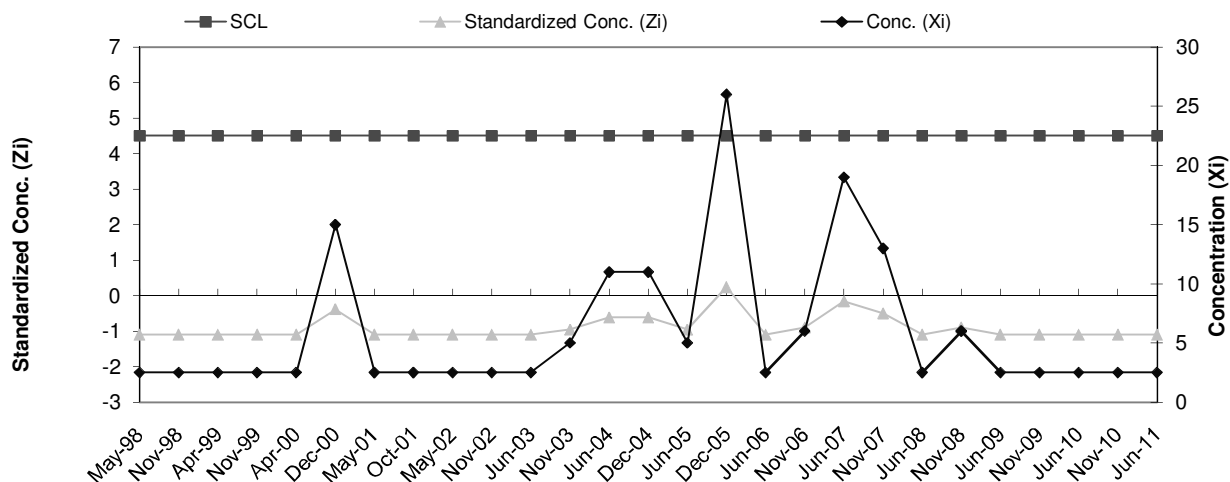
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.05
10	Nov-98	4.5	5	-1.05
11	Apr-99	4.5	5	-1.05
12	Nov-99	4.5	5	-1.05
13	Apr-00	4.5	5	-1.05
14	Dec-00	4.5	5	-1.05
15	May-01	4.5	5	-1.05
16	Oct-01	4.5	5	-1.05
17	May-02	4.5	5	-1.05
18	Nov-02	4.5	2.5	-1.34
19	Jun-03	4.5	2.5	-1.34
20	Nov-03	4.5	2.5	-1.34
21	Jun-04	4.5	2.5	-1.34
22	Dec-05	4.5	2.5	-1.34
23	Jun-05	4.5	2.5	-1.34
24	Dec-05	4.5	2	-1.39
25	Jun-06	4.5	2	-1.39
26	Nov-06	4.5	2	-1.39
27	Jun-07	4.5	22	0.90
28	Nov-07	4.5	1	-1.51
29	Jun-08	4.5	2	-1.39
30	Nov-08	4.5	4	-1.16
31	Jun-09	4.5	2.5	-1.34
32	Nov-09	4.5	2	-1.39
33	Jun-10	4.5	2	-1.39
34	Nov-10	4.5	2	-1.39
35	Jun-11	4.5	2	-1.39



**COLDWATER ROAD LANDFILL 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		

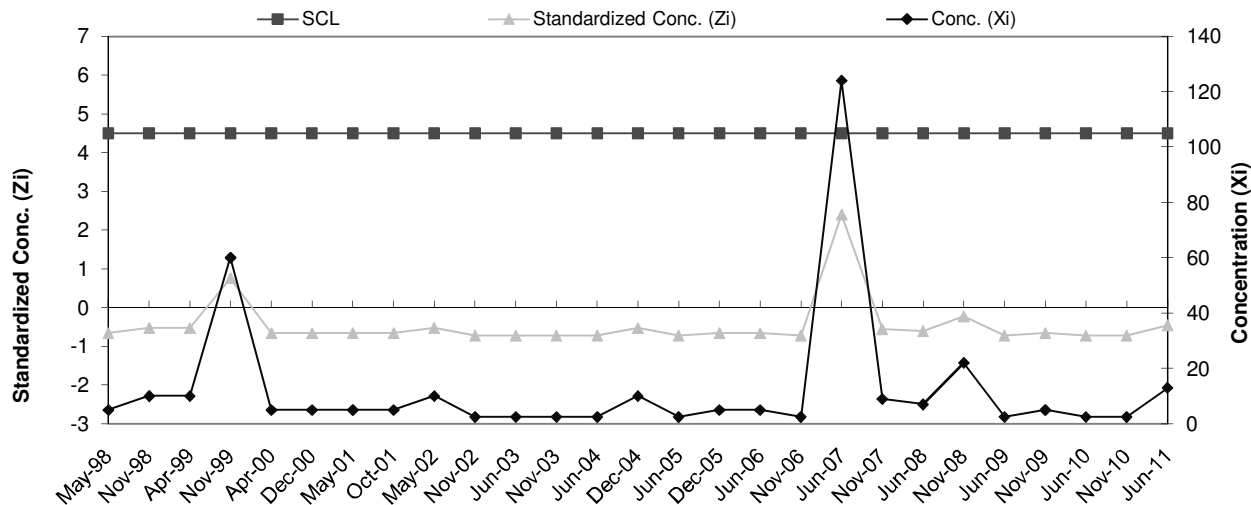
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-1.10
10	Nov-98	4.5	2.5	-1.10
11	Apr-99	4.5	2.5	-1.10
12	Nov-99	4.5	2.5	-1.10
13	Apr-00	4.5	2.5	-1.10
14	Dec-00	4.5	15	-0.39
15	May-01	4.5	2.5	-1.10
16	Oct-01	4.5	2.5	-1.10
17	May-02	4.5	2.5	-1.10
18	Nov-02	4.5	2.5	-1.10
19	Jun-03	4.5	2.5	-1.10
20	Nov-03	4.5	5	-0.96
21	Jun-04	4.5	11	-0.62
22	Dec-04	4.5	11	-0.62
23	Jun-05	4.5	5	-0.96
24	Dec-05	4.5	26	0.23
25	Jun-06	4.5	2.5	-1.10
26	Nov-06	4.5	6	-0.90
27	Jun-07	4.5	19	-0.16
28	Nov-07	4.5	13	-0.50
29	Jun-08	4.5	2.5	-1.10
30	Nov-08	4.5	6	-0.90
31	Jun-09	4.5	2.5	-1.10
32	Nov-09	4.5	2.5	-1.10
33	Jun-10	4.5	2.5	-1.10
34	Nov-10	4.5	2.5	-1.10
35	Jun-11	4.5	2.5	-1.10



**COLDWATER ROAD LANDFILL 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		

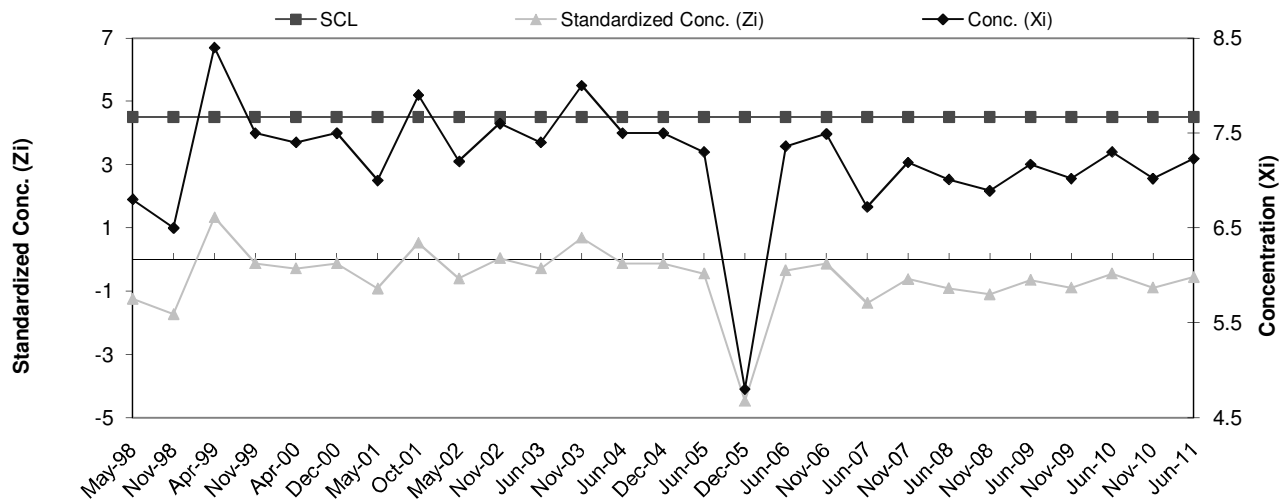
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.66
10	Nov-98	4.5	10	-0.53
11	Apr-99	4.5	10	-0.53
12	Nov-99	4.5	60	0.75
13	Apr-00	4.5	5	-0.66
14	Dec-00	4.5	5	-0.66
15	May-01	4.5	5	-0.66
16	Oct-01	4.5	5	-0.66
17	May-02	4.5	10	-0.53
18	Nov-02	4.5	2.5	-0.72
19	Jun-03	4.5	2.5	-0.72
20	Nov-03	4.5	2.5	-0.72
21	Jun-04	4.5	2.5	-0.72
22	Dec-04	4.5	10	-0.53
23	Jun-05	4.5	2.5	-0.72
24	Dec-05	4.5	5	-0.66
25	Jun-06	4.5	5	-0.66
26	Nov-06	4.5	2.5	-0.72
27	Jun-07	4.5	124	2.40
28	Nov-07	4.5	9	-0.56
29	Jun-08	4.5	7	-0.61
30	Nov-08	4.5	22	-0.22
31	Jun-09	4.5	2.5	-0.72
32	Nov-09	4.5	5	-0.66
33	Jun-10	4.5	2.5	-0.72
34	Nov-10	4.5	2.5	-0.72
35	Jun-11	4.5	13	-0.45



**COLDWATER ROAD LANDFILL 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)	Standardized Conc. (Zi)
9	May-98	4.5	6.8	-1.25
10	Nov-98	4.5	6.5	-1.73
11	Apr-99	4.5	8.4	1.33
12	Nov-99	4.5	7.5	-0.12
13	Apr-00	4.5	7.4	-0.28
14	Dec-00	4.5	7.5	-0.12
15	May-01	4.5	7.0	-0.93
16	Oct-01	4.5	7.9	0.52
17	May-02	4.5	7.2	-0.60
18	Nov-02	4.5	7.6	0.04
19	Jun-03	4.5	7.4	-0.28
20	Nov-03	4.5	8.0	0.68
21	Jun-04	4.5	7.5	-0.12
22	Dec-04	4.5	7.5	-0.12
23	Jun-05	4.5	7.3	-0.44
24	Dec-05	4.5	4.8	-4.47
25	Jun-06	4.5	7.4	-0.35
26	Nov-06	4.5	7.5	-0.14
27	Jun-07	4.5	6.7	-1.38
28	Nov-07	4.5	7.2	-0.62
29	Jun-08	4.5	7.0	-0.91
30	Nov-08	4.5	6.9	-1.10
31	Jun-09	4.5	7.2	-0.65
32	Nov-09	4.5	7.0	-0.89
33	Jun-10	4.5	7.3	-0.44
34	Nov-10	4.5	7.0	-0.89
35	Jun-11	4.5	7.2	-0.56

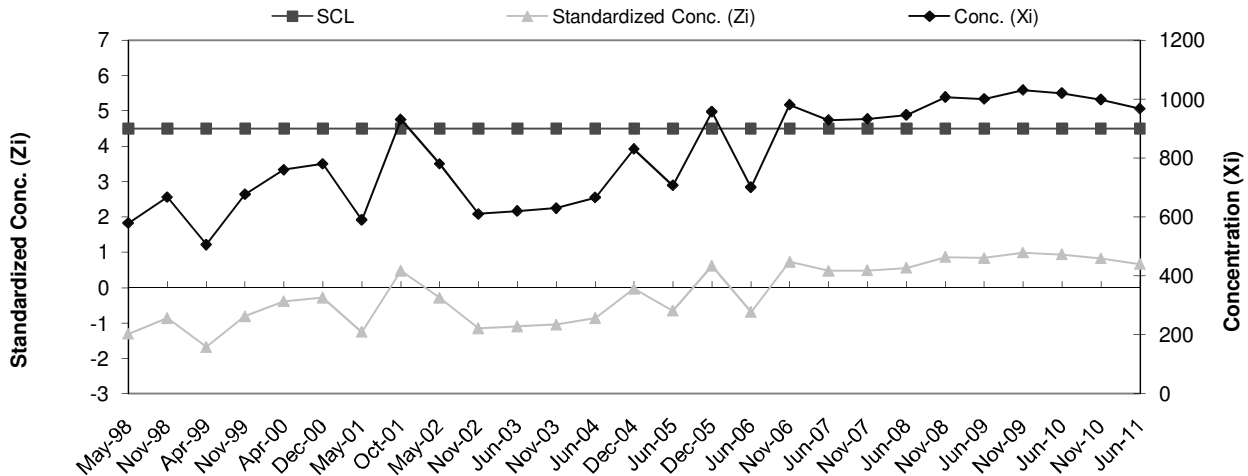


**COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART**

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		

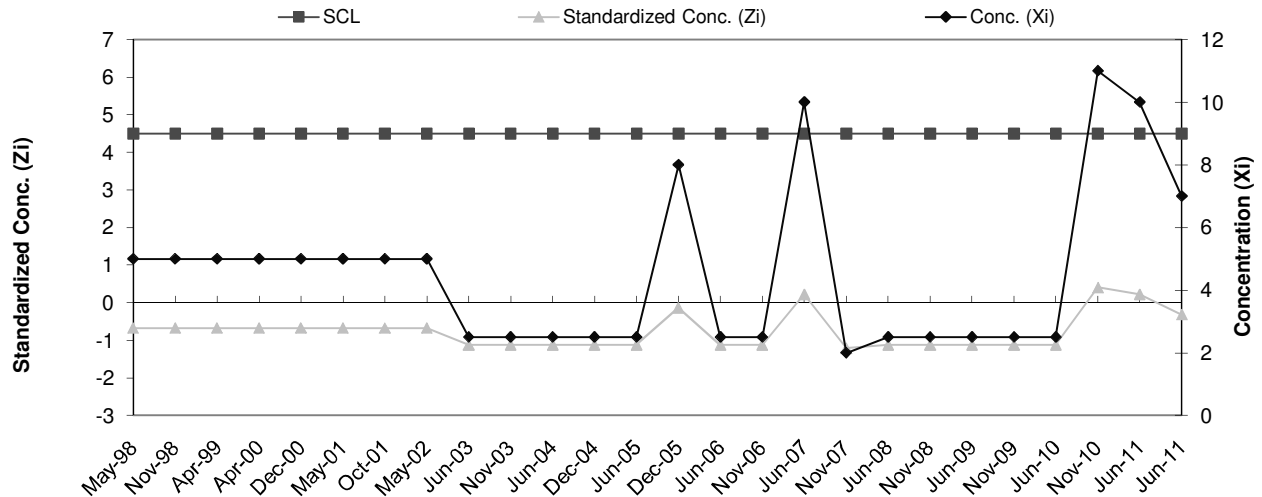
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	579	-1.31
10	Nov-98	4.5	667	-0.86
11	Apr-99	4.5	506	-1.68
12	Nov-99	4.5	677	-0.81
13	Apr-00	4.5	760	-0.39
14	Dec-00	4.5	780	-0.28
15	May-01	4.5	590	-1.25
16	Oct-01	4.5	930	0.48
17	May-02	4.5	780	-0.28
18	Nov-02	4.5	610	-1.15
19	Jun-03	4.5	620	-1.10
20	Nov-03	4.5	630	-1.05
21	Jun-04	4.5	666	-0.86
22	Dec-04	4.5	830	-0.03
23	Jun-05	4.5	707	-0.65
24	Dec-05	4.5	957	0.62
25	Jun-06	4.5	701	-0.69
26	Nov-06	4.5	980	0.73
27	Jun-07	4.5	929	0.47
28	Nov-07	4.5	932	0.49
29	Jun-08	4.5	946	0.56
30	Nov-08	4.5	1006	0.87
31	Jun-09	4.5	1000	0.84
32	Nov-09	4.5	1030	0.99
33	Jun-10	4.5	1020	0.94
34	Nov-10	4.5	998	0.83
35	Jun-11	4.5	967	0.67



