

ANNUAL REPORT

**Landfill Leak Detection System
REALM Coldwater Road Landfill
Flint, Michigan
MID 005 356 860**

Motors Liquidation Company
Detroit, Michigan

February 2010

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Landfill Leak Detection System
REALM Coldwater Road Landfill
Flint, Michigan
MID 005 356 860

*Motors Liquidation Company
Detroit, Michigan*



Scott L. Cormier, P.E.
Vice President

February 2010





February 26, 2010

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

Re: Landfill Leak Detection System
2009 Annual Report
Coldwater Road Landfill
MID 005 356 860

File: 14774 / 45042 #5

Dear Mr. Conforti:

On behalf of Motors Liquidation Company, O'Brien & Gere Engineers, Inc. (O'Brien & Gere) is pleased to present the results of the 2009 annual leak detection system (LDS) sampling event conducted in November 2009 for the Coldwater Road Landfill site (Figure 1). Samples from six leak detection vaults (A through F) and six leachate collection sumps (A through F) were collected on November 17, 2009 for laboratory analysis. The samples were analyzed for total organic carbon (TOC, Method 415.1), total suspended solids (TSS, Method 160.2), specific conductivity (Method 120.1), and dissolved chromium (Cr), dissolved copper (Cu), dissolved nickel (Ni) and dissolved zinc (Zn, Method 200.8). The event also included field measurements for pH, specific conductivity and temperature.

The analytical results are summarized in three attached tables: Landfill Leak Detection Vaults – Historical Analytical Results, Inorganics and Metals (Table 1), Landfill Leachate Sumps – Historical Analytical Results, Inorganics and Metals (Table 2), and Leachate Sump Depth to Water (Table 3). A Site Location Map (Figure 1) and Landfill Site Layout (Figure 2) are also attached. The Analytical Laboratory Reports and the Chain of Custody forms are included as Appendix A. The samples for the leak detection vaults and leachate sumps were collected on November 17, 2009 using a peristaltic pump and tubing for each vault and sump. Duplicate samples were collected from vault C and sump C. Samples were placed directly into laboratory prepared containers, logged onto a chain of custody form and placed on ice for transport to Merit Laboratories, Inc., in East Lansing, Michigan.

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The laboratory analysis for TOC, TSS, dissolved metals and the field parameters continue to show historically consistent concentrations for the sumps and vaults (Tables 1 and 2). The following comparisons are based on recent (last couple) sampling events. The TOC concentrations increased in sumps A and E, and decreased in sump B, C, D and F. In sumps A, B, C and F, chromium, copper and nickel concentrations decreased, while zinc increased. In sump D, chromium and nickel concentrations decreased, while copper increased and zinc was not detected. In sump E, chromium was not detected, while copper decreased, and nickel and zinc concentrations increased.

The TOC concentrations increased in vaults A and E, decreased in vaults B and D, and stayed similar in vaults C and F. Chromium and copper were not detected in the vaults. In vault A, nickel and zinc concentrations decreased. In vault B, nickel increased and zinc remained the same. In vault C, nickel and zinc concentrations remained similar. In vault D, nickel decreased and zinc increased slightly. In vaults E and F, nickel was not detected, while zinc remained the same or similar.

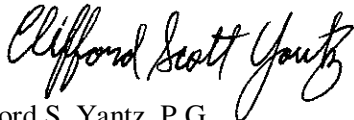
The duplicate samples collected during this sampling event exhibited values consistent with the original results.

There were no exceedances of the Shewart control limits, no significant spikes, and no consistent trends observed in the data this monitoring event. The Shewart control charts are included as Appendix B.

The next sampling event (semiannual event) is currently scheduled for June 2010. If you have any questions, please feel free to contact me at (248) 477-5701.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.



Clifford S. Yantz, P.G.
Technical Associate

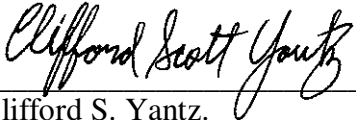
Enclosure

cc: David Favero – Motors Liquidation Company
Marianne Secrest – O'Brien & Gere

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

On Behalf of Remediation and Liability Management Company, Inc.



Clifford S. Yantz.
Agent for Motors Liquidation Company

Technical Associate–O'Brien & Gere Engineers, Inc.
Title

2-26-10
Date

cc: file

Tables

Table 1
REALM-Coldwater Road 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
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	<5	13	21	
17-Jan-06	5.9	12785	10.0	1630	8.4	<5	<5	13	8	
Re-sample	14-Feb-06	--	--	7.9	1800	8.5	--	14	--	
29-Jun-06	NS	NS	NS	NS	NS	NS	NS	NS	NS	
28-Nov-06	4.7	438	7.7	1940	13.2	<5	<4	13	6	
6-Jun-07	4.9	11	6.8	1990	11.7	13	4	20	8	
12-Nov-07	5.9	70	6.8	2030	12.4	4	5	21	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	

See notes on page 6.

Table 1
REALM-Coldwater Road 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
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	--	<4	--	
Duplicate	29-Jun-06	2.6	1.0	7.0	1050	13.9	<5	<4	5	
Duplicate	28-Nov-06	5.5	4.0	7.5	1380	13.0	<5	<4	8	
	28-Nov-06	4.7	--	7.2	1340	13.0	5	4	7	
Duplicate	6-Jun-07	4.7	2.0	6.3	1670	12.1	9	6	13	
	12-Nov-07	3.8	1.0	6.9	1690	12.6	2	5	16	
	24-Jun-08	3.2	6.0	7.0	1880	14.0	<5	2	8	
	17-Nov-08	2.4	<1	6.9	1818	9.6	<5	2	8	
	17-Nov-08	1.7	2.0	6.9	1820	9.6	<5	1	8	
	23-Jun-09	3.6	4.0	7.1	1780	13.3	<5	1	6	
17-Nov-09	3	0	7.0	1970	10.9	<5	<4	9	17	

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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
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	
Duplicate	17-Nov-09	5	20	7.1	1650	11.5	<5	<4	9	6

See notes on page 6.

Table 1
REALM-Coldwater Road 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
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
	12-Nov-07	7.3	5.0	6.9	1580	12.3	3	5	23	12
Duplicate	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

See notes on page 6.

Table 1
REALM-Coldwater Road 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
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	
Duplicate	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
Duplicate	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

See notes on page 6.

Table 1
REALM-Coldwater Road 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
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
	24-Jun-08	2.3	5.0	6.9	1510	14.5	<5	<1	<5	<5
Duplicate	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

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).

Table 2
REALM - Coldwater Road Facility
Landfill Leachate Sumps - Historical Analytical Results
Inorganics and Metals