**COLDWATER ROAD LANDFILL 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		

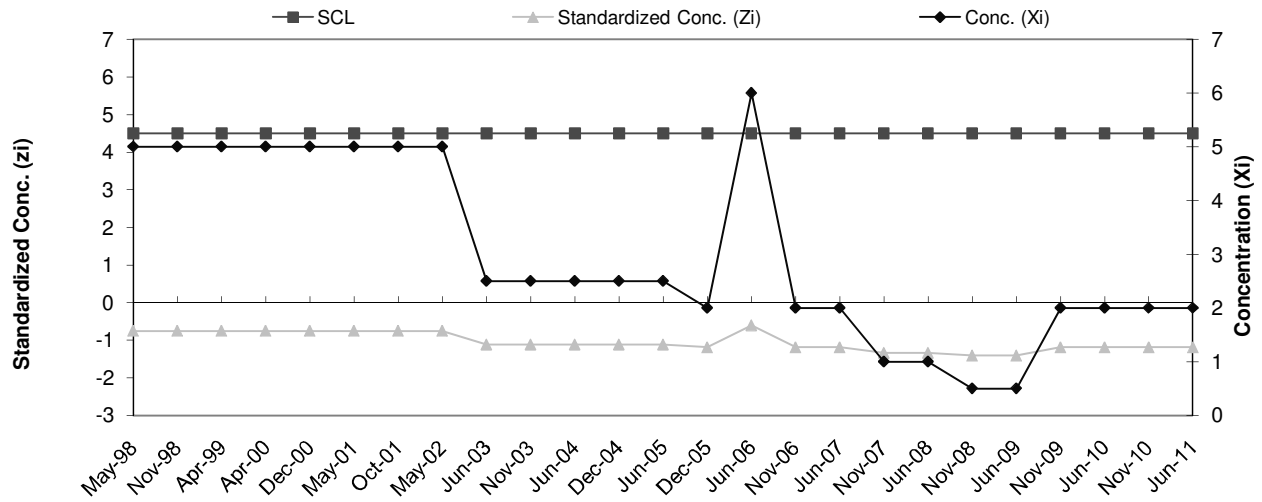
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.67
10	Nov-98	4.5	5	-0.67
11	Apr-99	4.5	5	-0.67
12	Apr-00	4.5	5	-0.67
13	Dec-00	4.5	5	-0.67
14	May-01	4.5	5	-0.67
15	Oct-01	4.5	5	-0.67
16	May-02	4.5	5	-0.67
18	Jun-03	4.5	2.5	-1.12
19	Nov-03	4.5	2.5	-1.12
20	Jun-04	4.5	2.5	-1.12
21	Dec-04	4.5	2.5	-1.12
22	Jun-05	4.5	2.5	-1.12
23	Dec-05	4.5	8	-0.13
24	Jun-06	4.5	2.5	-1.12
25	Nov-06	4.5	2.5	-1.12
26	Jun-07	4.5	10	0.23
27	Nov-07	4.5	2	-1.21
28	Jun-08	4.5	2.5	-1.12
29	Nov-08	4.5	2.5	-1.12
30	Jun-09	4.5	2.5	-1.12
31	Nov-09	4.5	2.5	-1.12
32	Jun-10	4.5	2.5	-1.12
33	Nov-10	4.5	11	0.41
34	Jun-11	4.5	10	0.23
35	Jun-11	4.5	7	-0.31



**COLDWATER ROAD LANDFILL 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		

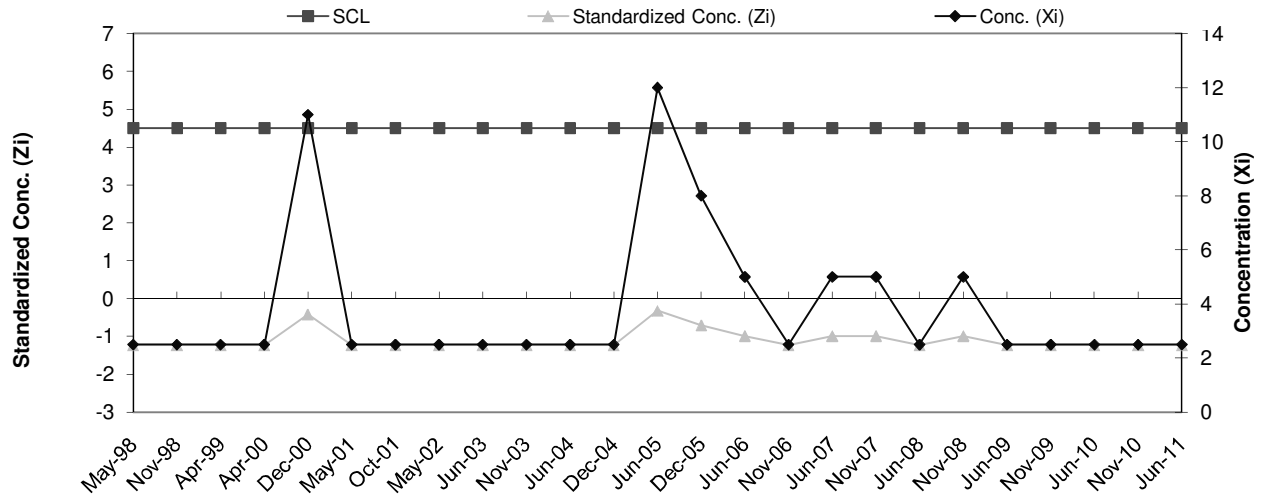
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.75
10	Nov-98	4.5	5	-0.75
11	Apr-99	4.5	5	-0.75
12	Apr-00	4.5	5	-0.75
13	Dec-00	4.5	5	-0.75
14	May-01	4.5	5	-0.75
15	Oct-01	4.5	5	-0.75
16	May-02	4.5	5	-0.75
18	Jun-03	4.5	2.5	-1.12
19	Nov-03	4.5	2.5	-1.12
20	Jun-04	4.5	2.5	-1.12
21	Dec-04	4.5	2.5	-1.12
22	Jun-05	4.5	2.5	-1.12
23	Dec-05	4.5	2	-1.19
24	Jun-06	4.5	6	-0.60
25	Nov-06	4.5	2	-1.19
26	Jun-07	4.5	2	-1.19
27	Nov-07	4.5	1	-1.34
28	Jun-08	4.5	1	-1.34
29	Nov-08	4.5	0.5	-1.41
30	Jun-09	4.5	0.5	-1.41
31	Nov-09	4.5	2	-1.19
32	Jun-10	4.5	2	-1.19
33	Nov-10	4.5	2	-1.19
34	Jun-11	4.5	2	-1.19



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	15.37	10.43
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	8		
8	Nov-97	30		

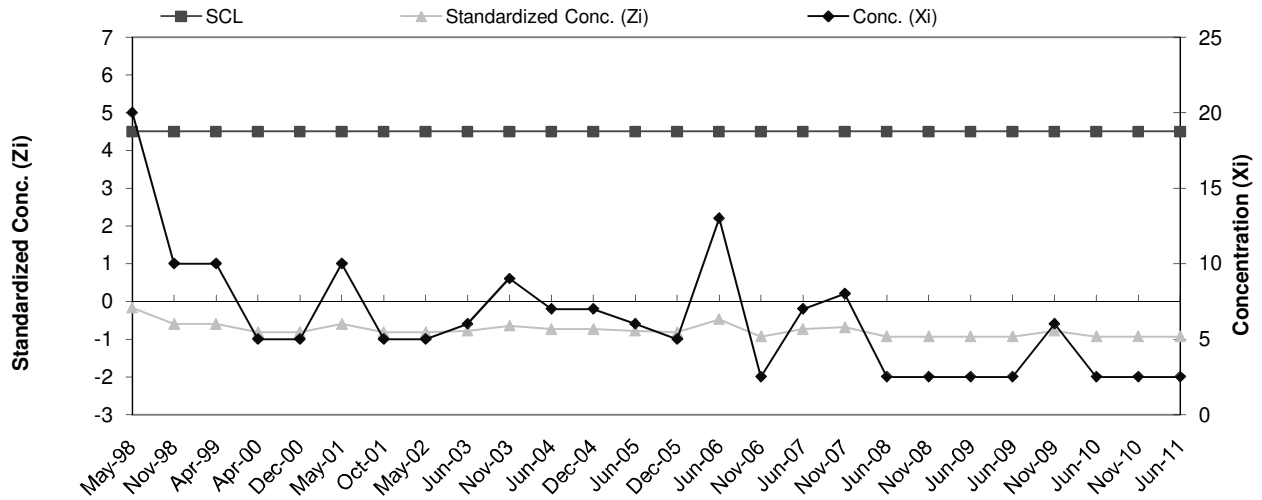
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-1.23
10	Nov-98	4.5	2.5	-1.23
11	Apr-99	4.5	2.5	-1.23
12	Apr-00	4.5	2.5	-1.23
13	Dec-00	4.5	11	-0.42
14	May-01	4.5	2.5	-1.23
15	Oct-01	4.5	2.5	-1.23
16	May-02	4.5	2.5	-1.23
18	Jun-03	4.5	2.5	-1.23
19	Nov-03	4.5	2.5	-1.23
20	Jun-04	4.5	2.5	-1.23
20	Dec-04	4.5	2.5	-1.23
21	Jun-05	4.5	12	-0.32
22	Dec-05	4.5	8	-0.71
23	Jun-06	4.5	5	-0.99
24	Nov-06	4.5	2.5	-1.23
25	Jun-07	4.5	5	-0.99
26	Nov-07	4.5	5	-0.99
27	Jun-08	4.5	2.5	-1.23
28	Nov-08	4.5	5	-0.99
30	Jun-09	4.5	2.5	-1.23
31	Nov-09	4.5	2.5	-1.23
32	Jun-10	4.5	2.5	-1.23
33	Nov-10	4.5	2.5	-1.23
34	Jun-11	4.5	2.5	-1.23



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	61	23.89	23.00
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	50		
6	Nov-96	40		
7	May-97	5		
8	Nov-97	5		

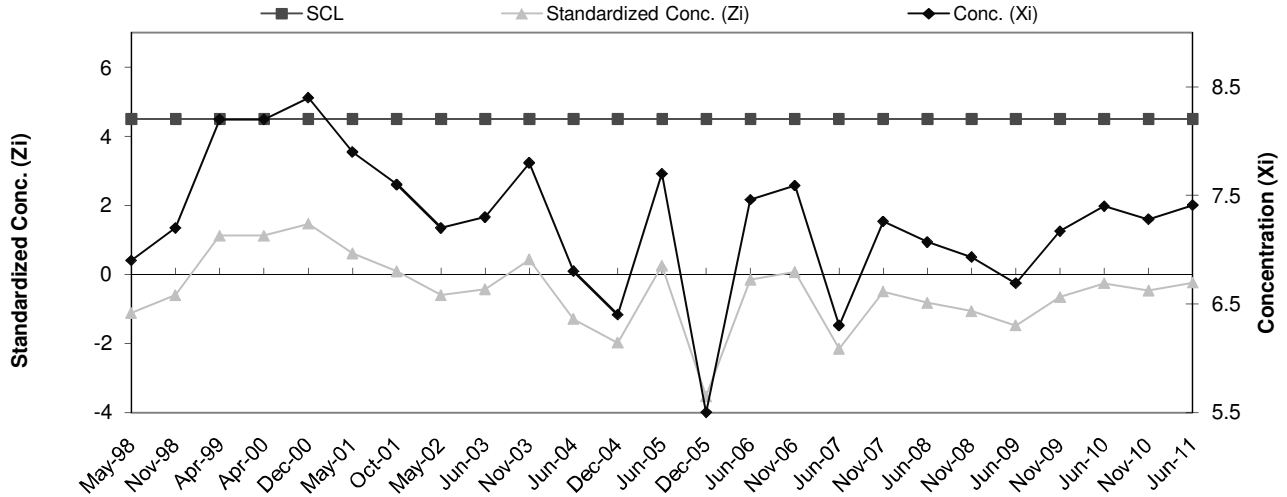
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	20	-0.17
10	Nov-98	4.5	10	-0.60
11	Apr-99	4.5	10	-0.60
12	Apr-00	4.5	5	-0.82
13	Dec-00	4.5	5	-0.82
14	May-01	4.5	10	-0.60
15	Oct-01	4.5	5	-0.82
16	May-02	4.5	5	-0.82
18	Jun-03	4.5	6	-0.78
19	Nov-03	4.5	9	-0.65
20	Jun-04	4.5	7	-0.73
21	Dec-04	4.5	7	-0.73
22	Jun-05	4.5	6	-0.78
23	Dec-05	4.5	5	-0.82
24	Jun-06	4.5	13	-0.47
25	Nov-06	4.5	2.5	-0.93
26	Jun-07	4.5	7	-0.73
27	Nov-07	4.5	8	-0.69
28	Jun-08	4.5	2.5	-0.93
29	Nov-08	4.5	2.5	-0.93
30	Jun-09	4.5	2.5	-0.93
31	Jun-09	4.5	2.5	-0.93
32	Nov-09	4.5	6	-0.78
33	Jun-10	4.5	2.5	-0.93
34	Nov-10	4.5	2.5	-0.93
35	Jun-11	4.5	2.5	-0.93



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	8.3	7.55	0.58
2	Aug-95	8.1		
3	Feb-96	7.7		
4	Jun-96	7.6		
5	Aug-96	7.9		
6	Nov-96	7.3		
7	May-97	6.8		
8	Nov-97	6.7		

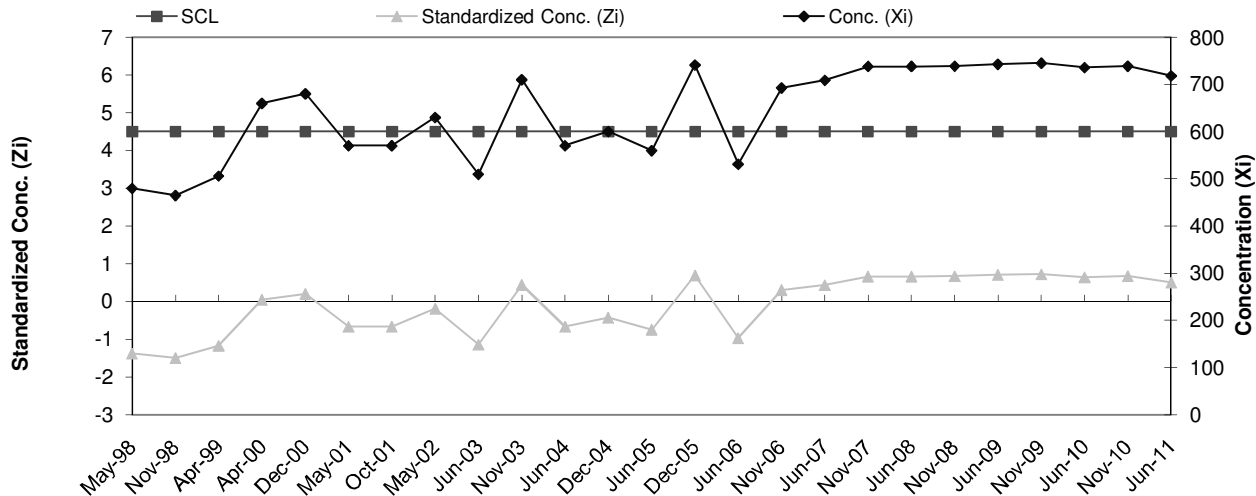
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.9	-1.12
10	Nov-98	4.5	7.2	-0.60
11	Apr-99	4.5	8.2	1.12
12	Apr-00	4.5	8.2	1.12
13	Dec-00	4.5	8.4	1.46
14	May-01	4.5	7.9	0.60
15	Oct-01	4.5	7.6	0.09
16	May-02	4.5	7.2	-0.60
18	Jun-03	4.5	7.3	-0.43
19	Nov-03	4.5	7.8	0.43
20	Jun-04	4.5	6.8	-1.29
21	Dec-04	4.5	6.4	-1.98
22	Jun-05	4.5	7.7	0.26
23	Dec-05	4.5	5.5	-3.53
24	Jun-06	4.5	7.5	-0.16
25	Nov-06	4.5	7.6	0.07
26	Jun-07	4.5	6.3	-2.15
27	Nov-07	4.5	7.3	-0.50
28	Jun-08	4.5	7.1	-0.83
29	Nov-08	4.5	6.9	-1.07
30	Jun-09	4.5	6.7	-1.48
31	Nov-09	4.5	7.2	-0.65
32	Jun-10	4.5	7.4	-0.26
33	Nov-10	4.5	7.3	-0.47
34	Jun-11	4.5	7.4	-0.24