Sump	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)				
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn	
A	23-Mar-95	400.0	22	11.2	4500	--	260	8900	1200	70	
	30-Aug-95	290.0	9800	11.3	4000	--	250	7400	830	<20	
	18-Jun-96	170.0	200	9.5	2800	--	50	4300	640	<20	
	11-Nov-96	350.0	3000	10.0	4400	--	150	8800	1300	30	
	7-May-97	85.0	62	7.9	2200	8.9	20	2450	422	10	
	5-Nov-97	110.0	14	8.5	2800	11.0	<1	1050	376	20	
	5-May-98	125.0	2	7.9	2280	9.1	40	1380	383	10	
	6-Nov-98	136.0	984	7.5	2750	11.7	40	2950	519	<10	
	26-Apr-99	110.0	253	9.5	1334	12.6	40	2380	375	<10	
	22-Oct-99	44.7	8	6.6	1750	12.1	20	960	155	30	
	20-Jun-00	53.4	16	8.2	1980	13.1	40	1160	187	20	
	10-Nov-00	66.7	31	7.7	2130	11.1	30	1050	174	20	
	24-May-01	70.0	16	8.6	2470	10.2	40	1030	163	20	
	16-Nov-01	69.6	300	7.9	2130	12.3	40	990	160	20	
	31-May-02	51.7	48	7.2	2340	15.3	80	880	127	20	
	12-Dec-03	55.2	25	7.4	1840	11.2	37	770	121	7	
	3-Jun-03	75.5	90	--	--	--	41	1180	156	22	
	8-Dec-03	67.0	115	8.8	2210	11.6	74	969	138	31	
	30-Jun-04	62.0	6	8.4	2501	12.6	104	1450	161	7	
	19-Nov-04	36.9	2.7	8.2	2070	11.4	31	492	70	20	
	15-Jun-05	89.0	18.0	9.0	3320	14.7	215	1930	200	<5	
	17-Jan-06	83.7	980.0	8.4	3970	6.9	70	1350	155	14	
	29-Jun-06	65.4	36.0	8.5	3640	11.7	192	1070	109	7	
	28-Nov-06	78.2	258	8.2	3660	12.9	132	1240	126	6	
	6-Jun-07	64.4	7	6.9	3350	10.0	95	1280	131	17	
	12-Nov-07	71.7	3	7.2	3970	11.8	41	1460	150	22	
24-Jun-08	46.6	2	7.9	3210	12.4	123	1240	118	8		
17-Nov-08	48.5	4	7.3	3670	10.6	65	1190	114	12		
23-Jun-09	61.0	3	7.5	2900	12.8	222	1400	126	<5		
17-Nov-09	69	40	8.4	3570	9.6	71	1040	100	14		
B	23-Mar-95	800.0	310	12.1	7100	--	220	14000	1700	91	
	30-Aug-95	590.0	7400	11.5	4600	--	220	9300	1100	<20	
	18-Jun-96	36.0	<10	8.6	720	--	100	760	100	<20	
	11-Nov-96	340.0	19	10.0	3100	--	180	6100	850	30	
	7-May-97	184.0	963	8.5	2340	8.1	150	3910	607	10	
	5-Nov-97	53.0	20	7.2	1600	10.0	50	1050	204	10	
	5-May-98	241.0	24	9.6	3010	9.2	280	5600	644	10	
	6-Nov-98	177.0	438	7.8	2950	12.1	100	2690	558	<10	
	26-Apr-99	75.0	10600	10.2	835	8.9	30	500	238	<10	
	22-Oct-99	126.0	1604	8.1	1410	11.9	30	750	387	<10	
	20-Jun-00	49.2	4	9.1	1880	12.6	160	1180	160	<10	
	10-Nov-00	78.2	80	8.6	1460	11.5	70	1170	205	<10	
	24-May-01	101.0	502	9.1	2800	10.4	120	1490	225	<10	
	16-Nov-01	189.0	13	9.5	3310	12.4	290	3050	426	<10	
	31-May-02	65.7	434	7.2	2530	14.7	160	1070	154	<10	
	12-Dec-03	118.0	15	8.9	2150	11.4	215	1790	260	27	
	3-Jun-03	113.0	44	--	--	--	118	1510	216	<5	
	8-Dec-03	87.8	22	7.1	1990	11.5	170	1380	199	45	
	30-Jun-04	110	14	8.1	1598	12.5	508	1880	225	7	
	19-Nov-04	66.2	2	8.2	2690	11.5	148	1100	163	13	
	15-Jun-05	84.0	8	8.8	3200	14.1	324	1050	160	19	
	5-Dec-05	35.7	6	7.1	2290	10.5	81	374	56	22	
	29-Jun-06	26.6	6	7.7	1650	10.9	156	358	48	23	
	28-Nov-06	47.5	6	8.2	2300	12.5	142	526	72	25	
	Duplicate 28-Nov-06	59.8	--	8.2	2370	12.5	142	522	72	15	
	6-Jun-07	32.2	2	6.6	1950	9.8	18	275	46	18	
12-Nov-07	22.6	1	7.9	2060	12.2	28	226	32	24		
24-Jun-08	45.9	6	8.2	2430	11.9	659	877	99	16		
17-Nov-08	41.5	19	6.5	2560	10.6	401	767	91	20		
Duplicate 17-Nov-08	39.8	38	6.5	2550	10.6	399	763	91	23		
23-Jun-09	52.3	1	7.4	2250	13.2	685	696	82	17		
17-Nov-09	52	2	8.1	2610	10.6	269	579	73	39		

See notes on page 3.

Table 2
REALM - Coldwater Road Facility
Landfill Leachate Sumps - Historical Analytical Results
Inorganics and Metals

Sump	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)				
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn	
C	23-Mar-95	750.0	18	11.8	6000	--	21	18000	2400	36	
	30-Aug-95	660.0	30000	10.9	4900	--	21	15000	2100	26	
	18-Jun-96	280.0	1200	9.1	2700	--	<20	5100	820	<20	
	11-Nov-96	730.0	93	10.0	5200	--	<20	15000	2500	50	
	7-May-97	433.0	1200	8.6	4210	10.0	10	10200	2070	40	
	5-Nov-97	289.0	83	8.3	3400	10.0	<10	3150	1320	20	
	5-May-98	235.0	24	9.8	3520	9.8	60	5640	891	10	
	6-Nov-98	418.0	164	7.9	4590	11.9	<10	4660	145	<10	
	26-Apr-99	278.0	24	9.5	2520	8.6	<10	1730	1148	<10	
	22-Oct-99	351.0	1604	8.2	1210	12.1	<10	1330	1050	<10	
	20-Jun-00	156.0	12	8.5	2270	11.9	<10	3370	802	<10	
	10-Nov-00	250.0	30	8.4	1920	11.4	<10	620	998	<10	
	24-May-01	200.0	120	9.0	3660	10.3	<10	4950	1110	20	
	16-Nov-01	269.0	191	8.5	3930	12.1	10	5470	1800	10	
	31-May-02	113.0	24	7.2	2530	14.4	<10	2510	612	10	
	12-Dec-03	198.0	18	8.1	4100	11.2	12	3020	1060	15	
	3-Jun-03	178.0	34	--	--	--	15	4790	1030	8	
	8-Dec-03	85.2	742	8.0	2140	11.9	9	607	708	62	
	30-Jun-04	96.0	10	8.5	2708	12.0	46	2470	539	5	
	19-Nov-04	126	16	8.4	3200	11.6	32	3190	874	13	
	15-Jun-05	95	10	7.2	2950	14.3	21	2350	505	16	
	5-Dec-05	56.7	12	7.9	2830	10.9	30	1570	363	12	
	7-Dec-05	62.0	2	--	2860	--	28	1700	364	<10	
	29-Jun-06	145.7	20	8.5	3810	11.4	25	3030	847	8	
	28-Nov-06	60.3	6	8.0	2340	12.9	43	1380	353	<5	
	6-Jun-07	3.9	1	7.0	2650	11.0	44	1570	365	<5	
	12-Nov-07	83.7	1	8.2	3660	12.2	44	2080	543	8	
	24-Jun-08	65.4	5	7.9	3530	13.0	8	1820	456	22	
	17-Nov-08	120.0	10	8.2	4510	10.6	30	2940	939	22	
	23-Jun-09	139.0	9	8.2	4240	12.7	25	3600	800	7	
	Duplicate	17-Nov-09	90	4	7.9	3940	11.1	22	2280	447	12
			98	7	7.9	3950	11.1	21	2260	438	12
	D	23-Mar-95	650.0	45	12.3	8400	--	360	7800	1600	<20
30-Aug-95		550.0	69000	12.0	6400	--	260	6100	1400	<20	
18-Jun-96		300.0	230	11.0	3300	--	100	3100	850	<20	
11-Nov-96		660.0	3500	12.0	5700	--	220	7200	1800	30	
7-May-97		331.0	432	9.1	4020	10.2	30	4110	1330	<10	
5-Nov-97		208.0	546	8.8	3400	10.2	20	3000	1020	20	
5-May-98		251.0	<1	10.6	4200	9.7	110	3810	1120	10	
6-Nov-98		193.0	8280	7.9	3940	11.4	10	2530	101	<10	
26-Apr-99		177.0	29600	10.5	1237	8.0	10	770	1013	<10	
22-Oct-99		199.0	10748	8.9	910	10.9	<10	70	735	<10	
20-Jun-00		112.0	16	8.8	1190	11.6	<10	430	656	<10	
10-Nov-00		159.0	100	9.1	2360	11.5	20	760	831	<10	
24-May-01		196.0	124	10.8	3900	10.9	10	1000	1270	<10	
16-Nov-01		64.2	268	8.9	1690	12.0	<10	100	414	<10	
31-May-02		72.3	137	7.2	2020	14.3	<10	210	445	<10	
12-Dec-03		130.0	4	8.8	1430	11.5	11	926	798	<5	
3-Jun-03		80.8	6	--	--	--	7	878	540	<5	
8-Dec-03		48.8	392	8.2	2470	10.9	7	651	423	18	
30-Jun-04		160.0	34	10.2	3601	--	25	1670	1320	<5	
19-Nov-04		157	14	10.4	4320	11.4	34	1550	1680	8	
15-Jun-05		79	8	11.1	3160	12.2	14	737	822	<5	
Duplicate		15-Jun-05	76.0	26.0	--	--	--	12	724	812	<5
		5-Dec-05	123.0	6.0	8.2	5320	10.9	35	1420	1340	<5
		29-Jun-06	87.6	14.0	10.0	4120	12.4	16	714	995	5
		28-Nov-06	128.9	2	10.1	5180	12.9	23	651	1300	<5
		6-Jun-07	157.0	11	9.3	5980	11.0	62	955	1770	<5
		12-Nov-07	115.0	78	10.2	5550	11.7	34	1680	1480	8
Duplicate		12-Nov-07	109.0	28	10.2	5550	11.7	31	1540	1400	3
		24-Jun-08	99.5	7	9.9	6170	11.8	20	990	1640	7
		17-Nov-08	295.0	2	11.1	6220	10.8	62	2460	2090	5
		23-Jun-09	308.0	7	10.9	6210	14.8	88	2170	1990	<5
		17-Nov-09	130	10	9.8	4870	11.6	37	2240	1180	<5

See notes on page 3.