**COLDWATER ROAD LANDFILL 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		

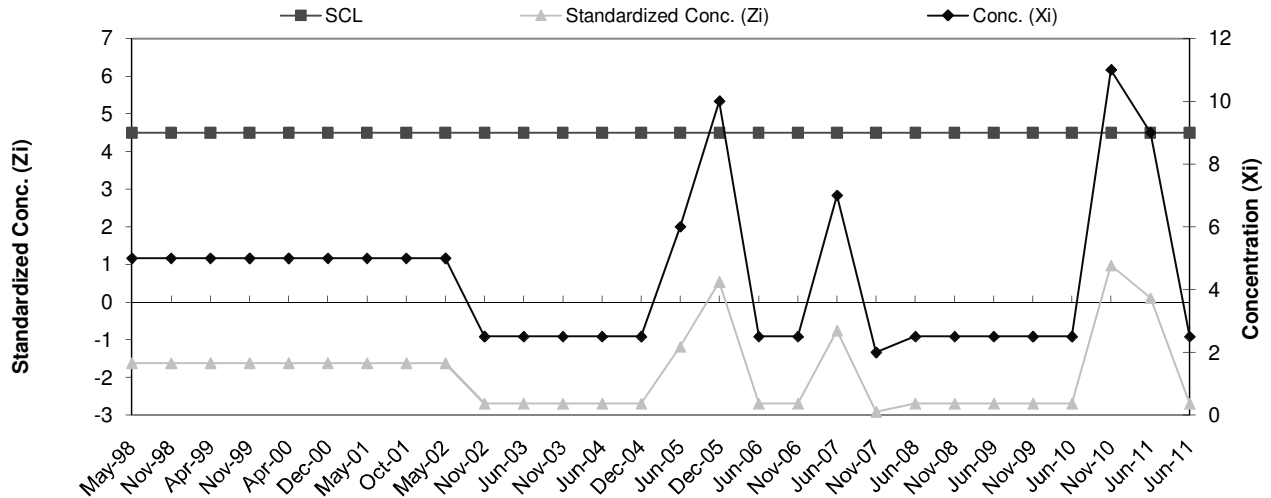
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	480	-1.37
10	Nov-98	4.5	465	-1.49
11	Apr-99	4.5	506	-1.17
12	Apr-00	4.5	660	0.05
13	Dec-00	4.5	680	0.20
14	May-01	4.5	570	-0.66
15	Oct-01	4.5	570	-0.66
16	May-02	4.5	630	-0.19
18	Jun-03	4.5	510	-1.14
19	Nov-03	4.5	710	0.44
20	Jun-04	4.5	570	-0.66
21	Dec-04	4.5	600	-0.43
22	Jun-05	4.5	560	-0.74
23	Dec-05	4.5	741	0.69
24	Jun-06	4.5	531.3	-0.97
25	Nov-06	4.5	693	0.31
26	Jun-07	4.5	709	0.43
27	Nov-07	4.5	738	0.66
28	Jun-08	4.5	738	0.66
29	Nov-08	4.5	739	0.67
30	Jun-09	4.5	743	0.70
31	Nov-09	4.5	745	0.72
32	Jun-10	4.5	736	0.65
33	Nov-10	4.5	739	0.67
34	Jun-11	4.5	718	0.50



**COLDWATER ROAD LANDFILL 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		

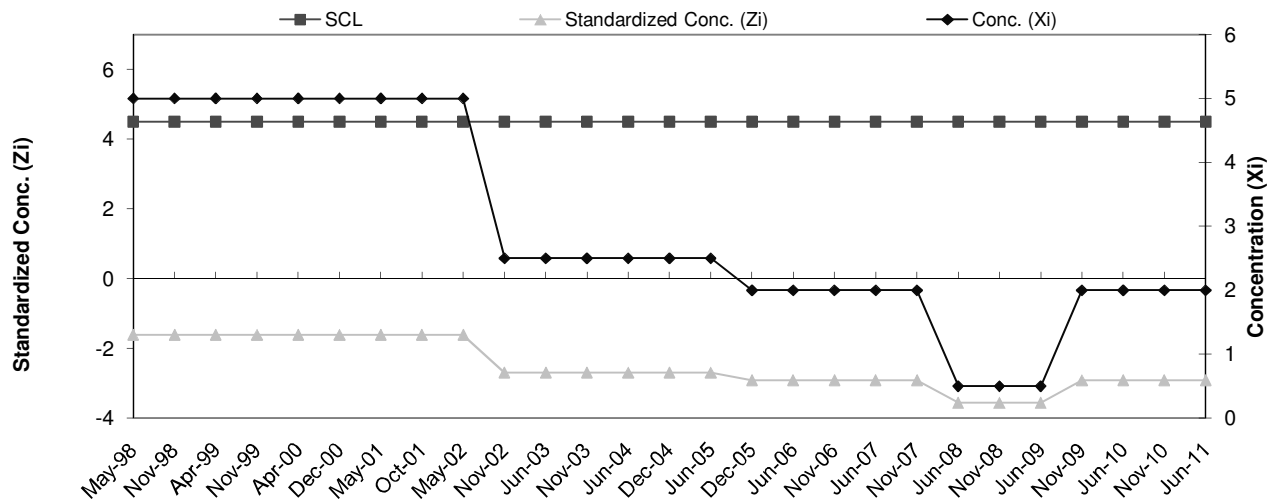
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.62
10	Nov-98	4.5	5	-1.62
11	Apr-99	4.5	5	-1.62
12	Nov-99	4.5	5	-1.62
13	Apr-00	4.5	5	-1.62
14	Dec-00	4.5	5	-1.62
15	May-01	4.5	5	-1.62
16	Oct-01	4.5	5	-1.62
17	May-02	4.5	5	-1.62
18	Nov-02	4.5	2.5	-2.70
19	Jun-03	4.5	2.5	-2.70
20	Nov-03	4.5	2.5	-2.70
21	Jun-04	4.5	2.5	-2.70
22	Dec-04	4.5	2.5	-2.70
23	Jun-05	4.5	6	-1.19
24	Dec-05	4.5	10	0.54
25	Jun-06	4.5	2.5	-2.70
26	Nov-06	4.5	2.5	-2.70
27	Jun-07	4.5	7	-0.76
28	Nov-07	4.5	2	-2.92
29	Jun-08	4.5	2.5	-2.70
30	Nov-08	4.5	2.5	-2.70
31	Jun-09	4.5	2.5	-2.70
32	Nov-09	4.5	2.5	-2.70
33	Jun-10	4.5	2.5	-2.70
34	Nov-10	4.5	11	0.97
35	Jun-11	4.5	9	0.11
36	Jun-11	4.5	2.5	-2.70



**COLDWATER ROAD LANDFILL 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		

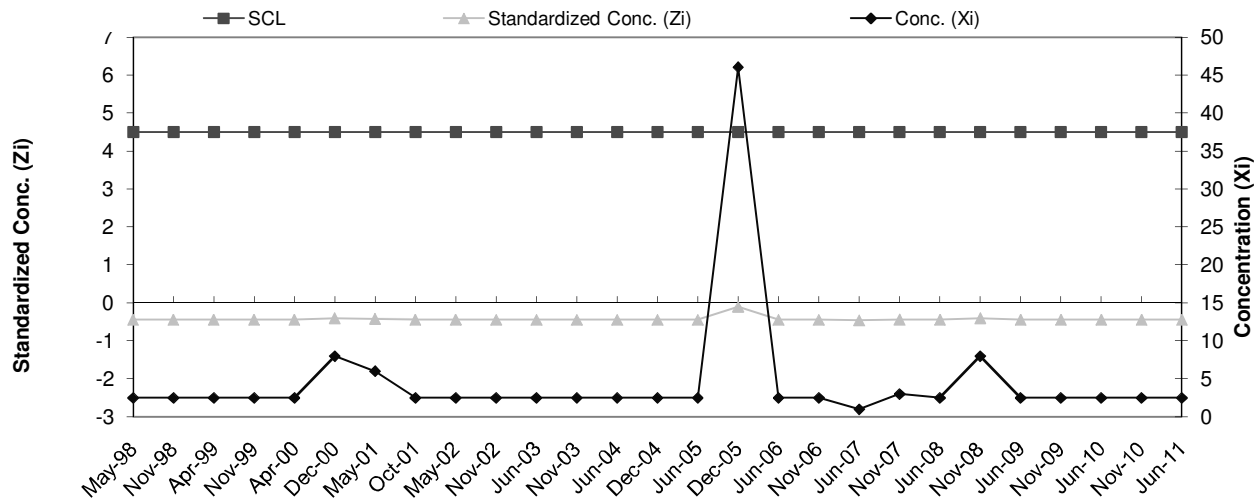
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.62
10	Nov-98	4.5	5	-1.62
11	Apr-99	4.5	5	-1.62
12	Nov-99	4.5	5	-1.62
13	Apr-00	4.5	5	-1.62
14	Dec-00	4.5	5	-1.62
15	May-01	4.5	5	-1.62
16	Oct-01	4.5	5	-1.62
17	May-02	4.5	5	-1.62
18	Nov-02	4.5	2.5	-2.70
19	Jun-03	4.5	2.5	-2.70
20	Nov-03	4.5	2.5	-2.70
21	Jun-04	4.5	2.5	-2.70
22	Dec-04	4.5	2.5	-2.70
23	Jun-05	4.5	2.5	-2.70
24	Dec-05	4.5	2	-2.92
25	Jun-06	4.5	2	-2.92
26	Nov-06	4.5	2	-2.92
27	Jun-07	4.5	2	-2.92
28	Nov-07	4.5	2	-2.92
29	Jun-08	4.5	0.5	-3.56
30	Nov-08	4.5	0.5	-3.56
31	Jun-09	4.5	0.5	-3.56
32	Nov-09	4.5	2	-2.92
33	Jun-10	4.5	2	-2.92
34	Nov-10	4.5	2	-2.92
35	Jun-11	4.5	2	-2.92



**COLDWATER ROAD LANDFILL 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		

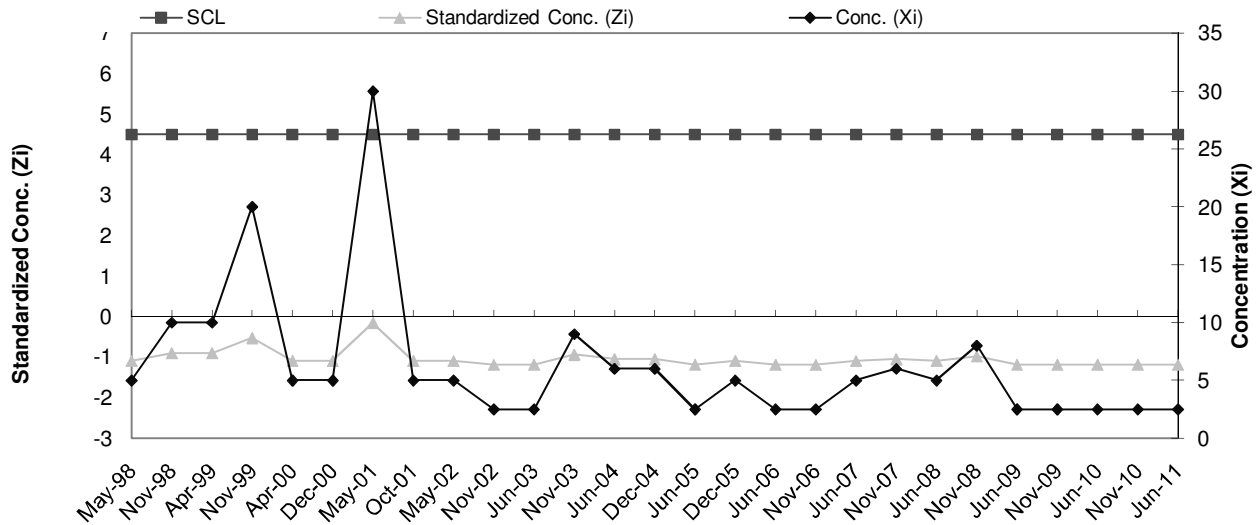
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-0.45
10	Nov-98	4.5	2.5	-0.45
11	Apr-99	4.5	2.5	-0.45
12	Nov-99	4.5	2.5	-0.45
13	Apr-00	4.5	2.5	-0.45
14	Dec-00	4.5	8	-0.40
15	May-01	4.5	6	-0.42
16	Oct-01	4.5	2.5	-0.45
17	May-02	4.5	2.5	-0.45
18	Nov-02	4.5	2.5	-0.45
19	Jun-03	4.5	2.5	-0.45
20	Nov-03	4.5	2.5	-0.45
21	Jun-04	4.5	2.5	-0.45
22	Dec-04	4.5	2.5	-0.45
23	Jun-05	4.5	2.5	-0.45
24	Dec-05	4.5	46	-0.10
25	Jun-06	4.5	2.5	-0.45
26	Nov-06	4.5	2.5	-0.45
27	Jun-07	4.5	1	-0.46
28	Nov-07	4.5	3	-0.44
29	Jun-08	4.5	2.5	-0.45
30	Nov-08	4.5	8	-0.40
31	Jun-09	4.5	2.5	-0.45
32	Nov-09	4.5	2.5	-0.45
33	Jun-10	4.5	2.5	-0.45
34	Nov-10	4.5	2.5	-0.45
35	Jun-11	4.5	2.5	-0.45



COLDWATER ROAD LANDFILL 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		

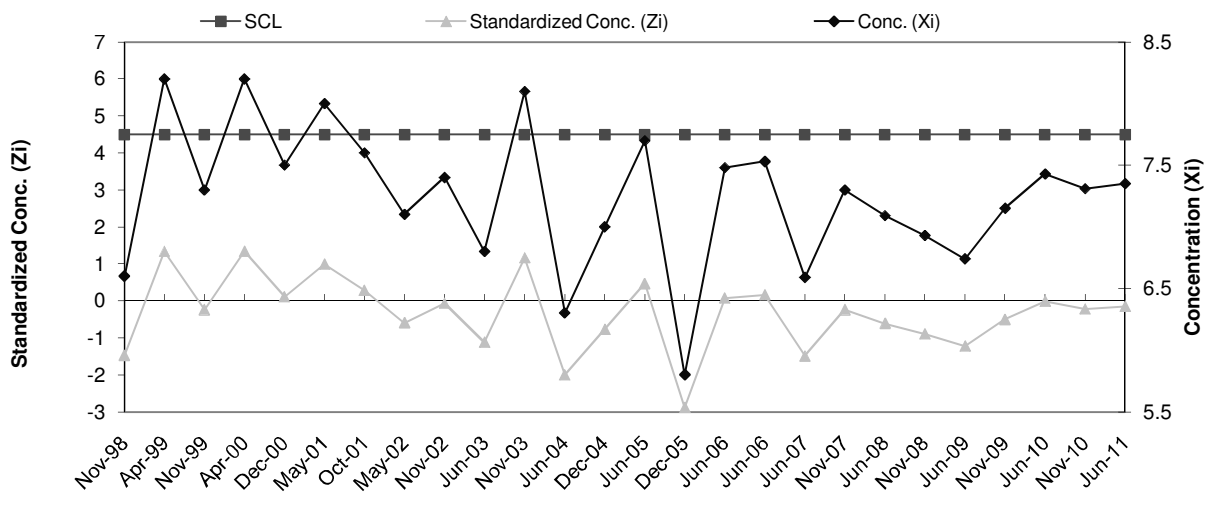
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-1.09
10	Nov-98	4.5	10	-0.90
11	Apr-99	4.5	10	-0.90
12	Nov-99	4.5	20	-0.52
13	Apr-00	4.5	5	-1.09
14	Dec-00	4.5	5	-1.09
15	May-01	4.5	30	-0.15
16	Oct-01	4.5	5	-1.09
17	May-02	4.5	5	-1.09
18	Nov-02	4.5	2.5	-1.18
19	Jun-03	4.5	2.5	-1.18
20	Nov-03	4.5	9	-0.94
21	Jun-04	4.5	6	-1.05
22	Dec-04	4.5	6	-1.05
23	Jun-05	4.5	2.5	-1.18
24	Dec-05	4.5	5	-1.09
25	Jun-06	4.5	2.5	-1.18
26	Nov-06	4.5	2.5	-1.18
27	Jun-07	4.5	5	-1.09
28	Nov-07	4.5	6	-1.05
29	Jun-08	4.5	5	-1.09
30	Nov-08	4.5	8	-0.97
31	Jun-09	4.5	2.5	-1.18
32	Nov-09	4.5	2.5	-1.18
33	Jun-10	4.5	2.5	-1.18
34	Nov-10	4.5	2.5	-1.18
35	Jun-11	4.5	2.5	-1.18