Table 2
REALM - Coldwater Road Facility
Landfill Leachate Sumps - Historical Analytical Results
Inorganics and Metals

Sump	Sample Date	Indicator Parameters					Dissolved Metals (ug/L)				
		TOC (mg/L)	TSS (mg/L)	pH	SpC	T	Cr	Cu	Ni	Zn	
E	23-Mar-95	250.0	1400	11.7	4000	--	79	1500	850	<20	
	30-Aug-95	120.0	37000	9.7	2100	--	25	980	270	<20	
	18-Jun-96	9.6	2000	7.6	1800	--	<20	<20	<20	40	
	11-Nov-96	23.0	2200	8.2	1800	--	<20	20	50	<20	
	7-May-97	6.0	188	6.8	1560	9.7	<10	<10	30	90	
	11/05/97	10.0	3370	7.0	1600	10.0	<10	10	72	30	
	5-May-98	10.0	13300	7.0	1750	10.1	<10	20	23	40	
	6-Nov-98	5.0	2500	5.6	1500	11.9	<10	60	11	40	
	26-Apr-99	8.6	7720	7.7	1428	8.2	<10	30	22	<10	
	22-Oct-99	4.7	3485	6.8	1115	10.8	<10	50	10	30	
	20-Jun-00	7.0	2	6.8	1410	12.4	<10	20	<10	20	
	10-Nov-00	3.2	<1	7.3	1550	11.4	<10	30	7	20	
	24-Feb-01	9.0	292	8.0	1660	10.6	<10	20	7	20	
	16-Nov-01	4.4	350	7.3	1240	12.2	<10	10	23	30	
	31-May-02	10.1	9	7.2	1470	14.6	<10	90	62	30	
	12-Dec-03	4.5	310	7.7	1490	11.1	<5	21	12	<5	
	3-Jun-03	9.0	1884	--	--	--	<5	20	11	7	
	8-Dec-03	22.4	331	7.3	1320	11.4	63	132	53	34	
	30-Jun-04	5.8	5	7.8	1061	--	<5	8	13	33	
	19-Nov-04	6.2	2	7.6	1380	11.8	19	14	16	16	
	15-Jun-05	230.0	10	--	19920	16.6	285	1220	337	5	
	5-Dec-05	257.0	396	7.3	9460	10.7	142	514	232	<5	
	29-Jun-06	11.4	4	8.2	1690	11.6	18	48	34	6	
	28-Nov-06	45.6	<1	8.1	2220	12.9	29	728	180	<5	
	Duplicate	6-Jun-07	6.9	3	6.4	1630	11.6	12	13	10	23
		6-Jun-07	6.7	4	--	1630	--	11	15	10	20
		12-Nov-07	5.6	3	7.3	1570	12.0	5	11	14	19
		24-Jun-08	3.8	3	7.4	1600	11.5	<5	6	6	9
	Duplicate	17-Nov-08	4.9	1	7.3	1660	11.3	24	10	7	13
		23-Jun-09	4.7	<1	6.9	1600	11.6	<5	6	6	14
		23-Jun-09	3.5	1	6.9	1580	11.6	<5	6	5	15
		17-Nov-09	5	1	7.4	1520	11.2	<5	4	20	24
	F	23-Mar-95	300.0	100	11.8	4100	--	61	3200	2200	<20
30-Aug-95		100.0	250	7.5	1600	--	<20	300	85	<20	
18-Jun-96		5.4	19	7.4	1400	--	<20	<20	<20	40	
11-Nov-96		7.1	260	7.7	1200	--	<20	<20	30	50	
7-May-97		5.0	138	6.5	1190	9.6	<20	<20	18	80	
5-Nov-97		5.0	14	7.1	1300	11.0	<10	<10	49	40	
5-May-98		6.0	635	7.1	1250	10.5	<10	<10	6	30	
6-Nov-98		4.0	14	6.1	1340	12.3	<10	70	7	50	
26-Apr-99		5.3	38	8.1	682	8.2	<10	40	27	10	
22-Oct-99		3.4	11	6.6	1053	11.3	<10	30	6	20	
20-Jun-00		4.1	2	7.7	1170	11.4	<10	<10	<5	<10	
10-Nov-00		2.9	8	7.3	1340	11.1	<10	<10	30	30	
24-May-01		6.6	40	8.5	1310	10.6	<10	20	<10	20	
16-Nov-01		4.2	323	7.3	1070	12.1	<10	10	8	20	
31-May-02		5.2	150	7.2	1250	14.8	<10	20	<5	160	
12-Dec-03		3.4	7	7.7	1180	11.3	<5	<5	<5	<5	
3-Jun-03		5.9	336	--	--	--	<5	12	<5	21	
8-Dec-03		6.0	35	7.0	1210	11.3	<5	14	15	33	
30-Jun-04		4.7	2	7.7	949	11.1	<5	27	13	20	
19-Nov-04		6.7	3	7.9	1260	11.2	12	8	14	11	
15-Jun-05		13.0	8	6.4	1630	16.7	<5	9	13	55	
17-Jan-06		33.9	3263	7.5	2390	6.6	107	475	124	12	
29-Jun-06		7.0	2	7.6	1280	11.6	16	38	11	29	
28-Nov-06		4.9	<1	8.0	1250	12.9	5	18	9	8	
6-Jun-07		22.1	8	6.8	1710	11.7	11	74	22	10	
12-Nov-07		3.8	1	7.7	1350	11.9	3	16	13	30	
Duplicate		24-Jun-08	4.0	2	8.0	1160	12.3	12	15	6	102
		24-Jun-08	3.9	1	8.0	1160	12.3	11	14	6	8
		17-Nov-08	13.6	2	7.6	1740	10.9	29	87	81	11
		23-Jun-09	14.4	<1	7.8	1500	12.2	43	100	30	9
17-Nov-09		10	0	8.0	1570	10.9	25	46	19	23	
Equipment Blank		24-Jun-08	<1	1	--	4	--	<5	<1	<5	<5
		17-Nov-08	1	2	--	4	--	<5	5	<5	23

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).

Table 3
REALM - Coldwater Road Facility
Leachate Sump Depth to Water

November 17, 2009

Sump	DTW
A	20.52
B	13.95
C	16.05
D	19.66
E	23.11
F	21.41

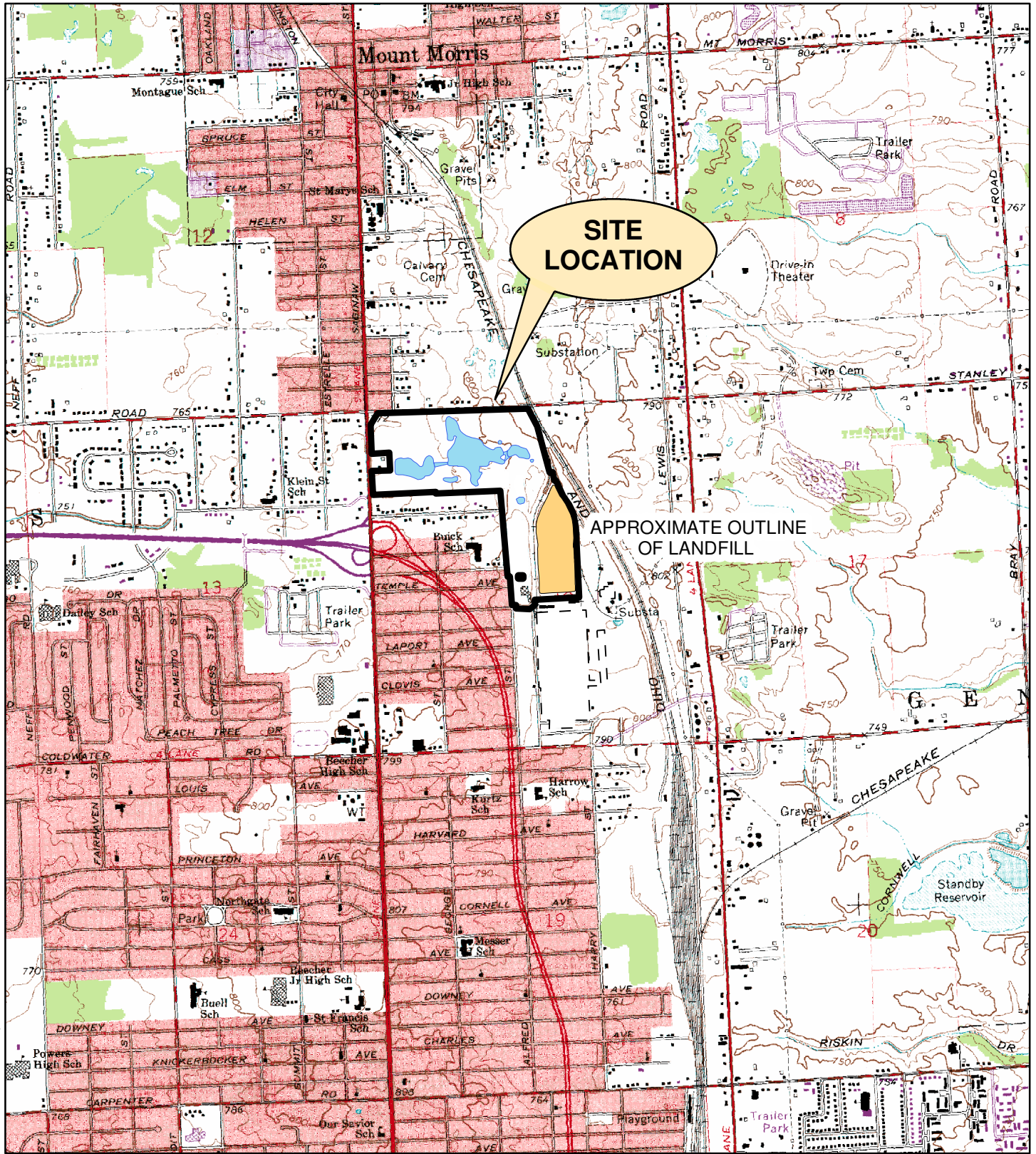
Notes:

DTW= Depth to Water, measured in feet below top of casing

Figures

I:\078\PROJECTS\4966CW\39196\O&M 2009\DOC\DWG 001.MXD

PLOT DATE: 1/11/2009 jmo



REALM
COLDWATER ROAD FACILITY
FLINT, MICHIGAN

SITE LOCATION MAP



STANLEY ROAD

SAGINAW STREET

KLEIN STREET

WETLANDS

DIRT ROAD / TRAIL

RAILROAD

VAULT A

CELL A

SUMP A

VAULT B

CELL B

SUMP B

VAULT C

CELL C

SUMP C

VAULT D

CELL D

SUMP D

VAULT E

CELL E

SUMP E

VAULT F

CELL F

SUMP F

CONTROL BUILDING

DRAINAGE SWALE

DRAINAGE CULVERT (TYP)

ABANDONED RAILROAD

MORRIS HILLS



FENCE

CONCRETE / GRAVEL ROAD

FIGURE 2

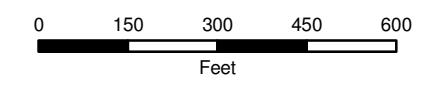


LEGEND

-  LEACHATE COLLECTION SUMP
-  ACCESS PORT FOR LEAK DETECTION VAULT

REALM
COLDWATER ROAD
LANDFILL FACILITY
FLINT, MICHIGAN

SITE LAYOUT



JANUARY 2009
4966/36196-008



MAP USES DATA FROM THE MICHIGAN CENTER FOR GEOGRAPHIC INFORMATION

APPENDIX A

Analytical Laboratory Report



Analytical Laboratory Report

Report ID: S42578.01(01)
Generated on 12/08/2009

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): S42578.01-S42578.10
Project: Coldwater Road Landfill Semi-Annual Sampling
Collected Date: 11/16/2009 - 11/17/2009
Submitted Date/Time: 11/17/2009 13:35
Sampled by: Kevin Schneider
P.O. #:

Report Notes

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

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (10 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S42578.01	B-9-111609	Groundwater	11/16/2009 12:55
S42578.02	B-2D-111609	Groundwater	11/16/2009 16:10
S42578.03	Sump A-111709	Sump Water	11/17/2009 09:05
S42578.04	Vault A-111709	Wastewater	11/17/2009 09:50
S42578.05	Sump B-111709	Sump Water	11/17/2009 10:20
S42578.06	Vault B-111709	Wastewater	11/17/2009 10:40
S42578.07	Sump C-111709	Sump Water	11/17/2009 11:00
S42578.08	Vault C-111709	Wastewater	11/17/2009 11:20
S42578.09	Dup-01-111709	Sump Water	11/17/2009
S42578.10	Dup-02-111709	Wastewater	11/17/2009



Analytical Laboratory Report

Lab Sample ID: S42578.03
 Sample Tag: Sump A-111709
 Collected Date/Time: 11/17/2009 09:05
 Matrix: Sump Water
 COC Reference: 45936

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR
2	40ml Glass	H2SO4	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	3,570	umhos/cm		120.1	11/20/09 14:14	JKB		
TOC	69	mg/L	4	EPA 415	11/25/09 12:00	TestA		O1
Total Suspended Solids	40	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	0.071	mg/L	0.005	200.8	11/23/09 13:07	SLS	7440-47-3	
Copper, Dissolved	1.04	mg/L	0.004	200.8	11/23/09 13:07	SLS	7440-50-8	
Nickel, Dissolved	0.100	mg/L	0.005	200.8	11/23/09 13:07	SLS	7440-02-0	
Zinc, Dissolved	0.014	mg/L	0.005	200.8	11/23/09 13:07	SLS	7440-66-6	

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level



Analytical Laboratory Report

Lab Sample ID: S42578.04
 Sample Tag: Vault A-111709
 Collected Date/Time: 11/17/2009 09:50
 Matrix: Wastewater
 COC Reference: 45936

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR
2	40ml Glass	H2SO4	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	2,090	umhos/cm		120.1	11/20/09 14:16	JKB		
TOC	6	mg/L	1	EPA 415	11/25/09 12:00	TestA		O1
Total Suspended Solids	8	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 13:09	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/23/09 13:09	SLS	7440-50-8	
Nickel, Dissolved	0.022	mg/L	0.005	200.8	11/23/09 13:09	SLS	7440-02-0	
Zinc, Dissolved	0.007	mg/L	0.005	200.8	11/23/09 13:09	SLS	7440-66-6	

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level



Analytical Laboratory Report

Lab Sample ID: S42578.05
 Sample Tag: Sump B-111709
 Collected Date/Time: 11/17/2009 10:20
 Matrix: Sump Water
 COC Reference: 45936

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR
2	40ml Glass	H2SO4	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	2,610	umhos/cm		120.1	11/20/09 14:18	JKB		
TOC	52	mg/L	2	EPA 415	11/25/09 12:00	TestA		O1
Total Suspended Solids	2	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	0.269	mg/L	0.005	200.8	11/23/09 13:12	SLS	7440-47-3	
Copper, Dissolved	0.579	mg/L	0.004	200.8	11/23/09 13:12	SLS	7440-50-8	
Nickel, Dissolved	0.073	mg/L	0.005	200.8	11/23/09 13:12	SLS	7440-02-0	
Zinc, Dissolved	0.039	mg/L	0.005	200.8	11/23/09 13:12	SLS	7440-66-6	

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level



Analytical Laboratory Report

Lab Sample ID: S42578.06
 Sample Tag: Vault B-111709
 Collected Date/Time: 11/17/2009 10:40
 Matrix: Wastewater
 COC Reference: 45936

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR
2	40ml Glass	H2SO4	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	1,970	umhos/cm		120.1	11/20/09 14:20	JKB		
TOC	3	mg/L	1	EPA 415	11/25/09 12:00	TestA		O1
Total Suspended Solids	0	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 13:15	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/23/09 13:15	SLS	7440-50-8	
Nickel, Dissolved	0.009	mg/L	0.005	200.8	11/23/09 13:15	SLS	7440-02-0	
Zinc, Dissolved	0.017	mg/L	0.005	200.8	11/23/09 13:15	SLS	7440-66-6	

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level



Analytical Laboratory Report

Lab Sample ID: S42578.07
 Sample Tag: Sump C-111709
 Collected Date/Time: 11/17/2009 11:00
 Matrix: Sump Water
 COC Reference: 45936

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR
2	40ml Glass	H2SO4	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	3,940	umhos/cm		120.1	11/20/09 14:22	JKB		
TOC	90	mg/L	4	EPA 415	11/25/09 12:00	TestA		O1
Total Suspended Solids	4	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	0.022	mg/L	0.005	200.8	11/23/09 13:18	SLS	7440-47-3	
Copper, Dissolved	2.28	mg/L	0.004	200.8	11/23/09 13:18	SLS	7440-50-8	
Nickel, Dissolved	0.447	mg/L	0.005	200.8	11/23/09 13:18	SLS	7440-02-0	
Zinc, Dissolved	0.012	mg/L	0.005	200.8	11/23/09 13:18	SLS	7440-66-6	