**COLDWATER ROAD LANDFILL 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		

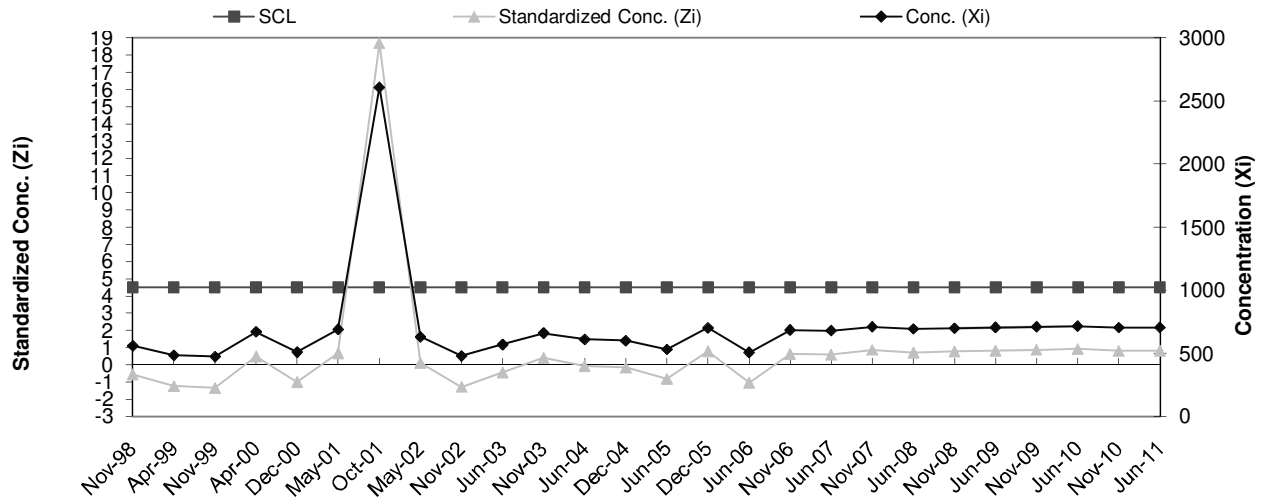
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	6.6	-1.47
10	Apr-99	4.5	8.2	1.34
11	Nov-99	4.5	7.3	-0.24
12	Apr-00	4.5	8.2	1.34
13	Dec-00	4.5	7.5	0.11
14	May-01	4.5	8	0.99
15	Oct-01	4.5	7.6	0.29
16	May-02	4.5	7.1	-0.59
17	Nov-02	4.5	7.4	-0.07
18	Jun-03	4.5	6.8	-1.12
19	Nov-03	4.5	8.1	1.17
20	Jun-04	4.5	6.3	-2.00
21	Dec-04	4.5	7	-0.77
22	Jun-05	4.5	7.7	0.46
23	Dec-05	4.5	5.8	-2.88
24	Jun-06	4.5	7.5	0.07
25	Jun-06	4.5	7.5	0.16
26	Jun-07	4.5	6.6	-1.49
27	Nov-07	4.5	7.3	-0.24
28	Jun-08	4.5	7.1	-0.61
29	Nov-08	4.5	6.9	-0.89
30	Jun-09	4.5	6.7	-1.23
31	Nov-09	4.5	7.2	-0.51
32	Jun-10	4.5	7.4	-0.01
33	Nov-10	4.5	7.3	-0.22
34	Jun-11	4.5	7.4	-0.15



**COLDWATER ROAD LANDFILL 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		

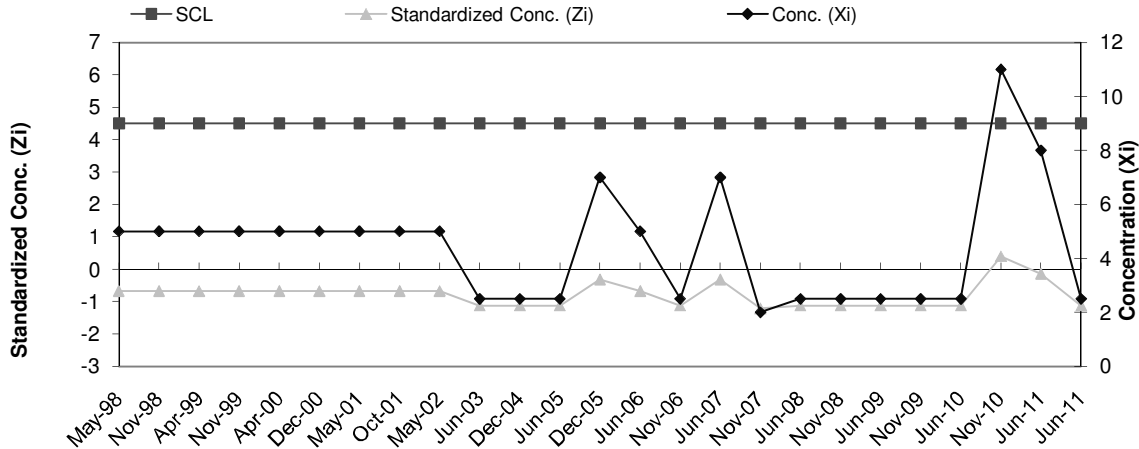
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	559	-0.55
10	Apr-99	4.5	485	-1.24
11	Nov-99	4.5	474	-1.34
12	Apr-00	4.5	670	0.49
13	Dec-00	4.5	510	-1.01
14	May-01	4.5	690	0.68
15	Oct-01	4.5	2610	18.68
16	May-02	4.5	630	0.12
17	Nov-02	4.5	480	-1.29
18	Jun-03	4.5	570	-0.44
19	Nov-03	4.5	660	0.40
20	Jun-04	4.5	610	-0.07
21	Dec-04	4.5	600	-0.16
22	Jun-05	4.5	531	-0.81
23	Dec-05	4.5	702	0.79
24	Jun-06	4.5	507	-1.04
25	Nov-06	4.5	684	0.63
26	Jun-07	4.5	680	0.59
27	Nov-07	4.5	710	0.87
28	Jun-08	4.5	694	0.72
29	Nov-08	4.5	699	0.77
30	Jun-09	4.5	705	0.82
31	Nov-09	4.5	710	0.87
32	Jun-10	4.5	715	0.92
33	Nov-10	4.5	704	0.81
34	Jun-11	4.5	705	0.82



**COLDWATER ROAD LANDFILL 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		

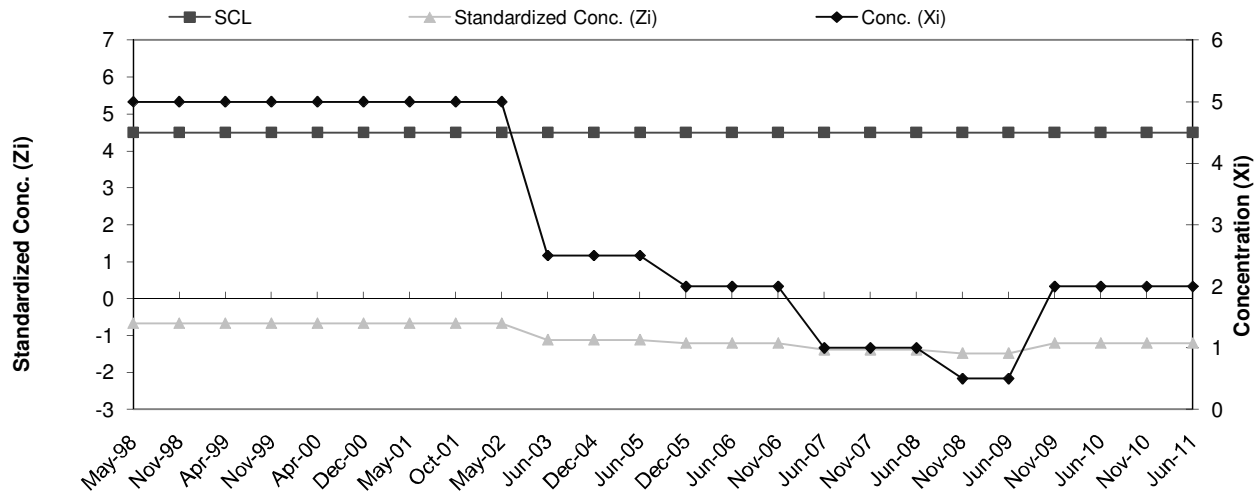
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.68
10	Nov-98	4.5	5	-0.68
11	Apr-99	4.5	5	-0.68
12	Nov-99	4.5	5	-0.68
13	Apr-00	4.5	5	-0.68
14	Dec-00	4.5	5	-0.68
15	May-01	4.5	5	-0.68
16	Oct-01	4.5	5	-0.68
17	May-02	4.5	5	-0.68
18	Jun-03	4.5	2.5	-1.12
19	Dec-04	4.5	2.5	-1.12
20	Jun-05	4.5	2.5	-1.12
21	Dec-05	4.5	7.0	-0.32
22	Jun-06	4.5	5.0	-0.68
23	Nov-06	4.5	2.5	-1.12
24	Jun-07	4.5	7	-0.32
25	Nov-07	4.5	2	-1.21
26	Jun-08	4.5	2.5	-1.12
27	Nov-08	4.5	2.5	-1.12
28	Jun-09	4.5	2.5	-1.12
29	Nov-09	4.5	2.5	-1.12
30	Jun-10	4.5	2.5	-1.12
31	Nov-10	4.5	11	0.39
32	Jun-11	4.5	8	-0.14
33	Jun-11	4.5	2.5	-1.12



**COLDWATER ROAD LANDFILL 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		

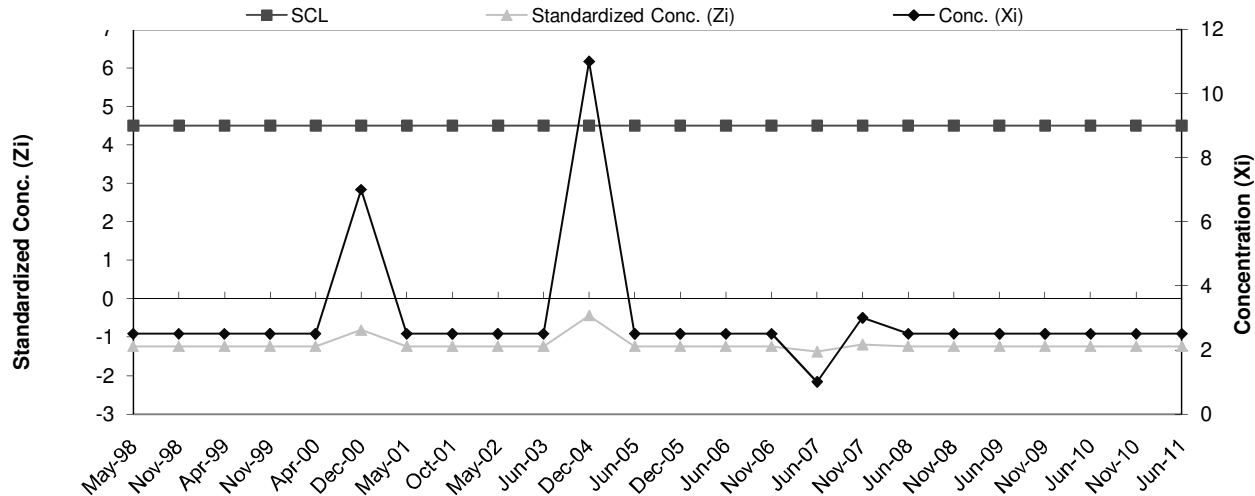
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.67
10	Nov-98	4.5	5	-0.67
11	Apr-99	4.5	5	-0.67
12	Nov-99	4.5	5	-0.67
13	Apr-00	4.5	5	-0.67
14	Dec-00	4.5	5	-0.67
15	May-01	4.5	5	-0.67
16	Oct-01	4.5	5	-0.67
17	May-02	4.5	5	-0.67
18	Jun-03	4.5	2.5	-1.12
19	Dec-04	4.5	2.5	-1.12
20	Jun-05	4.5	2.5	-1.12
21	Dec-05	4.5	2.0	-1.21
22	Jun-06	4.5	2.0	-1.21
23	Nov-06	4.5	2.0	-1.21
24	Jun-07	4.5	1	-1.39
25	Nov-07	4.5	1	-1.39
26	Jun-08	4.5	1	-1.39
27	Nov-08	4.5	0.5	-1.48
28	Jun-09	4.5	0.5	-1.48
29	Nov-09	4.5	2	-1.21
30	Jun-10	4.5	2	-1.21
31	Nov-10	4.5	2	-1.21
32	Jun-11	4.5	2	-1.21



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	15.61	10.57
2	Aug-95	20		
3	Feb-96	20		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	May-97	9		
8	Nov-97	31		

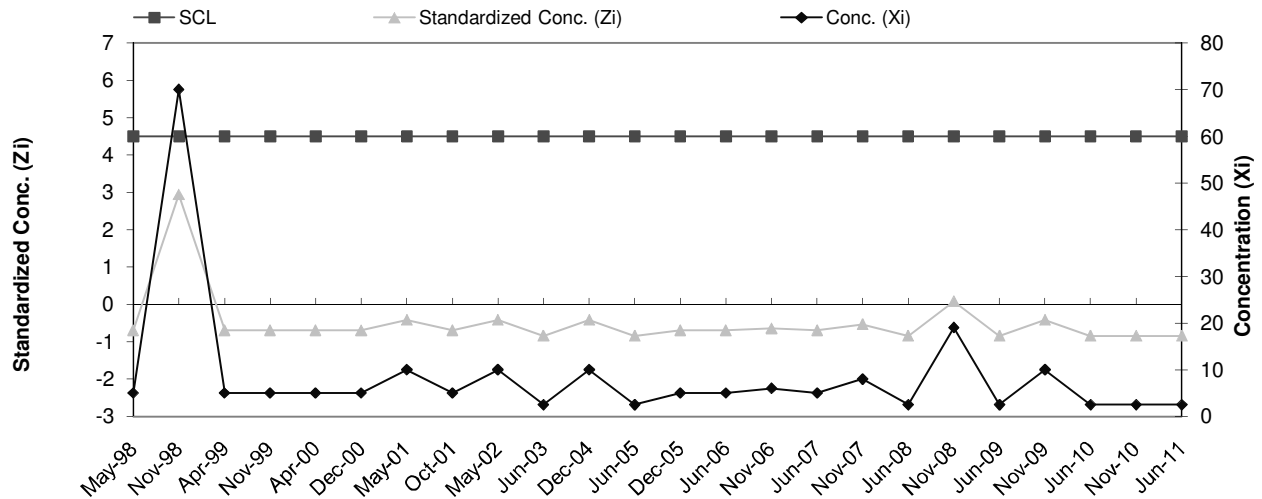
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	2.5	-1.24
10	Nov-98	4.5	2.5	-1.24
11	Apr-99	4.5	2.5	-1.24
12	Nov-99	4.5	2.5	-1.24
13	Apr-00	4.5	2.5	-1.24
14	Dec-00	4.5	7.0	-0.81
15	May-01	4.5	2.5	-1.24
16	Oct-01	4.5	2.5	-1.24
17	May-02	4.5	2.5	-1.24
18	Jun-03	4.5	2.5	-1.24
19	Dec-04	4.5	11.0	-0.44
20	Jun-05	4.5	2.5	-1.24
21	Dec-05	4.5	2.5	-1.24
22	Jun-06	4.5	2.5	-1.24
23	Nov-06	4.5	2.5	-1.24
24	Jun-07	4.5	1	-1.38
25	Nov-07	4.5	3	-1.19
26	Jun-08	4.5	2.5	-1.24
27	Nov-08	4.5	2.5	-1.24
28	Jun-09	4.5	2.5	-1.24
29	Nov-09	4.5	2.5	-1.24
30	Jun-10	4.5	2.5	-1.24
31	Nov-10	4.5	2.5	-1.24
32	Jun-11	4.5	2.5	-1.24



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	17.49	17.84
2	Aug-95	10		
3	Feb-96	10		
4	Jun-96	10		
5	Aug-96	50		
6	Nov-96	40		
7	May-97	5		
8	Nov-97	5		