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level



Analytical Laboratory Report

Lab Sample ID: S42578.08
 Sample Tag: Vault C-111709
 Collected Date/Time: 11/17/2009 11:20
 Matrix: Wastewater
 COC Reference: 45936

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR
2	40ml Glass	H2SO4	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	1,650	umhos/cm		120.1	11/20/09 14:24	JKB		
TOC	5	mg/L	1	EPA 415	11/25/09 12:00	TestA		O1
Total Suspended Solids	15	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 13:21	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/23/09 13:21	SLS	7440-50-8	
Nickel, Dissolved	0.009	mg/L	0.005	200.8	11/23/09 13:21	SLS	7440-02-0	
Zinc, Dissolved	0.006	mg/L	0.005	200.8	11/23/09 13:21	SLS	7440-66-6	

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level



Analytical Laboratory Report

Lab Sample ID: S42578.09
 Sample Tag: Dup-01-111709
 Collected Date/Time: 11/17/2009 :
 Matrix: Sump Water
 COC Reference: 45936

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR
2	40ml Glass	H2SO4	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	3,950	umhos/cm		120.1	11/20/09 14:26	JKB		
TOC	98	mg/L	4	EPA 415	11/25/09 12:00	TestA		O1
Total Suspended Solids	7	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	0.021	mg/L	0.005	200.8	11/23/09 13:24	SLS	7440-47-3	
Copper, Dissolved	2.26	mg/L	0.004	200.8	11/23/09 13:24	SLS	7440-50-8	
Nickel, Dissolved	0.438	mg/L	0.005	200.8	11/23/09 13:24	SLS	7440-02-0	
Zinc, Dissolved	0.012	mg/L	0.005	200.8	11/23/09 13:24	SLS	7440-66-6	

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level



Analytical Laboratory Report

Lab Sample ID: S42578.10
 Sample Tag: Dup-02-111709
 Collected Date/Time: 11/17/2009 :
 Matrix: Wastewater
 COC Reference: 45936

Sample Containers

#	Type	Preservative(s)	Refrigerated?	Arrival Temp. (C)	Thermometer #
1	125ml Plastic	HNO3	Yes	4.8	IR
1	500ml Plastic	None	Yes	4.8	IR
2	40ml Glass	H2SO4	Yes	4.8	IR

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	1,650	umhos/cm		120.1	11/20/09 14:28	JKB		
TOC	5	mg/L	1	EPA 415	11/25/09 12:00	TestA		O1
Total Suspended Solids	20	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 13:27	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/23/09 13:27	SLS	7440-50-8	
Nickel, Dissolved	0.009	mg/L	0.005	200.8	11/23/09 13:27	SLS	7440-02-0	
Zinc, Dissolved	0.006	mg/L	0.005	200.8	11/23/09 13:27	SLS	7440-66-6	

O-Analysis performed by outside laboratory. See attached report. 1-Method blank contamination. The associated method blank contains the target analyte at a reportable level

ANALYTICAL REPORT

PROJECT NO. 42578

42578

Lot #: A9K200568

Paula Shaw

Merit Laboratories
2680 E Lansing Drive
Lansing, MI 48823

TESTAMERICA LABORATORIES, INC.



Denise D. Heckler
Project Manager
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Approved for release.
Denise D. Heckler
Project Manager
12/7/2009 3:27 PM

December 7, 2009

TestAmerica Laboratories, Inc.

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CASE NARRATIVE

A9K200568

The following report contains the analytical results for ten water samples submitted to TestAmerica North Canton by Merit Laboratories from the 42578 Site, project number 42578. The samples were received November 20, 2009, according to documented sample acceptance procedures.

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

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

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

All parameters were evaluated to the method detection limit and include qualified results where applicable.

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

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

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

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 3.2°C.

CASE NARRATIVE (continued)

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

The sample(s) that contained concentrations of target analyte(s) at a reportable level in the associated Method Blank(s) were flagged with "J". Refer to the sample report pages for the affected analytes(s).

QUALITY CONTROL ELEMENTS NARRATIVE

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

QC BATCH

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

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

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

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

LABORATORY CONTROL SAMPLE

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

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

METHOD BLANK

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

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

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

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

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

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

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

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

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

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

SURROGATE COMPOUNDS

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

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

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

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

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



TestAmerica Certifications and Approvals:

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

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EXECUTIVE SUMMARY - Detection Highlights

A9K200568

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
42578.01 11/16/09 12:55 001				
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1
Total Organic Halogens	84.1	30.0	ug/L	SW846 9020B
42578.02 11/16/09 16:10 002				
Total Organic Carbon	4 J	1	mg/L	MCAWW 415.1
42578.03 11/17/09 09:05 003				
Total Organic Carbon	69 J	4	mg/L	MCAWW 415.1
42578.04 11/17/09 09:50 004				
Total Organic Carbon	6 J	1	mg/L	MCAWW 415.1
42578.05 11/17/09 10:20 005				
Total Organic Carbon	52 J	2	mg/L	MCAWW 415.1
42578.06 11/17/09 10:40 006				
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1
42578.07 11/17/09 11:00 007				
Total Organic Carbon	90 J	4	mg/L	MCAWW 415.1
42578.08 11/17/09 11:20 008				
Total Organic Carbon	5 J	1	mg/L	MCAWW 415.1

(Continued on next page)

EXECUTIVE SUMMARY - Detection Highlights

A9K200568

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
42578.09 11/17/09 009				
Total Organic Carbon	98 J	4	mg/L	MCAWW 415.1
42578.10 11/17/09 010				
Total Organic Carbon	5 J	1	mg/L	MCAWW 415.1

ANALYTICAL METHODS SUMMARY

A9K200568

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Total Organic Carbon	MCAWW 415.1
Total Organic Halogens	SW846 9020B

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A9K200568

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
LPWC1	001	42578.01	11/16/09	12:55
LPWC8	002	42578.02	11/16/09	16:10
LPWC9	003	42578.03	11/17/09	09:05
LPWDC	004	42578.04	11/17/09	09:50
LPWDF	005	42578.05	11/17/09	10:20
LPWDH	006	42578.06	11/17/09	10:40
LPWDJ	007	42578.07	11/17/09	11:00
LPWDK	008	42578.08	11/17/09	11:20
LPWDM	009	42578.09	11/17/09	
LPWDP	010	42578.10	11/17/09	

NOTE(S) :

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

Merit Laboratories

Client Sample ID: 42578.01

General Chemistry

Lot-Sample #...: A9K200568-001 Work Order #...: LPWC1 Matrix.....: WG
Date Sampled...: 11/16/09 12:55 Date Received...: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	11/25/09	9329140
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	84.1	30.0	ug/L	SW846 9020B	11/24/09	9328327
			Dilution Factor: 1	MDL.....: 19.0		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.02

General Chemistry

Lot-Sample #...: A9K200568-002 Work Order #...: LPWC8 Matrix.....: WG
Date Sampled...: 11/16/09 16:10 Date Received...: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	4 J	1	mg/L	MCAWW 415.1	11/25/09	9329140
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/24/09	9328327
			Dilution Factor: 1	MDL.....: 19.0		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.03

General Chemistry

Lot-Sample #...: A9K200568-003 Work Order #...: LPWC9 Matrix.....: WG
Date Sampled...: 11/17/09 09:05 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	69 J	4	mg/L	MCAWW 415.1	11/25/09	9329140
		Dilution Factor: 4		MDL.....: 1		

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.04

General Chemistry

Lot-Sample #...: A9K200568-004 Work Order #...: LPWDC Matrix.....: WG
Date Sampled...: 11/17/09 09:50 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	6 J	1	mg/L	MCAWW 415.1	11/25/09	9329140

Dilution Factor: 1 MDL.....: 0.2

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.05

General Chemistry

Lot-Sample #...: A9K200568-005 Work Order #...: LPWDF Matrix.....: WG
Date Sampled...: 11/17/09 10:20 Date Received...: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	52 J	2	mg/L	MCAWW 415.1	11/25/09	9329140

Dilution Factor: 2 MDL.....: 0.5

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.06

General Chemistry

Lot-Sample #...: A9K200568-006 Work Order #...: LPWDH Matrix.....: WG
Date Sampled...: 11/17/09 10:40 Date Received...: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	3 J	1	mg/L	MCAWW 415.1	11/25/09	9329140

Dilution Factor: 1 MDL.....: 0.2

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.07

General Chemistry

Lot-Sample #...: A9K200568-007 Work Order #...: LPWDJ Matrix.....: WG
Date Sampled...: 11/17/09 11:00 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	90 J	4	mg/L	MCAWW 415.1	11/25/09	9329140

Dilution Factor: 4 MDL.....: 1

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.08

General Chemistry

Lot-Sample #...: A9K200568-008 Work Order #...: LPWDK Matrix.....: WG
Date Sampled...: 11/17/09 11:20 Date Received...: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	5 J	1	mg/L	MCAWW 415.1	11/25/09	9329140

Dilution Factor: 1 MDL.....: 0.2

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.09

General Chemistry

Lot-Sample #...: A9K200568-009
Date Sampled...: 11/17/09

Work Order #...: LPWDM
Date Received...: 11/20/09

Matrix.....: WG

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	98 J	4	mg/L	MCAWW 415.1	11/25/09	9329140

Dilution Factor: 4

MDL.....: 1

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Merit Laboratories

Client Sample ID: 42578.10

General Chemistry

Lot-Sample #...: A9K200568-010

Work Order #...: LPWDP

Matrix.....: WG

Date Sampled...: 11/17/09

Date Received...: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	5 J	1	mg/L	MCAWW 415.1	11/25/09	9329140

Dilution Factor: 1

MDL.....: 0.2

NOTE(S):

RL Reporting Limit

J Method blank contamination. The associated method blank contains the target analyte at a reportable level.

QUALITY CONTROL SECTION

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A9K200568

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/24/09	9328327
		Dilution Factor: 1				
Total Organic Carbon	0.3 B	1	mg/L	MCAWW 415.1	11/25/09	9329140
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.
B Estimated result. Result is less than RL.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A9K200568

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogens	98	(67 - 115)	SW846 9020B Dilution Factor: 1	11/24/09	9328327
Work Order #: LP7FF1AC LCS Lot-Sample#: A9K240000-327					
Total Organic Carbon	94	(88 - 115)	MCAWW 415.1 Dilution Factor: 1	11/25/09	9329140
Work Order #: LP40D1AC LCS Lot-Sample#: A9K250000-140					

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A9K200568

Matrix.....: WATER

Date Sampled...: 11/17/09 13:15 Date Received...: 11/19/09

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogens			WO#: LPQ0H1AD-MS/LPQ0H1AE-MSD			MS Lot-Sample #: A9K190488-001	
	83	(59 - 126)			SW846 9020B	11/24/09	9328327
	94	(59 - 126)	13	(0-99)	SW846 9020B	11/24/09	9328327
			Dilution Factor: 1				

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A9K200568

Matrix.....: WG

Date Sampled...: 11/16/09 12:55 Date Received...: 11/20/09

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon			WO#: LPWC11AD-MS/LPWC11AE-MSD			MS Lot-Sample #: A9K200568-001	
	97	(72 - 136)			MCAWW 415.1	11/25/09	9329140
	98	(72 - 136)	1.2	(0-20)	MCAWW 415.1	11/25/09	9329140
			Dilution Factor: 1				

NOTE(S):

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

Chain of Custody Record

TestAmerica Laboratory location: DW NPDES RCRA Other _____

Regulatory program: DW NPDES RCRA Other _____

TestAmerica Laboratories, Inc.
COC No: _____

Company Name: Merit Labs		Client Contact: Paula Shaw		Site Contact: _____		Lab Contact: _____		COC No: 1 of 1 COCs										
Address: 2680 East Lansing Dr.		Telephone: _____		Telephone: _____		Telephone: _____												
City/State/Zip: East Lansing, MI 48823		Email: _____		TAT if different from below: 3DA		Analysis: _____												
Phone: 517-332-0167		Method of Shipment/Carrier: VPS		<input type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day														
Project Name: 492578		Shipping/Tracking No: _____																
Project Number: _____																		
PO# 492578																		
Sample Identification		Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	TOC	TOX	Sample Specific Notes / Special Instructions:
492578.01		11-16	12:55	✓					3							X	X	
.02		11-16	16:10	✓					3							X	X	
.03		11-17	09:05	✓					2							X	X	
.04			09:50	✓					2							X	X	
.05			10:20	✓					2							X	X	
.06			10:40	✓					2							X	X	
.07			11:00	✓					2							X	X	
.08			11:20	✓					2							X	X	
.09				✓					2							X	X	
.10				✓					2							X	X	

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab Archive For _____ Months

Relinquished by: Paula Shaw	Company: Merit	Date/Time: 16:00/11-19-09	Received by: VPS	Company: _____	Date/Time: _____
Relinquished by: _____	Company: _____	Date/Time: _____	Received by: Paula Shaw	Company: TAL	Date/Time: 11/20/09 10:00
Relinquished by: _____	Company: _____	Date/Time: _____	Received in Laboratory by: _____	Company: _____	Date/Time: _____

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TestAmerica Cooler Receipt Form/Narrative

Lot Number: A9K200568

North Canton Facility

Client Merit Labs Project 42578 By: Chris Laignel
 Cooler Received on 11-20-09 Opened on 11-20-09 (Signature)

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

1. Were custody seals on the outside of the cooler(s)? Yes No Intact? Yes No NA
 If YES, Quantity _____ Quantity Unsalvageable _____
 Were custody seals on the outside of cooler(s) signed and dated? Yes No NA
 Were custody seals on the bottle(s)? Yes No
 If YES, are there any exceptions? _____
 2. Shippers' packing slip attached to the cooler(s)? Yes No
 3. Did custody papers accompany the sample(s)? Yes No Relinquished by client? Yes No
 4. Were the custody papers signed in the appropriate place? Yes No
 5. Packing material used: Bubble Wrap Foam None Other _____
 6. Cooler temperature upon receipt 3.2 °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

14. CHAIN OF CUSTODY

The following discrepancies occurred:

15. SAMPLE CONDITION

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

16. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in Sample Receiving to meet recommended pH level(s). Nitric Acid Lot# 031909-HNO₃; Sulfuric Acid Lot# 082509-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
01	2.2	11/20/09	CLZ
02	2.2	11/20/09	CLZ

END OF REPORT



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

45936

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME <i>Cliff Yantz</i>		CONTACT NAME <i>Cliff Yantz</i>	
COMPANY <i>O'Brien & Gere</i>		COMPANY <i>O'Brien & Gere</i>	
ADDRESS <i>37000 Grand River</i>		ADDRESS <i>37000 Grand River</i>	
CITY <i>Farmington Hills</i>	STATE <i>Mi</i>	ZIP CODE <i>48335</i>	STATE <i>Mi</i>
PHONE NO. <i>248-477-5701</i>	FAX NO.	PHONE NO.	FAX NO.
E-MAIL ADDRESS	QLOTE NO.	E-MAIL ADDRESS	QLOTE NO.

ANALYSIS (ATTACH LIST IF MORE SPACE REQUIRED)

PROJECT NO./NAME <i>Coldwater Rd Landfill Semi Annual Sampling</i>	SAMPLER(S) - PLEASE PRINT/SIGN NAME <i>Kevin Schneider</i>	SPECIAL INSTRUCTIONS/NOTES <i>metals are! Cu, Cr, Ni, Zn</i>
TURNAROUND TIME REQUIRED <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> OTHER	DELIVERABLES REQUIRED <input checked="" type="checkbox"/> STANDARD <input type="checkbox"/> LEVEL II <input type="checkbox"/> LEVEL III <input type="checkbox"/> OTHER	

MERIT LAB NO.	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCL	HNO3	H2SO4	NaOH	MeOH	OTHER	TOC	TOX	Specific Conductivity	Dissolved Metals	TSS
	DATE	TIME															
<i>42578.01</i>	<i>11/16/09</i>	<i>1255</i>	<i>B-9-111609</i>	<i>GW</i>	<i>5</i>	<i>1</i>		<i>3</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>.02</i>	<i>11/16/09</i>	<i>1610</i>	<i>B-2D-111609</i>	<i>GW</i>	<i>5</i>	<i>1</i>		<i>3</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>.03</i>	<i>11/17/09</i>	<i>905</i>	<i>SUMP A-111709</i>	<i>WSW</i>	<i>4</i>	<i>1</i>		<i>2</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>.04</i>	<i>11/17/09</i>	<i>950</i>	<i>Vault A-111709</i>	<i>WW</i>	<i>4</i>	<i>1</i>		<i>2</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
			<i>Vault B-111709</i>														
<i>.05</i>	<i>11/17/09</i>	<i>1020</i>	<i>SUMP B-111709</i>	<i>WSW</i>	<i>4</i>	<i>1</i>		<i>2</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>.06</i>	<i>11/17/09</i>	<i>1040</i>	<i>Vault B-111709</i>	<i>WW</i>	<i>4</i>	<i>1</i>		<i>2</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>.07</i>	<i>11/17/09</i>	<i>1100</i>	<i>SUMP C-111709</i>	<i>WSW</i>	<i>4</i>	<i>1</i>		<i>2</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>.08</i>	<i>11/17/09</i>	<i>1120</i>	<i>Vault C-111709</i>	<i>WW</i>	<i>4</i>	<i>1</i>		<i>2</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>.09</i>	<i>11/17/09</i>	<i>—</i>	<i>DUP-01-111709</i>	<i>WSW</i>	<i>4</i>	<i>1</i>		<i>2</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>.10</i>	<i>11/17/09</i>	<i>—</i>	<i>DUP-02-111709</i>	<i>WW</i>	<i>4</i>	<i>1</i>		<i>2</i>					<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	