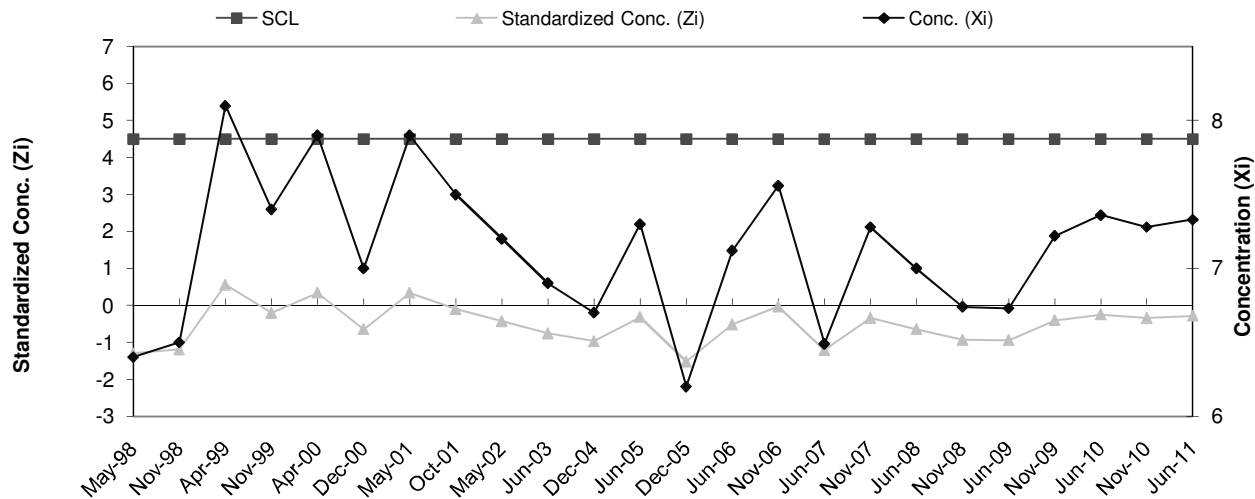
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5.0	-0.70
10	Nov-98	4.5	70.0	2.94
11	Apr-99	4.5	5.0	-0.70
12	Nov-99	4.5	5.0	-0.70
13	Apr-00	4.5	5.0	-0.70
14	Dec-00	4.5	5.0	-0.70
15	May-01	4.5	10.0	-0.42
16	Oct-01	4.5	5.0	-0.70
17	May-02	4.5	10.0	-0.42
18	Jun-03	4.5	2.5	-0.84
19	Dec-04	4.5	10.0	-0.42
20	Jun-05	4.5	2.5	-0.84
21	Dec-05	4.5	5.0	-0.70
22	Jun-06	4.5	5.0	-0.70
23	Nov-06	4.5	6.0	-0.64
24	Jun-07	4.5	5	-0.70
25	Nov-07	4.5	8	-0.53
26	Jun-08	4.5	2.5	-0.84
27	Nov-08	4.5	19	0.08
28	Jun-09	4.5	2.5	-0.84
29	Nov-09	4.5	10	-0.42
30	Jun-10	4.5	2.5	-0.84
31	Nov-10	4.5	2.5	-0.84
32	Jun-11	4.5	2.5	-0.84



**COLDWATER ROAD LANDFILL 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		

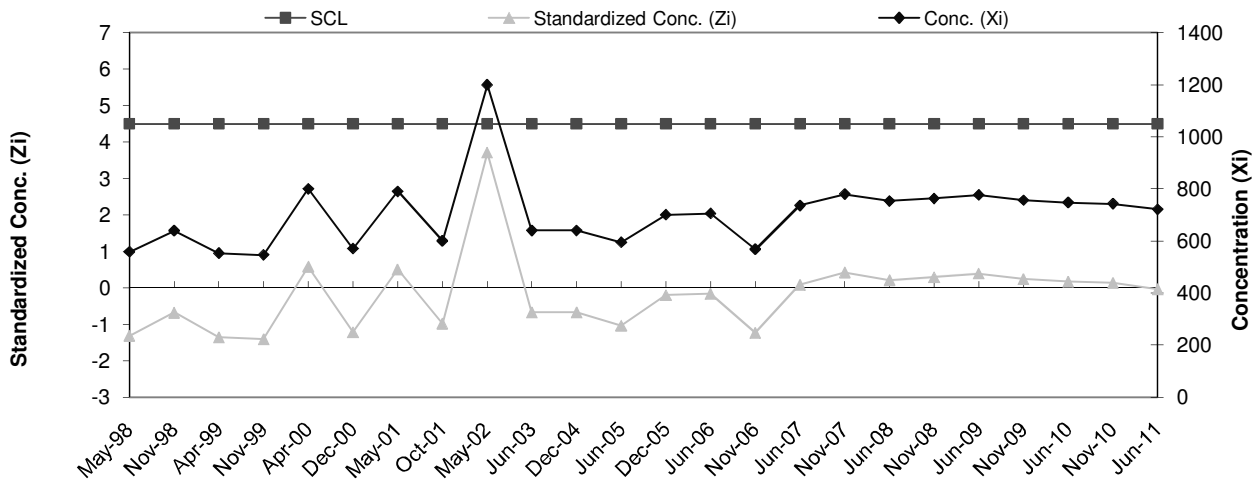
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	6.4	-1.30
10	Nov-98	4.5	6.5	-1.19
11	Apr-99	4.5	8.1	0.56
12	Nov-99	4.5	7.4	-0.21
13	Apr-00	4.5	7.9	0.34
14	Dec-00	4.5	7.0	-0.64
15	May-01	4.5	7.9	0.34
16	Oct-01	4.5	7.5	-0.10
17	May-02	4.5	7.2	-0.42
18	Jun-03	4.5	6.9	-0.75
19	Dec-04	4.5	6.7	-0.97
20	Jun-05	4.5	7.3	-0.31
21	Dec-05	4.5	6.2	-1.52
22	Jun-06	4.5	7.1	-0.51
23	Nov-06	4.5	7.6	-0.03
24	Jun-07	4.5	6.5	-1.20
25	Nov-07	4.5	7.3	-0.34
26	Jun-08	4.5	7.0	-0.64
27	Nov-08	4.5	6.7	-0.93
28	Jun-09	4.5	6.7	-0.94
29	Nov-09	4.5	7.2	-0.40
30	Jun-10	4.5	7.4	-0.25
31	Nov-10	4.5	7.3	-0.34
32	Jun-11	4.5	7.3	-0.28



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	680	725.75	127.98
2	Aug-95	845		
3	Feb-96	751		
4	Jun-96	632		
5	Aug-96	691		
6	Nov-96	977		
7	May-97	610		
8	Nov-97	620		

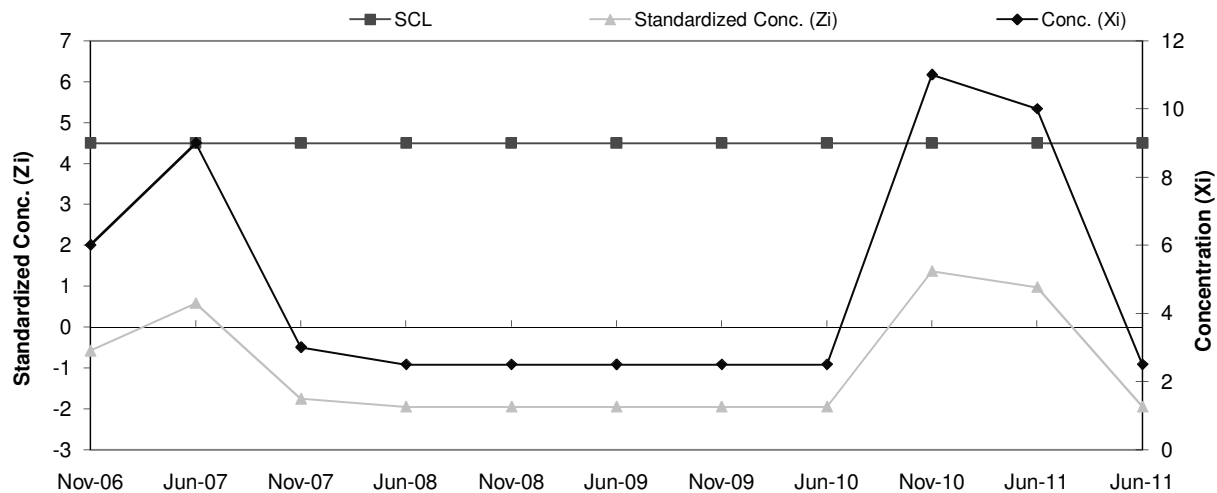
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	558	-1.31
10	Nov-98	4.5	639	-0.68
11	Apr-99	4.5	552	-1.36
12	Nov-99	4.5	546	-1.40
13	Apr-00	4.5	800	0.58
14	Dec-00	4.5	570	-1.22
15	May-01	4.5	790	0.50
16	Oct-01	4.5	600	-0.98
17	May-02	4.5	1200	3.71
18	Jun-03	4.5	640	-0.67
19	Dec-04	4.5	640	-0.67
20	Jun-05	4.5	594	-1.03
21	Dec-05	4.5	700	-0.20
22	Jun-06	4.5	705	-0.16
23	Nov-06	4.5	568	-1.23
24	Jun-07	4.5	736	0.08
25	Nov-07	4.5	780	0.42
26	Jun-08	4.5	753	0.21
27	Nov-08	4.5	763	0.29
28	Jun-09	4.5	776	0.39
29	Nov-09	4.5	756	0.24
30	Jun-10	4.5	747	0.17
31	Nov-10	4.5	743	0.13
32	Jun-11	4.5	721	-0.04



COLDWATER ROAD LANDFILL 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		

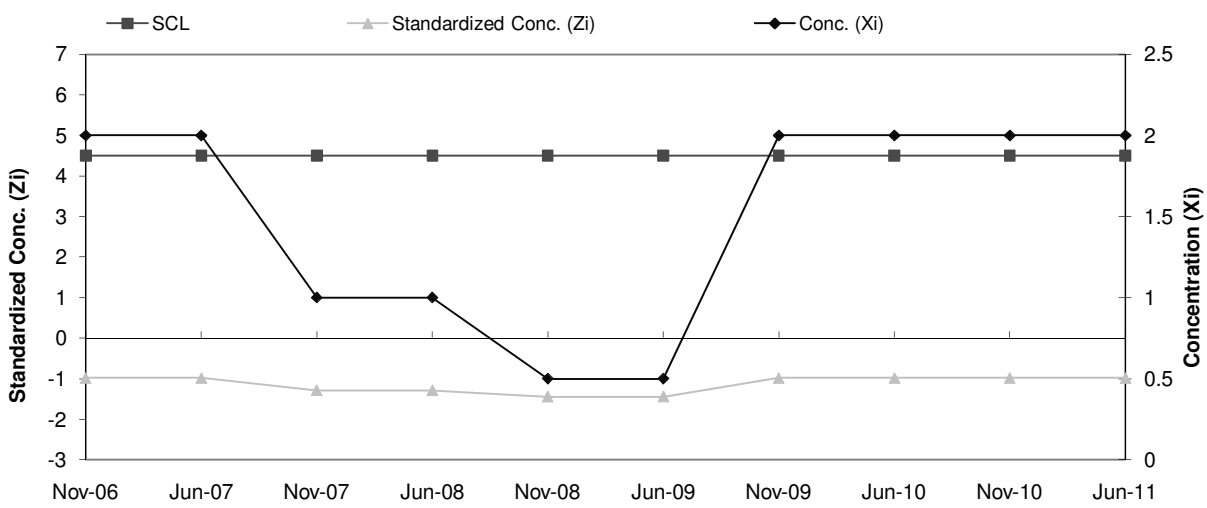
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-06	4.5	6	-0.59
10	Jun-07	4.5	9	0.59
11	Nov-07	4.5	3	-1.76
12	Jun-08	4.5	2.5	-1.95
13	Nov-08	4.5	2.5	-1.95
14	Jun-09	4.5	2.5	-1.95
15	Nov-09	4.5	2.5	-1.95
16	Jun-10	4.5	2.5	-1.95
17	Nov-10	4.5	11	1.37
18	Jun-11	4.5	10	0.98
19	Jun-11	4.5	2.5	-1.95



**COLDWATER ROAD LANDFILL 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		

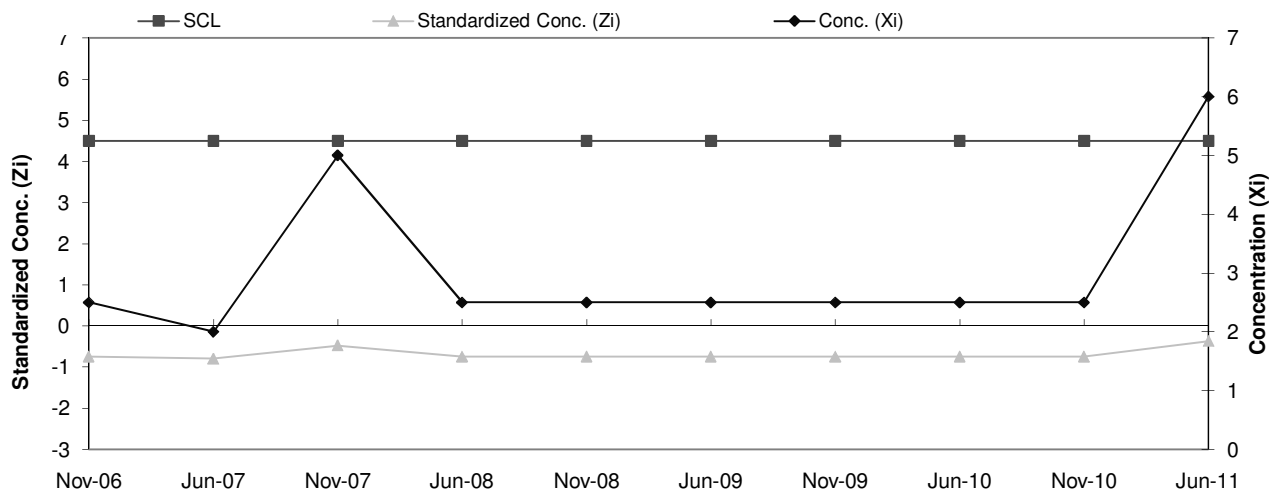
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-06	4.5	2	-0.98
10	Jun-07	4.5	2	-0.98
11	Nov-07	4.5	1	-1.29
12	Jun-08	4.5	1	-1.29
13	Nov-08	4.5	0.5	-1.44
14	Jun-09	4.5	0.5	-1.44
15	Nov-09	4.5	2	-0.98
16	Jun-10	4.5	2	-0.98
17	Nov-10	4.5	2	-0.98
18	Jun-11	4.5	2	-0.98



**COLDWATER ROAD LANDFILL 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		

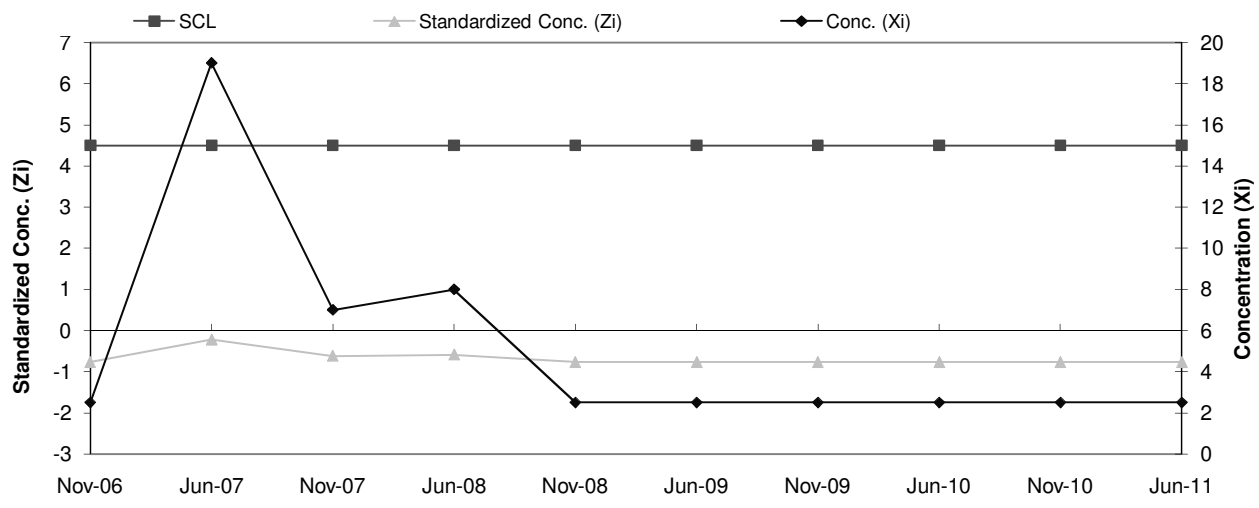
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-06	4.5	2.5	-0.74
10	Jun-07	4.5	2	-0.80
11	Nov-07	4.5	5	-0.47
12	Jun-08	4.5	2.5	-0.74
13	Nov-08	4.5	2.5	-0.74
14	Jun-09	4.5	2.5	-0.74
15	Nov-09	4.5	2.5	-0.74
16	Jun-10	4.5	2.5	-0.74
17	Nov-10	4.5	2.5	-0.74
18	Jun-11	4.5	6	-0.37