KBS

RELINQUISHED BY: SIGNATURE/ORGANIZATION <i>Kevin Schneider</i> <i>OBG</i>	DATE <i>11/17/09</i>	TIME <i>1210</i>	RELINQUISHED BY: SIGNATURE/ORGANIZATION <i>Cliff Yantz</i>	DATE <i>11-17-09</i>	TIME <i>1210</i>	DATE <i>11-17-09</i>	TIME <i>1335</i>			
RECEIVED BY: SIGNATURE/ORGANIZATION <i>Cliff Yantz</i>	DATE <i>11-17-09</i>	TIME <i>1210</i>	RECEIVED BY: SIGNATURE/ORGANIZATION <i>Kevin Schneider</i>	DATE <i>11-17-09</i>	TIME <i>1335</i>	SEAL NO.	SEAL INTACT YES/1 NO	INITIALS	NOTES	TEMP. ON ARRIVAL <i>48</i>
RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	RELINQUISHED BY: SIGNATURE/ORGANIZATION	DATE	TIME	SEAL NO.	SEAL INTACT YES/L NO	INITIALS	NOTES	TEMP. ON ARRIVAL

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



Analytical Laboratory Report

Report ID: S42591.01(01)
Generated on 12/08/2009

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): S42591.01-S42591.08
Project: Coldwater Road Landfill Semi-Annual Sampling
Collected Date: 11/17/2009 - 11/18/2009
Submitted Date/Time: 11/18/2009 13:35
Sampled by: Kevin Schneider
P.O. #:

Report Notes

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

Violetta F. Murshak
Laboratory Director



Analytical Laboratory Report

Sample Summary (8 samples)

Sample ID	Sample Tag	Matrix	Collected Date/Time
S42591.01	Sump D-111709	Sump Water	11/17/2009 13:45
S42591.02	Vault D-111709	Wastewater	11/17/2009 14:00
S42591.03	Sump E-111709	Sump Water	11/17/2009 14:25
S42591.04	Vault E-111709	Wastewater	11/17/2009 14:40
S42591.05	Sump F-111709	Sump Water	11/17/2009 15:00
S42591.06	Vault F-111709	Wastewater	11/17/2009 15:20
S42591.07	B-7-111709	Groundwater	11/17/2009 16:35
S42591.08	B-28-111809	Groundwater	11/18/2009 09:55



Analytical Laboratory Report

Lab Sample ID: S42591.01
 Sample Tag: Sump D-111709
 Collected Date/Time: 11/17/2009 13:45
 Matrix: Sump Water
 COC Reference: 53647

Sample Containers

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

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	4,870	umhos/cm		120.1	11/20/09 14:32	JKB		
TOC	130	mg/L	4	EPA 415	11/24/09 12:00	TestA		O
Total Suspended Solids	10	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	0.037	mg/L	0.005	200.8	11/23/09 14:48	SLS	7440-47-3	
Copper, Dissolved	2.24	mg/L	0.004	200.8	11/23/09 14:48	SLS	7440-50-8	
Nickel, Dissolved	1.18	mg/L	0.005	200.8	11/23/09 14:48	SLS	7440-02-0	
Zinc, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 14:48	SLS	7440-66-6	

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



Analytical Laboratory Report

Lab Sample ID: S42591.02
 Sample Tag: Vault D-111709
 Collected Date/Time: 11/17/2009 14:00
 Matrix: Wastewater
 COC Reference: 53647

Sample Containers

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

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	1,610	umhos/cm		120.1	11/20/09 14:34	JKB		
TOC	6	mg/L	1	EPA 415	11/24/09 12:00	TestA		O
Total Suspended Solids	7	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 14:51	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/23/09 14:51	SLS	7440-50-8	
Nickel, Dissolved	0.016	mg/L	0.005	200.8	11/23/09 14:51	SLS	7440-02-0	
Zinc, Dissolved	0.007	mg/L	0.005	200.8	11/23/09 14:51	SLS	7440-66-6	

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



Analytical Laboratory Report

Lab Sample ID: S42591.03
 Sample Tag: Sump E-111709
 Collected Date/Time: 11/17/2009 14:25
 Matrix: Sump Water
 COC Reference: 53647

Sample Containers

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

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	1,520	umhos/cm		120.1	11/20/09 14:36	JKB		
TOC	5	mg/L	1	EPA 415	11/24/09 12:00	TestA		O
Total Suspended Solids	1	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 14:54	SLS	7440-47-3	
Copper, Dissolved	0.004	mg/L	0.004	200.8	11/23/09 14:54	SLS	7440-50-8	
Nickel, Dissolved	0.020	mg/L	0.005	200.8	11/23/09 14:54	SLS	7440-02-0	
Zinc, Dissolved	0.024	mg/L	0.005	200.8	11/23/09 14:54	SLS	7440-66-6	

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



Analytical Laboratory Report

Lab Sample ID: S42591.04
 Sample Tag: Vault E-111709
 Collected Date/Time: 11/17/2009 14:40
 Matrix: Wastewater
 COC Reference: 53647

Sample Containers

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

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	1,780	umhos/cm		120.1	11/20/09 14:38	JKB		
TOC	5	mg/L	1	EPA 415	11/24/09 12:00	TestA		O
Total Suspended Solids	9	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 14:57	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/23/09 14:57	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 14:57	SLS	7440-02-0	
Zinc, Dissolved	0.014	mg/L	0.005	200.8	11/23/09 14:57	SLS	7440-66-6	

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



Analytical Laboratory Report

Lab Sample ID: S42591.05
 Sample Tag: Sump F-111709
 Collected Date/Time: 11/17/2009 15:00
 Matrix: Sump Water
 COC Reference: 53647

Sample Containers

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

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	1,570	umhos/cm		120.1	11/20/09 14:40	JKB		
TOC	10	mg/L	1	EPA 415	11/24/09 12:00	TestA		O
Total Suspended Solids	0	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	0.025	mg/L	0.005	200.8	11/23/09 15:00	SLS	7440-47-3	
Copper, Dissolved	0.046	mg/L	0.004	200.8	11/23/09 15:00	SLS	7440-50-8	
Nickel, Dissolved	0.019	mg/L	0.005	200.8	11/23/09 15:00	SLS	7440-02-0	
Zinc, Dissolved	0.023	mg/L	0.005	200.8	11/23/09 15:00	SLS	7440-66-6	

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



Analytical Laboratory Report

Lab Sample ID: S42591.06
 Sample Tag: Vault F-111709
 Collected Date/Time: 11/17/2009 15:20
 Matrix: Wastewater
 COC Reference: 53647

Sample Containers

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

Analysis	Results	Units	RL	Method	Run Date/Time	Analyst	CAS #	Flags
Extraction / Prep.								
Metal Digestion	Completed			3015A	11/23/09 12:00	SLS		
Inorganics								
Conductivity	1,550	umhos/cm		120.1	11/20/09 14:42	JKB		
TOC	3	mg/L	1	EPA 415	11/24/09 12:00	TestA		O
Total Suspended Solids	16	mg/L	1	2540 D	11/23/09 12:15	WAR		
Metals								
Chromium, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 15:03	SLS	7440-47-3	
Copper, Dissolved	Not detected	mg/L	0.004	200.8	11/23/09 15:03	SLS	7440-50-8	
Nickel, Dissolved	Not detected	mg/L	0.005	200.8	11/23/09 15:03	SLS	7440-02-0	
Zinc, Dissolved	0.011	mg/L	0.005	200.8	11/23/09 15:03	SLS	7440-66-6	

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

ANALYTICAL REPORT

PROJECT NO. 42591

42591

Lot #: A9K200560

Paula Shaw

Merit Laboratories
2680 E Lansing Drive
Lansing, MI 48823

TESTAMERICA LABORATORIES, INC.



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

Approved for release.
Denise D. Heckler
Project Manager
12/7/2009 2:46 PM

December 7, 2009

TestAmerica Laboratories, Inc.

TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720

Tel (330)497-9396 Fax (330)497-0772 www.testamericainc.com



CASE NARRATIVE

A9K200560

The following report contains the analytical results for eight water samples submitted to TestAmerica North Canton by Merit Laboratories from the 42591 Site, project number 42591. The samples were received November 20, 2009, according to documented sample acceptance procedures.

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

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

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

All parameters were evaluated to the method detection limit and include qualified results where applicable.

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

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

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

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 3.2°C.

CASE NARRATIVE (continued)

GENERAL CHEMISTRY

The sample(s) that contain results between the MDL and the RL were flagged with "B". There is the possibility of false positive or mis-identification at these quantitation levels. The acceptance criteria for the ICB, CCB, and Method Blank are +/- the standard reporting limit (SRL).

QUALITY CONTROL ELEMENTS NARRATIVE

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

QC BATCH

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

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

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

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

LABORATORY CONTROL SAMPLE

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

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

METHOD BLANK

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

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

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

QUALITY CONTROL ELEMENTS NARRATIVE (continued)

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

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

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

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

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

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

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

SURROGATE COMPOUNDS

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

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

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

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

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



TestAmerica Certifications and Approvals:

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

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

EXECUTIVE SUMMARY - Detection Highlights

A9K200560

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>ANALYTICAL METHOD</u>
42591.01 11/17/09 13:45 001				
Total Organic Carbon	130	4	mg/L	MCAWW 415.1
42591.02 11/17/09 14:00 002				
Total Organic Carbon	6	1	mg/L	MCAWW 415.1
42591.03 11/17/09 14:25 003				
Total Organic Carbon	5	1	mg/L	MCAWW 415.1
42591.04 11/17/09 14:40 004				
Total Organic Carbon	5	1	mg/L	MCAWW 415.1
42591.05 11/17/09 15:00 005				
Total Organic Carbon	10	1	mg/L	MCAWW 415.1
42591.06 11/17/09 15:20 006				
Total Organic Carbon	3	1	mg/L	MCAWW 415.1
42591.07 11/17/09 16:35 007				
Total Organic Carbon	8	1	mg/L	MCAWW 415.1
Total Organic Halogens	25.3 B	30.0	ug/L	SW846 9020B
42591.08 11/18/09 09:55 008				
Total Organic Carbon	2	1	mg/L	MCAWW 415.1

ANALYTICAL METHODS SUMMARY

A9K200560

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>
Total Organic Carbon	MCAWW 415.1
Total Organic Halogens	SW846 9020B

References:

- MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.
- SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A9K200560

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
LPV9F	001	42591.01	11/17/09	13:45
LPV9T	002	42591.02	11/17/09	14:00
LPV9W	003	42591.03	11/17/09	14:25
LPV90	004	42591.04	11/17/09	14:40
LPV99	005	42591.05	11/17/09	15:00
LPWAC	006	42591.06	11/17/09	15:20
LPWAF	007	42591.07	11/17/09	16:35
LPWAM	008	42591.08	11/18/09	09:55

NOTE(S) :

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

Merit Laboratories

Client Sample ID: 42591.01

General Chemistry

Lot-Sample #...: A9K200560-001 Work Order #...: LPV9F Matrix.....: WG

Date Sampled...: 11/17/09 13:45 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	130	4	mg/L	MCAWW 415.1	11/24/09	9328321

Dilution Factor: 4

MDL.....: 1

Merit Laboratories

Client Sample ID: 42591.02

General Chemistry

Lot-Sample #...: A9K200560-002 Work Order #...: LPV9T Matrix.....: WG

Date Sampled...: 11/17/09 14:00 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	6	1	mg/L	MCAWW 415.1	11/24/09	9328321

Dilution Factor: 1

MDL.....: 0.2

Merit Laboratories

Client Sample ID: 42591.03

General Chemistry

Lot-Sample #...: A9K200560-003 Work Order #...: LPV9W Matrix.....: WG

Date Sampled...: 11/17/09 14:25 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	5	1	mg/L	MCAWW 415.1	11/24/09	9328321

Dilution Factor: 1

MDL.....: 0.2

Merit Laboratories

Client Sample ID: 42591.04

General Chemistry

Lot-Sample #...: A9K200560-004 Work Order #...: LPV90 Matrix.....: WG

Date Sampled...: 11/17/09 14:40 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	5	1	mg/L	MCAWW 415.1	11/24/09	9328321

Dilution Factor: 1

MDL.....: 0.2

Merit Laboratories

Client Sample ID: 42591.05

General Chemistry

Lot-Sample #...: A9K200560-005 Work Order #...: LPV99 Matrix.....: WG
Date Sampled...: 11/17/09 15:00 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	10	1	mg/L	MCAWW 415.1	11/24/09	9328321

Dilution Factor: 1

MDL.....: 0.2

Merit Laboratories

Client Sample ID: 42591.06

General Chemistry

Lot-Sample #...: A9K200560-006 Work Order #...: LPWAC Matrix.....: WG
Date Sampled...: 11/17/09 15:20 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	3	1	mg/L	MCAWW 415.1	11/24/09	9328321

Dilution Factor: 1

MDL.....: 0.2

Merit Laboratories

Client Sample ID: 42591.07

General Chemistry

Lot-Sample #...: A9K200560-007 Work Order #...: LPWAF Matrix.....: WG
Date Sampled...: 11/17/09 16:35 Date Received...: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	8	1	mg/L	MCAWW 415.1	11/24/09	9328321
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	25.3 B	30.0	ug/L	SW846 9020B	11/24/09	9328327
			Dilution Factor: 1	MDL.....: 19.0		

NOTE(S):

-
- RL Reporting Limit
 - B Estimated result. Result is less than RL.

Merit Laboratories

Client Sample ID: 42591.08

General Chemistry

Lot-Sample #...: A9K200560-008 Work Order #...: LPWAM Matrix.....: WG
Date Sampled...: 11/18/09 09:55 Date Received..: 11/20/09

<u>PARAMETER</u>	<u>RESULT</u>	<u>RL</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	2	1	mg/L	MCAWW 415.1	11/24/09	9328321
			Dilution Factor: 1	MDL.....: 0.2		
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/24/09	9328327
			Dilution Factor: 1	MDL.....: 19.0		

QUALITY CONTROL SECTION

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A9K200560

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION-</u> <u>ANALYSIS DATE</u>	<u>PREP</u> <u>BATCH #</u>
Total Organic Carbon	ND	1	mg/L	MCAWW 415.1	11/24/09	9328321
		Work Order #: LP4N71AA MB Lot-Sample #: A9K240000-321				
		Dilution Factor: 1				
Total Organic Halogens	ND	30.0	ug/L	SW846 9020B	11/24/09	9328327
		Work Order #: LP7FF1AA MB Lot-Sample #: A9K240000-327				
		Dilution Factor: 1				

NOTE(S):

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

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A9K200560

Matrix.....: WATER

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Carbon	101	(88 - 115)	MCAWW 415.1 Dilution Factor: 1	11/24/09	9328321
Total Organic Halogens	98	(67 - 115)	SW846 9020B Dilution Factor: 1	11/24/09	9328327

NOTE(S):

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

MATRIX SPIKE SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A9K200560

Matrix.....: WATER

Date Sampled...: 11/17/09 13:15 Date Received...: 11/19/09

<u>PARAMETER</u>	<u>PERCENT RECOVERY</u>	<u>RECOVERY LIMITS</u>	<u>RPD</u>	<u>RPD LIMITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>PREP BATCH #</u>
Total Organic Halogens			WO#: LPQ0H1AD-MS/LPQ0H1AE-MSD			MS Lot-Sample #: A9K190488-001	
	83	(59 - 126)			SW846 9020B	11/24/09	9328327
	94	(59 - 126)	13	(0-99)	SW846 9020B	11/24/09	9328327
			Dilution Factor: 1				
Total Organic Carbon			WO#: LPVDT1AX-MS/LPVDT1A0-MSD			MS Lot-Sample #: A9K200460-004	
	103	(72 - 136)			MCAWW 415.1	11/24/09	9328321
	103	(72 - 136)	0.07	(0-20)	MCAWW 415.1	11/24/09	9328321
			Dilution Factor: 1				

NOTE(S):

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

Chain of Custody Record

TestAmerica Laboratory location: _____ Regulatory program: DW NPDES RCRA Other _____

TestAmerica Laboratories, Inc.
COC No: _____ of _____ COCs

Company Name: Merit Labs		Client Project Manager: Paula Shaw		Site Contact: _____		Lab Contact: _____											
Address: 2680 East Lansing Dr.		Telephone: _____		Telephone: _____		Telephone: _____											
City/State/Zip: East Lansing, MI 48823		Email: _____		TAT if different from below: 3da.		Analyses											
Phone: 517-332-0167		Method of Shipment/Carrier: VPS		<input type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day													
Project Name: 42591		Shipping/Tracking No: _____															
Project Number: 42591																	
PO # 42591																	
Sample Identification		Sample Date	Sample Time	Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	TOC	TOX
42591.01		11-17	13:45	<input checked="" type="checkbox"/>												X	
			14:00	<input checked="" type="checkbox"/>												X	
			14:25	<input checked="" type="checkbox"/>												X	
			14:40	<input checked="" type="checkbox"/>												X	
			15:00	<input checked="" type="checkbox"/>												X	
			15:20	<input checked="" type="checkbox"/>												X	
			16:35	<input checked="" type="checkbox"/>												X	
			07:55	<input checked="" type="checkbox"/>												X