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Aug-96	90	25.63	30.14
2	Nov-96	50		
3	May-97	10		
4	May-98	20		
5	Nov-03	20		
6	Jun-05	2.5		
7	Dec-05	10		
8	Jun-06	2.5		

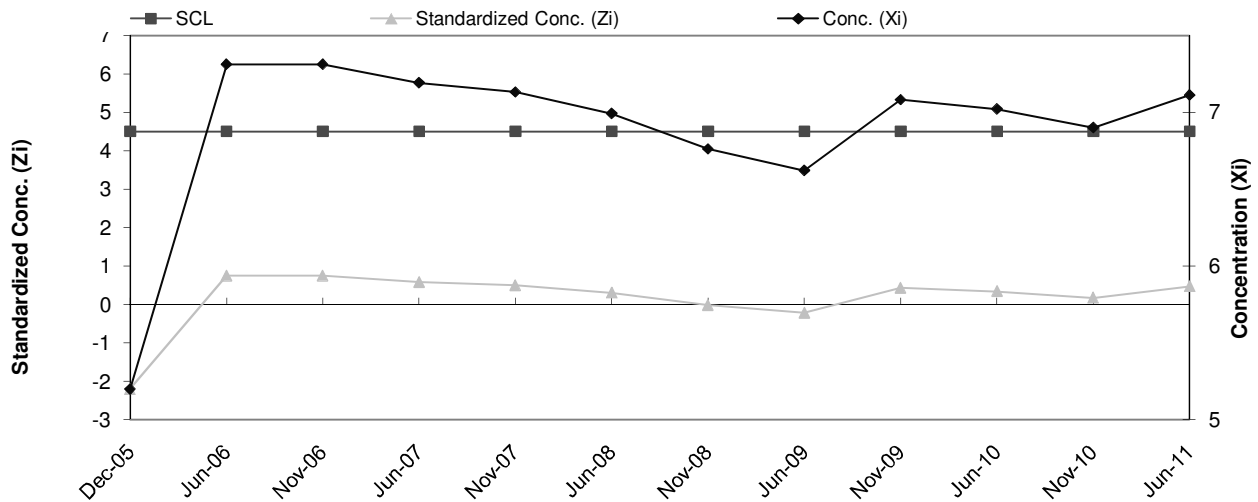
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-06	4.5	2.5	-0.77
10	Jun-07	4.5	19	-0.22
11	Nov-07	4.5	7	-0.62
12	Jun-08	4.5	8	-0.58
13	Nov-08	4.5	2.5	-0.77
14	Jun-09	4.5	2.5	-0.77
15	Nov-09	4.5	2.5	-0.77
16	Jun-10	4.5	2.5	-0.77
17	Nov-10	4.5	2.5	-0.77
18	Jun-11	4.5	2.5	-0.77



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Aug-96	7.8	6.78	0.72
2	Nov-96	7.1		
3	May-97	6.4		
4	May-98	7		
5	Nov-98	6		
6	Nov-99	7		
7	May-01	6.4		
8	Jun-05	7.3		

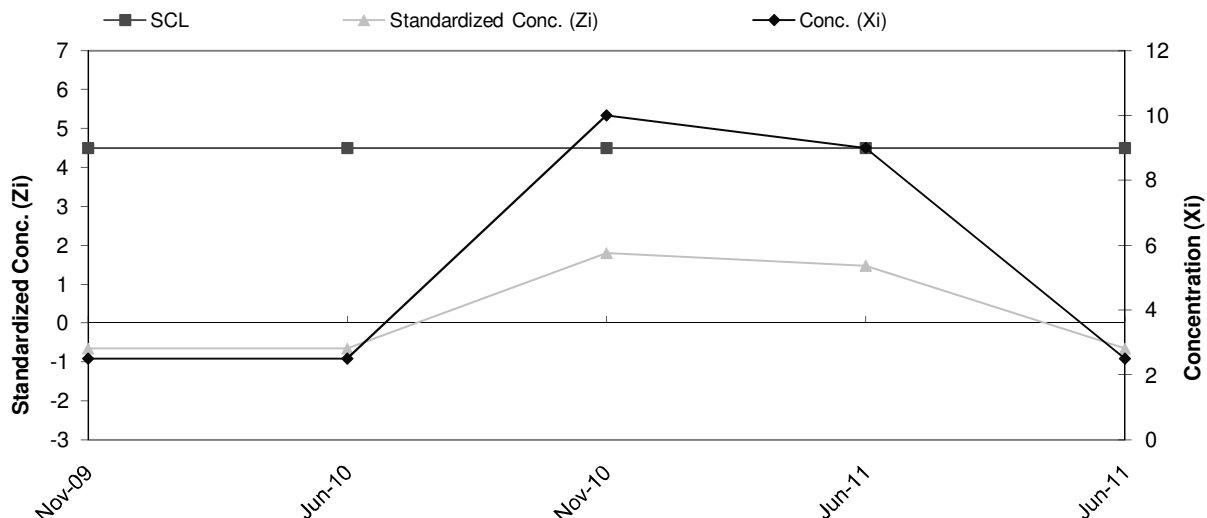
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Dec-05	4.5	5.2	-2.20
10	Jun-06	4.5	7.3	0.75
11	Nov-06	4.5	7.3	0.75
12	Jun-07	4.5	7.2	0.58
13	Nov-07	4.5	7.1	0.50
14	Jun-08	4.5	7.0	0.30
15	Nov-08	4.5	6.8	-0.02
14	Jun-09	4.5	6.6	-0.22
15	Nov-09	4.5	7.1	0.43
16	Jun-10	4.5	7.0	0.34
17	Nov-10	4.5	6.9	0.17
18	Jun-11	4.5	7.1	0.47



COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
 B-27 Cr

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Dec-05	9	4.50	3.05
2	Jun-06	6		
3	Nov-06	2.5		
4	Jun-07	9		
5	Nov-07	2		
6	Jun-08	2.5		
7	Nov-08	2.5		
8	Jun-09	2.5		

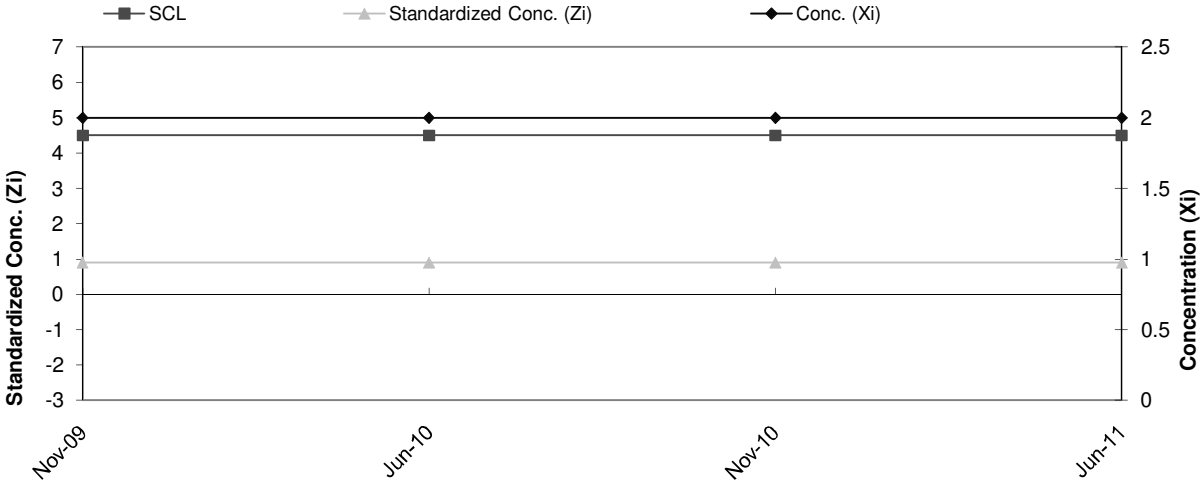
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-09	4.5	2.5	-0.66
10	Jun-10	4.5	2.5	-0.66
11	Nov-10	4.5	10	1.80
12	Jun-11	4.5	9	1.48
13	Jun-11	4.5	2.5	-0.66



COLDWATER ROAD LANDFILL 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		

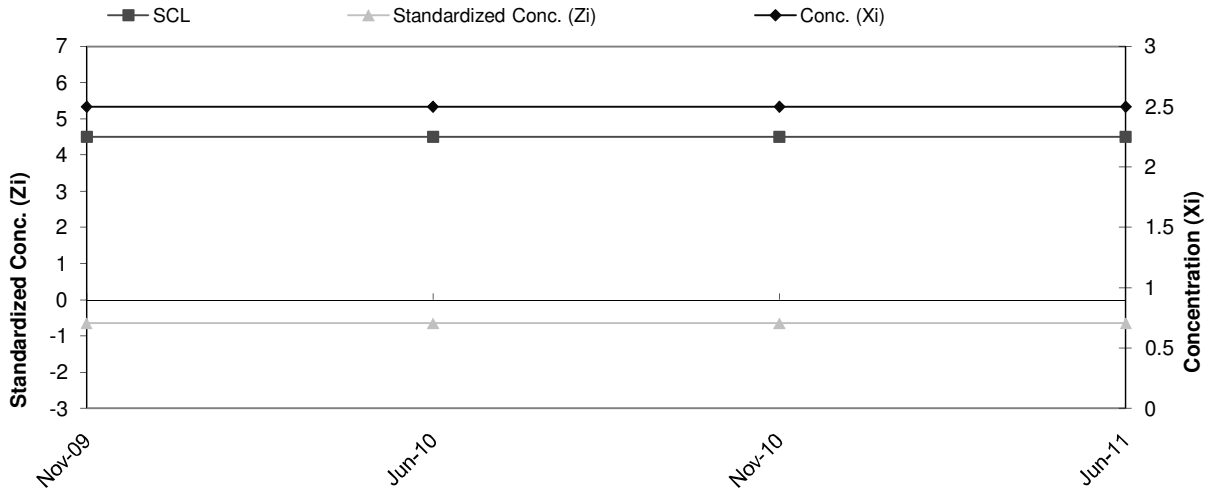
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-09	4.5	2	0.90
10	Jun-10	4.5	2	0.90
11	Nov-10	4.5	2	0.90
12	Jun-11	4.5	2	0.90



**COLDWATER ROAD LANDFILL 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		

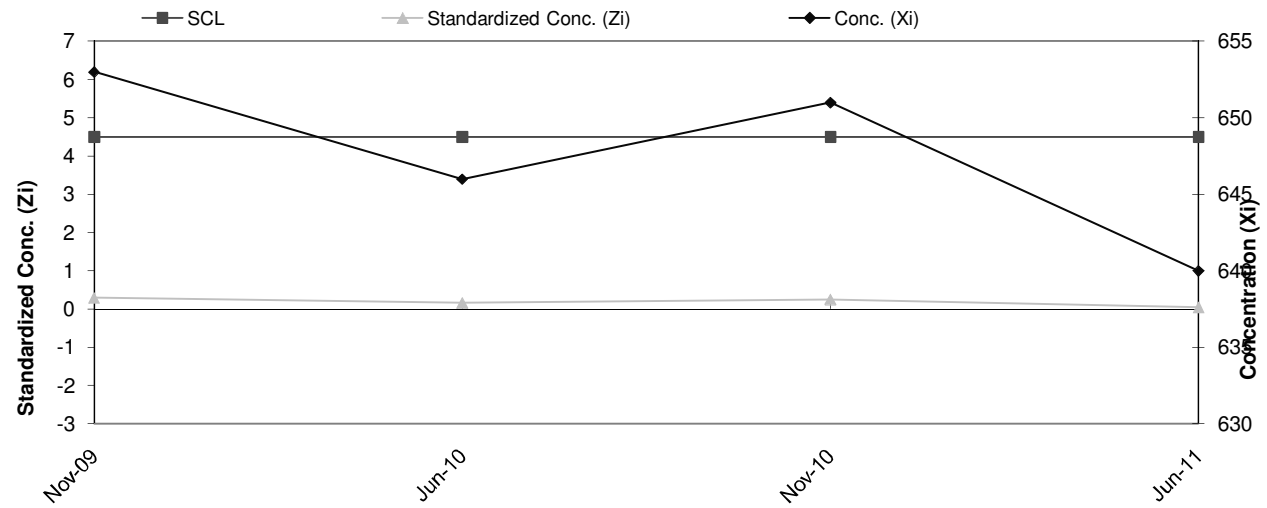
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-09	4.5	2.5	-0.65
10	Jun-10	4.5	2.5	-0.65
11	Nov-10	4.5	2.5	-0.65
12	Jun-11	4.5	2.5	-0.65



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Dec-05	714	637.75	52.08
2	Jun-06	594		
3	Nov-06	540		
4	Jun-07	628		
5	Nov-07	649		
6	Jun-08	659		
7	Nov-08	667		
8	Jun-09	651		

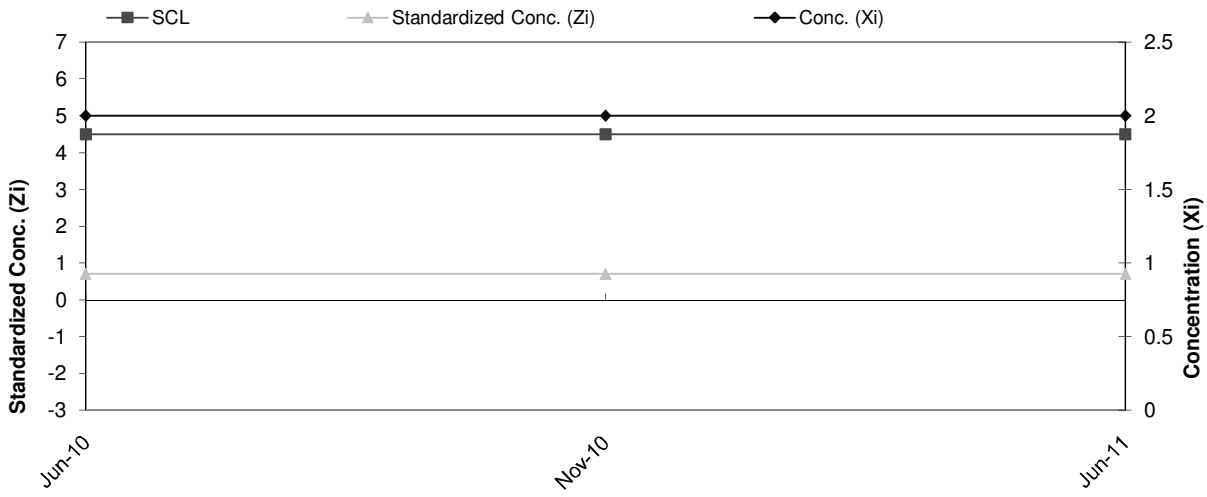
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-09	4.5	653	0.29
10	Jun-10	4.5	646	0.16
11	Nov-10	4.5	651	0.25
12	Jun-11	4.5	640	0.04



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

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-06	2	1.50	0.71
2	Dec-06	2		
3	Jun-07	2		
4	Nov-07	2		
5	Jun-08	1		
6	Nov-08	0.5		
7	Jun-09	0.5		
8	Nov-09	2		

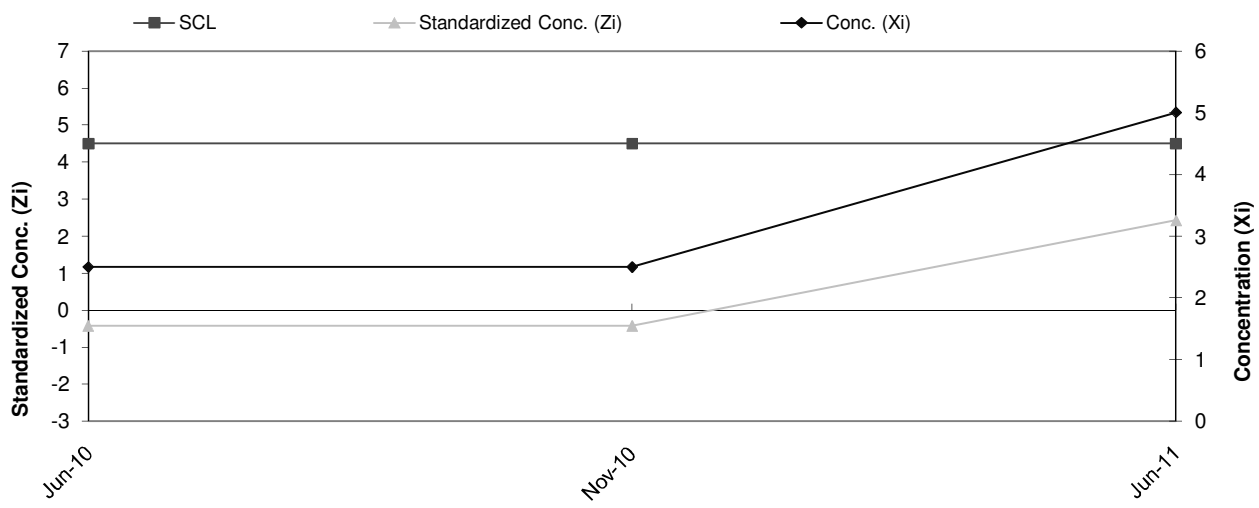
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Jun-10	4.5	2	0.71
10	Nov-10	4.5	2	0.71
11	Jun-11	4.5	2	0.71



COLDWATER ROAD LANDFILL FACILITY
 RCRA GROUND WATER DETECTION MONITORING SYSTEM
 SHEWART CONTROL CHART
 B-28 Ni

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-06	2.5	2.88	0.88
2	Dec-06	2.5		
3	Jun-07	3		
4	Nov-07	5		
5	Jun-08	2.5		
6	Nov-08	2.5		
7	Jun-09	2.5		
8	Nov-09	2.5		

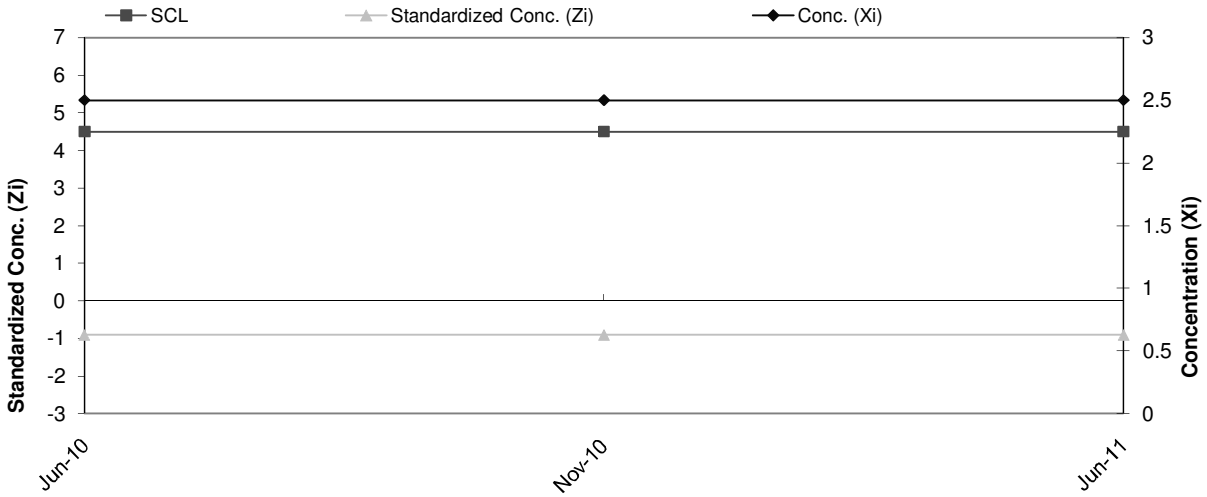
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Jun-10	4.5	2.5	-0.43
10	Nov-10	4.5	2.5	-0.43
9	Jun-11	4.5	5	2.43



COLDWATER ROAD LANDFILL FACILITY
RCRA GROUND WATER DETECTION MONITORING SYSTEM
SHEWART CONTROL CHART
B-28 Zn

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-06	18	8.75	6.88
2	Dec-06	5		
3	Jun-07	6		
4	Nov-07	11		
5	Jun-08	5		
6	Nov-08	2.5		
7	Jun-09	2.5		
8	Nov-09	20		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Jun-10	4.5	2.5	-0.91
10	Nov-10	4.5	2.5	-0.91
11	Jun-11	4.5	2.5	-0.91



APPENDIX E
Landfill Leak Detection Vault Sampling Results

Table 1
Coldwater Road Landfill Facility
Landfill Leak Detection Vaults - Historical Analytical Results
Inorganics and Metals

Vault	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)			
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400
A	23-Mar-95	4.6	<1	7.5	690	--	<20	<20	<40	180
	20-Jun-95	8.9	2.0	6.8	1900	--	24	21	<30	<20
	30-Aug-95	8.2	2.0	6.9	2000	--	<20	<20	<40	<20
	28-Nov-95	9.1	<1	7.0	1900	--	23	31	43	24
	27-Mar-96	140.0	<10	7.2	2000	--	<20	<20	46	<20
	18-Jun-96	12.0	<10	6.9	2000	--	<20	<20	<20	<20
	20-Aug-96	32.0	<5	7.1	1900	--	<20	<20	<20	30
	11-Nov-96	18.0	5.0	7.1	2000	--	<20	<20	30	60
	19-Feb-97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9-May-97	13.0	17.0	6.7	1940	9.7	<10	<10	71	90
	12-Aug-97	6.0	4.0	6.0	1810	12.8	<10	<10	88	60
	15-Nov-97	8.0	12.0	6.5	2000	12.0	<10	10	125	100
	9-Feb-98	6.0	8.0	6.4	1960	11.5	<10	<10	73	60
	14-May-98	12.0	15.0	6.9	1760	17.4	<10	20	13	200
	14-Aug-98	5.0	6.0	6.7	--	--	<10	<10	15	160
	13-Nov-98	5.0	12.0	6.5	1990	16.5	<10	<10	20	220
	19-Mar-99	5.7	8.0	6.8	1334	13.6	<10	10	14	60
	6-May-99	5.6	16.0	6.9	3250	26.2	<10	<10	15	20
	23-Jul-99	5.7	3.0	6.3	1470	18.9	<5	9	13	19
	22-Oct-99	5.0	3.0	5.9	1750	12.1	<10	<10	16	30
	14-Mar-00	5.6	<1	7.6	1410	10.7	<10	<10	15	20
	20-Jun-00	7.0	3.0	6.9	1410	18.3	<10	<10	12	20
	13-Sep-00	5.9	5.0	7.5	1650	15.1	<5	<10	14	20
	10-Nov-00	6.4	2.0	7.2	1470	11.8	<10	100	10	150
	12-Mar-01	6.0	1.0	7.4	1530	12.8	<10	<10	7	10
	24-May-01	9.4	10.0	7.6	1380	11.9	<10	<10	10	20
	31-Aug-01	5.3	10.6	7.5	1450	12.5	<5	<10	14	9
	16-Nov-01	5.1	3.0	6.8	1300	12.4	<10	<10	15	50
	8-Mar-02	NS	NS	NS	NS	NS	NS	NS	NS	NS
	31-May-02	2.4	54.0	7.2	1470	13.8	<10	<10	<5	40
	5-Sep-02	4.7	6.0	6.6	--	--	<5	<5	14	140
	12-Dec-02	NS	NS	NS	NS	NS	NS	NS	NS	NS
	18-Mar-03	6.7	8.0	6.8	1290	12	<5	<5	9	99
4-Jun-03	2.0	11.0	6.8	1370	11.3	<5	<5	10	<5	
5-Oct-03	NS	NS	NS	NS	NS	NS	NS	NS	NS	
8-Dec-03	NS	NS	NS	NS	NS	NS	NS	NS	NS	
27-Feb-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	
30-Jun-04	4.5	55.0	7.0	1318	12.5	<5	<5	8	<5	
19-Nov-04	3.4	2.0	6.9	1120	11.4	6	<5	15	14	
Duplicate	19-Nov-04	4.4	4.0	--	--	6	<5	18	16	
	15-Jun-05	6.0	8.0	6.0	1640	13.4	<5	13	21	
Re-sample	17-Jan-06	5.9	12785	10.0	1630	8.4	<5	13	8	
	14-Feb-06	--	--	7.9	1800	8.5	--	14	--	
	29-Jun-06	NS	NS	NS	NS	NS	NS	NS	NS	
	28-Nov-06	4.7	438	7.7	1940	13.2	<5	13	6	
	6-Jun-07	4.9	11	6.8	1990	11.7	13	4	8	
	12-Nov-07	5.9	70	6.8	2030	12.4	4	5	11	
	24-Jun-08	5.0	371	6.9	2060	13.3	<5	<1	25	5
	17-Nov-08	5.8	23	6.1	2060	9.2	<5	<1	22	<5
	23-Jun-09	5.5	88	7.0	2050	13.6	<5	11	27	36
	17-Nov-09	6	8	7.1	2090	10.3	<5	<4	22	7
	14-Jun-10	6	10	7.1	2070	13.1	8	<4	16	6
Re-sample	20-Jun-11	6.7	9	7.3	2010	12.2	30	<4	27	39
	14-Jul-11	--	--	--	--	--	<5	--	--	--

See notes on page 6.

Table 1
Coldwater Road Landfill Facility
Landfill Leak Detection Vaults - Historical Analytical Results
Inorganics and Metals

Vault	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)				
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn	
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400	
B	23-Mar-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	20-Jun-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	30-Aug-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	28-Nov-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	27-Mar-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	18-Jun-96	11.0	<10	6.9	1900	--	<20	<20	<20	<20	
	20-Aug-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	11-Nov-96	17.0	66.0	7.0	1600	--	<20	<20	20	40	
	19-Feb-97	7.0	4	7.1	1590	8.9	<10	<10	43	20	
	7-May-97	7.0	4	6.5	1930	13.8	<10	<10	45	20	
	12-Aug-97	5.0	3.0	6.5	663	26.0	<10	<10	26	60	
	15-Nov-97	6.0	4.0	6.8	1400	11.0	<10	<10	96	50	
	9-Feb-98	7.0	8.0	6.6	1560	12.6	<10	<10	57	20	
	14-May-98	6.0	3.0	6.9	1490	11.2	<10	<10	14	30	
	14-Aug-98	4.0	7.0	6.6	--	--	<10	<10	10	14	
	13-Nov-98	6.0	18.0	6.3	1940	20.6	<10	10	17	80	
	19-Mar-99	4.2	6.0	6.5	817	14.2	<10	<10	5	<10	
	6-May-99	5.6	4.0	7.0	1330	26.2	<10	10	6	20	
	23-Jul-99	5.8	3.0	6.5	1070	16.2	<5	13	10	18	
	22-Oct-99	5.0	5.0	6.2	1440	11.0	<10	<10	16	20	
	14-Mar-00	6.6	<1	8.0	900	11.0	<10	<10	8	20	
	20-Jun-00	7.1	7.0	6.8	1120	17.3	<10	30	9	30	
	13-Sep-00	5.4	<1	7.4	1560	15.6	<5	10	8	20	
	10-Nov-00	6.8	1.0	7.1	1280	11.6	<5	40	14	90	
	12-Mar-01	5.2	5.0	7.4	1460	12.3	<10	<10	7	20	
	24-May-01	8.5	10.0	7.6	1280	13.0	<10	20	12	40	
	31-Aug-01	3.9	<1.3	7.8	1370	12.9	<5	<10	11	20	
	16-Nov-01	5.7	2.0	7.1	1230	13.1	<10	10	8	60	
	8-Mar-02	5.4	2.0	7.0	2400	8.5	<10	10	<5	70	
	31-May-02	5.1	3.0	7.2	1070	14.2	<10	<10	<5	20	
	5-Sep-02	4.8	4.0	6.7	--	--	<5	<5	8	84	
	12-Dec-02	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	18-Mar-03	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	4-Jun-03	5.5	3.0	7.0	1530	10.1	<5	<5	7	<5	
	5-Oct-03	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	8-Dec-03	4.7	2.0	7.1	1490	11.5	<5	6	5	35	
	8-Dec-03	4.7	7.0	--	--	--	<5	6	5	35	
	27-Feb-04	4.0	12.0	7.4	1380	12.3	<5	5	<5	16	
	30-Jun-04	4.1	396.0	7.0	1210	11.8	<5	12	7	<5	
	19-Nov-04	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	15-Jun-05	6.0	6.0	6.1	1560	12.8	<5	<5	14	20	
	1-Dec-05	4.7	<1	6.9	1310	9.1	<5	<5	8	50	
	Re-sample	14-Feb-06	--	--	7.7	1520	6.1	--	--	--	
	Duplicate	29-Jun-06	2.6	1.0	7.0	1050	13.9	<5	<4	5	8
		28-Nov-06	5.5	4.0	7.5	1380	13.0	<5	<4	8	11
Duplicate	28-Nov-06	4.7	--	7.2	1340	13.0	5	4	7	11	
	6-Jun-07	4.7	2.0	6.3	1670	12.1	9	6	13	16	
	12-Nov-07	3.8	1.0	6.9	1690	12.6	2	5	16	14	
	24-Jun-08	3.2	6.0	7.0	1880	14.0	<5	2	8	9	
	17-Nov-08	2.4	<1	6.9	1818	9.6	<5	2	8	15	
Duplicate	17-Nov-08	1.7	2.0	6.9	1820	9.6	<5	1	8	15	
	23-Jun-09	3.6	4.0	7.1	1780	13.3	<5	1	6	17	
	17-Nov-09	3	0	7.0	1970	10.9	<5	<4	9	17	
	14-Jun-10	3	2	6.9	1810	12.1	8	<4	5	20	
	8-Nov-10	4	3	6.9	1911	12.2	21	<4	11	17	
Re-sample	1-Dec-10	--	--	6.9	--	12.2	6	--	--	--	
	20-Jun-11	3.4	1	7.0	1496	12.2	28	<4	11	16	
Re-sample	14-Jul-11	--	--	--	--	--	<5	--	--	--	

See notes on page 6.

Table 1
Coldwater Road Landfill Facility
Landfill Leak Detection Vaults - Historical Analytical Results
Inorganics and Metals

Vault	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)			
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400
C	23-Mar-95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	20-Jun-95	4.4	<1	7.4	530	--	25	25	<30	60
	30-Aug-95	3.7	<1	7.4	340	--	<20	<20	<40	74
	28-Nov-95	7.6	<1	7.0	2200	--	29	37	67	36
	27-Mar-96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	18-Jun-96	7.7	<10	6.9	2000	--	<20	<20	<20	<20
	20-Aug-96	8.3	<5	6.9	1900	--	<20	<20	<20	40
	11-Nov-96	16.0	9.0	7.0	2100	--	<20	<20	<20	80
	19-Feb-97	7.0	1.0	7.6	1610	9.0	<10	<10	45	30
	7-May-97	6.0	10.0	6.6	1730	12.5	<10	100	66	20
	8-Aug-97	4.0	13.0	6.3	1610	24.1	<10	<10	79	20
	15-Nov-97	6.0	4.0	6.7	2000	12.0	<10	<10	122	50
	9-Feb-98	8.0	4.0	6.5	1720	12.2	<10	<10	64	50
	14-May-98	6.0	3.0	6.9	1600	12.1	<10	<10	23	40
	14-Aug-98	6.0	5.0	6.8	--	--	<10	<10	23	40
	13-Nov-98	6.0	12.0	6.3	1760	21.4	<10	<10	21	30
	13-Nov-98	6.0	10.0	--	--	--	<10	<10	21	30
	19-Mar-99	6.3	2.0	7.0	1300	15.6	<10	<10	19	20
	6-May-99	6.1	8.0	6.9	1600	26.6	<10	10	20	20
	23-Jul-99	6.5	0.0	6.7	1370	17.3	<5	12	20	20
	22-Oct-99	6.4	5.0	6.6	1160	11.0	<10	<10	18	10
	14-Mar-00	6.5	1.0	7.8	1350	12.6	<10	<10	17	10
	20-Jun-00	6.0	4.0	6.9	1280	18.3	<10	140	19	170
	13-Sep-00	6.1	<1	7.6	1430	14.9	<5	<10	16	20
	10-Nov-00	10.6	4.0	6.8	1210	12.1	<10	<10	17	40
	12-Mar-01	6.3	4.0	7.7	1380	12.1	<10	<10	8	<10
	24-May-01	9.2	8.0	7.5	1410	13.3	<10	<10	17	30
	31-Aug-01	5.4	4.0	7.4	1530	13.1	<5	<10	16	20
	16-Nov-01	6.0	2.0	6.8	1170	13.2	<10	<10	15	60
	8-Mar-02	4.0	1.0	7.1	1680	11.3	<10	10	<5	20
	31-May-02	5.1	7.0	7.2	1280	14.2	<10	<10	14	40
	5-Sep-02	5.0	7.0	6.7	--	--	<5	<5	14	39
	12-Dec-02	4.2	7.0	6.9	1330	12.1	<5	<5	12	53
	18-Mar-03	5.7	4.0	6.8	1260	10.7	<5	<5	10	37
	4-Jun-03	4.4	6.0	6.9	1150	11.0	<5	<5	8	<5
	5-Oct-03	4.4	4.0	7.0	1230	13.6	<5	<5	14	28
	8-Dec-03	3.8	6.0	7.1	1520	11.6	<5	11	14	63
	27-Feb-04	4.6	1.0	7.4	1410	12.1	<5	<5	12	36
	30-Jun-04	3.7	14.0	7.0	1008	12.2	<5	<5	12	8
	19-Nov-04	4.3	4.0	6.9	1090	11.7	<5	<5	20	6
15-Jun-05	5.0	6.0	6.3	1460	12.5	<5	<5	15	39	
1-Dec-05	5.9	2.0	6.9	1620	11.1	<5	<5	18	15	
29-Jun-06	2.6	5.0	6.9	2260	15.2	5	<4	10	11	
28-Nov-06	11.6	44.0	7.0	1430	13.4	<5	5	15	<5	
6-Jun-07	4.9	6.0	6.5	1510	12.2	9	5	11	6	
12-Nov-07	4.3	1.0	6.9	1490	13.2	2	5	16	12	
24-Jun-08	4.2	49.0	6.9	1620	13.4	<5	<1	9	<5	
17-Nov-08	4.4	6.0	6.8	1600	9.4	<5	<1	10	11	
23-Jun-09	4.6	9.0	7.2	1660	13.7	<5	<1	8	6	
17-Nov-09	5	15	7.1	1650	11.5	<5	<4	9	6	
17-Nov-09	5	20	7.1	1650	11.5	<5	<4	9	6	
14-Jun-10	5	4	7.0	1710	12.4	7	<4	7	7	
8-Nov-10	6	7	7.2	1670	12.7	16	<4	11	<5	
Duplicate	20-Jun-11	5.4	5	7.3	1686	12.9	25	<4	15	22
Duplicate	20-Jun-11	5.9	5	7.3	1688	12.9	24	<4	14	21
Re-sample	14-Jul-11	--	--	--	--	--	<5	--	--	--

See notes on page 6.

Table 1
Coldwater Road Landfill Facility
Landfill Leak Detection Vaults - Historical Analytical Results
Inorganics and Metals

Vault	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)			
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400
D	23-Mar-95	8.9	83.0	7.3	2200	--	13	<20	44	<20
	20-Jun-95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	30-Aug-95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	28-Nov-95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	27-Mar-96	NS	NS	NS	NS	NS	NS	NS	NS	NS
	18-Jun-96	11.0	150.0	6.9	1800	--	<20	<20	<20	20
	20-Aug-96	40.0	<5	7.2	1600	--	<20	<20	<20	40
	11-Nov-96	23.0	9.0	7.0	1700	--	<20	<20	40	70
	19-Feb-97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9-May-97	23.0	76.0	6.7	1580	8.8	<10	<10	58	70
	8-Aug-97	11.0	44.0	6.5	1540	28.5	<10	<10	79	20
	15-Nov-97	12.0	6.0	6.6	1800	11.0	<10	<10	114	30
	9-Feb-98	12.0	52.0	6.5	1655	12.5	<10	<10	66	40
	14-May-98	10.0	40.0	7.0	1700	16.3	<10	30	23	50
	14-Aug-98	11.0	57.0	6.6	--	--	<10	<10	23	40
	13-Nov-98	11.0	22.0	6.7	1790	15.2	<10	<10	20	30
	19-Mar-99	6.3	2.0	7.0	1302	14.8	<10	30	20	40
	6-May-99	12.4	28.0	6.9	1510	25.2	<10	30	15	30
	23-Jul-99	11.0	40.0	7.0	1231	21.0	<5	9	21	19
	22-Oct-99	10.6	13.0	6.8	1384	10.3	<10	<10	23	20
	14-Mar-00	10.7	57.0	7.8	1460	13.0	<10	<10	15	20
	20-Jun-00	10.1	23.0	6.8	1410	18.7	<10	60	21	70
	13-Sep-00	10.7	7.0	7.6	1370	16.1	<5	<10	21	20
	10-Nov-00	7.0	10.0	7.2	1630	12.2	<10	<10	23	20
	12-Mar-01	5.6	33.0	7.8	1710	12.9	<10	<10	11	10
	24-May-01	12.0	16.0	7.5	1760	13.1	<10	10	18	30
	31-Aug-01	9.8	8.0	7.7	1420	12.8	5	<10	24	20
	16-Nov-01	7.4	20.0	7.6	1270	12.9	<10	10	17	50
	8-Mar-02	8.4	3.0	7.2	1430	10.9	<10	10	<5	10
	31-May-02	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5-Sep-02	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12-Dec-02	NS	NS	NS	NS	NS	NS	NS	NS	NS
	18-Mar-03	8.9	15.0	6.8	1380	11.6	<5	5.0	10.0	19
	4-Jun-03	9.6	5.0	6.9	1430	11.0	<5	<5	8	<5
	5-Oct-03	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8-Dec-03	6.1	4.0	6.9	1330	11.0	8	17	14	63
	27-Feb-04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	30-Jun-04	6.5	5.0	7.0	1050	12.1	<5	<5	30	9
	19-Nov-04	NS	NS	NS	NS	NS	NS	NS	NS	NS
	15-Jun-05	6.0	6.0	5.9	1540	12.9	<5	<5	25	17
17-Jan-06	6.2	8.0	7.3	1600	7.9	6	14	37	<5	
Re-sample	14-Feb-06	--	--	8.0	1520	9.2	--	5	--	--
	29-Jun-06	5.9	51.0	7.0	1570	13.9	6	<4	26	14
	28-Nov-06	7.2	13.0	7.2	1590	13.1	<5	<4	17	7
	6-Jun-07	6.9	7.0	7.3	1530	14.2	9	5	34	8
Duplicate	12-Nov-07	7.3	5.0	6.9	1580	12.3	3	5	23	12
	12-Nov-07	6.0	7.0	6.9	1570	12.3	3	5	23	9
	24-Jun-08	4.1	4.0	6.9	1570	15.4	<5	<1	35	<5
	17-Nov-08	5.6	10.0	7.4	1580	8.0	<5	1	17	6
	23-Jun-09	7.0	20.0	7.2	1570	13.7	<5	<1	34	5
	17-Nov-09	6	7	7.3	1610	11.5	<5	<4	16	7
Duplicate	14-Jun-10	7	35	7.1	1550	11.9	8	<4	32	11
	14-Jun-10	7	1	7.1	1550	11.9	7	<4	33	11
	8-Nov-10	9	31	7.4	1555	13.4	19	<4	18	<5
	14-Jul-11	--	--	7.2	--	18.0	<5	<4	40	<5

See notes on page 6.

Table 1
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Landfill Leak Detection Vaults - Historical Analytical Results
Inorganics and Metals

Vault	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)			
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400
E	23-Mar-95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	20-Jun-95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	30-Aug-95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	28-Nov-95	NS	NS	NS	NS	NS	NS	NS	NS	NS
	27-Mar-96	110.0	<10	7.2	2000	--	<20	<20	46	<20
	18-Jun-96	9.0	76.0	7.0	2400	--	<20	<20	<20	<20
	10/04/96	5.9	19.0	6.9	2000	--	<20	<20	<20	20
	11-Nov-96	12.0	11.0	7.0	1800	--	<20	<20	<20	30
	19-Feb-97	NS	NS	NS	NS	NS	NS	NS	NS	NS
	7-May-97	7.0	2.0	6.3	2120	15.6	<10	<10	35	30
	12-Aug-97	5.0	27.0	6.7	1840	14.9	<10	<10	64	40
	15-Nov-97	5.0	12.0	6.5	2100	11.0	<10	<10	116	40
	9-Feb-98	6.0	4.0	6.6	1950	12.6	<10	<10	54	50
	14-May-98	6.0	32.0	7.1	1850	13.5	<10	<10	7	60
	14-Aug-98	4.0	8.0	6.7	--	--	<10	<10	8	40
	30-Nov-98	3.0	14.0	--	--	--	10	<10	46	60
	19-Mar-99	4.8	20.0	6.5	1302	14.3	<10	20	6	30
	6-May-99	8.2	14.0	6.9	1720	27.4	<10	<10	5	20
	23-Jul-99	4.6	9.0	6.5	1468	21.8	<5	11	6	19
	22-Oct-99	3.5	6.0	6.3	1382	11.0	<10	<10	6	20
	14-Mar-00	5.6	48.0	8.0	1500	13.9	<10	<10	5	10
	20-Jun-00	6.3	22.0	6.9	1430	19.6	<10	30	<5	30
	13-Sep-00	4.1	5.0	7.7	1360	15.7	<5	<10	5	20
	10-Nov-00	4.3	4.0	7.5	1290	11.8	<10	40	5	60
	12-Mar-01	5.4	9.0	7.3	--	12.7	<10	<10	5	10
	24-May-01	8.6	10.0	7.5	1900	13.6	<10	10	6	40
	31-Aug-01	5.7	5.3	7.6	1810	13.2	<5	10	6	70
	16-Nov-01	3.6	<1.0	7.5	1630	12.8	<10	10	6	60
	8-Mar-02	6.0	<1.0	7.0	1570	9.8	<10	10	6	90
	31-May-02	NS	NS	NS	NS	NS	NS	NS	NS	NS
	5-Sep-02	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12-Dec-02	NS	NS	NS	NS	NS	NS	NS	NS	NS
	18-Mar-03	NS	NS	NS	NS	NS	NS	NS	NS	NS
	4-Jun-03	5.1	6.0	6.9	1470	11.0	<5	6.0	<5	50
	5-Oct-03	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8-Dec-03	NS	NS	NS	NS	NS	NS	NS	NS	NS
	27-Feb-04	5.4	4.0	7.6	1190	12.1	<5	6	7	43
	30-Jun-04	4.9	390	6.9	1337	12.7	<5	<5	6	43
	19-Nov-04	4.3	3	7.1	1230	11.4	<5	7	22	11
	15-Jun-05	7.0	3	6.8	1790	12.6	<5	<5	12	31
1-Dec-05	3.7	<1	7.1	1630	10.9	<5	66	<5	73	
29-Jun-06	5.8	8.0	6.9	1790	14.0	5	4	6	13	
28-Nov-06	6.3	134.0	7.5	1680	13.1	5	5	<5	10	
6-Jun-07	4.6	3.0	6.5	1820	12.7	9	7	<5	9	
6-Jun-07	4.8	3.0	--	1820	--	10	5	<5	8	
12-Nov-07	3.9	4.0	6.8	1740	12.0	2	4	11	13	
24-Jun-08	6.0	2.0	6.8	1860	13.9	<5	2	<5	6	
17-Nov-08	4.1	1.0	7.4	1630	10.3	<5	2	<5	19	
23-Jun-09	3.2	10.0	6.8	1950	14.0	<5	2	<5	15	
23-Jun-09	3.0	17.0	6.8	1960	14.0	<5	2	<5	14	
17-Nov-09	5	9	6.9	1780	11.2	<5	<4	<5	14	
14-Jun-10	4	21	6.9	1910	12.5	9	<4	<5	13	
8-Nov-10	5	<1	7.0	1714	12.4	24	<4	<5	7	
8-Nov-10	5	3	7.0	1715	12.4	20	<4	<5	7	
20-Jun-11	3.4	5	6.9	1711	13.0	29	<4	10	15	
Re-sample	14-Jul-11	--	--	--	--	<5	--	--	--	

See notes on page 6.

Table 1
Coldwater Road Landfill Facility
Landfill Leak Detection Vaults - Historical Analytical Results
Inorganics and Metals

Vault	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)				
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn	
		MDEQ Residential Drinking Water Criteria & RBSLs					100 (A)	1,000 (E)	100 (A)	2,400	
F	23-Mar-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	20-Jun-95	8.2	<1	6.8	1400	--	<20	<20	<30	190	
	30-Aug-95	6.1	<1	6.8	1100	NS	<20	<20	<40	220	
	28-Nov-95	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	27-Mar-96	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	18-Jun-96	6.2	77.0	6.8	1600	--	<20	<20	<20	<20	
	20-Aug-96	4.8	1500.0	7.1	1500	--	<20	20	<20	50	
	11-Nov-96	14.0	7100.0	7.0	1600	--	<20	<20	<20	30	
	19-Feb-97	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	9-May-97	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	8-Aug-97	3.0	21.0	6.1	1530	20.6	<10	<10	64	20	
	15-Nov-97	7.0	56.0	6.7	1800	13.0	<10	<10	93	130	
	9-Feb-98	5.0	30.0	6.5	1750	13.5	<10	<10	49	160	
	14-May-98	5.0	16.0	7.1	1400	25.4	<10	20	7	130	
	14-Aug-98	3.0	25.0	6.6	--	--	<10	<10	7	40	
	30-Nov-98	4.0	38.0	--	--	--	10	<10	47	30	
	19-Mar-99	4.2	52.0	6.8	982	14.4	<10	20	9	20	
	6-May-99	4.6	50.0	7.0	1460	28.0	<10	10	5	30	
	23-Jul-99	3.7	95.0	6.3	1262	21.2	6	17	6	26	
	22-Oct-99	3.7	12.0	6.3	1116	12.3	<10	<10	6	20	
	14-Mar-00	5.4	81.0	8.0	1250	14.9	<10	<10	6	30	
	20-Jun-00	4.4	66.0	7.1	1310	20.1	<10	40	<5	80	
	13-Sep-00	3.0	11.0	7.4	1440	15.6	<5	<10	6	20	
	10-Nov-20	3.9	41.0	6.8	1040	11.6	<10	60	5	100	
	12-Mar-01	5.5	24.0	7.1	1110	12.3	<10	<10	5	10	
	24-May-01	7.4	16.0	7.4	1470	12.8	<10	60	5	100	
	31-Aug-01	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	16-Nov-01	4.2	68.0	7.3	1110	12.9	<10	40	<5	100	
	8-Mar-02	4.4	11.0	6.9	1290	10.4	<10	10	<5	60	
	31-May-02	2.4	45.0	7.2	1200	14.3	<10	<10	6	20	
	5-Sep-02	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	12-Dec-02	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	18-Mar-03	3.7	7.0	6.8	1270	12.4	<5	19	<5	119	
	4-Jun-03	2.5	4.0	6.9	1300	10.9	<5	<5	<5	<5	
	5-Oct-03	3.9	5.0	6.9	1040	13.5	<5	11	5	66	
	8-Dec-03	NS	NS	NS	NS	NS	NS	NS	NS	NS	
	1-Dec-05	3.7	3.0	6.9	1640	10.7	<5	83	<5	62	
	Duplicate	7-Dec-05	4.7	5.0	--	1540	--	<5	31	19	<10
	Re-sample	14-Feb-06	--	--	7.9	1710	7.2	--	<4	--	--
		29-Jun-06	2.9	90.0	6.7	1710	15.3	7	<4	<5	9
	28-Nov-06	4.4	3.0	7.0	1610	13.9	5	<4	<5	10	
	6-Jun-07	3.9	2.0	6.4	1640	15.5	10	3	<5	8	
	12-Nov-07	2.2	53.0	6.8	1600	12.2	2	3	9	11	
Duplicate	24-Jun-08	2.3	5.0	6.9	1510	14.5	<5	<1	<5	<5	
	24-Jun-08	2.8	3.0	6.9	1500	14.5	<5	<1	<5	<5	
	17-Nov-08	1.8	9.0	7.2	1510	9.5	<5	<1	<5	15	
	23-Jun-09	2.9	29.0	7.1	1530	13.1	<5	<1	<5	10	
	17-Nov-09	3	16	7.0	1550	11.0	<5	<4	<5	11	
	14-Jun-10	3	14	7.0	1540	12.1	6	<4	<5	17	
	8-Nov-10	3	2	7.0	1590	12.3	16	<4	<5	14	
Re-sample	20-Jun-11	2.5	47	7.0	1642	14.6	23	<4	9	20	
	14-Jul-11	--	--	--	--	--	<5	--	--	--	

Notes: "<" - Not detected above specified detection limit.

"NS" - Not sampled - no liquid.

"SpC" - Specific conductivity in micro siemens (uS).

"T" - Temperature in degrees celsius.

"--" - Physical parameter not measured (instrument failure or duplicate sample).

Exceeds MDEQ Residential Drinking Water Criteria

"A" - Criterion is the state of Michigan drinking water standard established pursuant to Section 5 of 1976 PA 399, MCL 325.1005.

"E" - Criterion is the aesthetic drinking water value, as required by Section 20120a(5)

of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA)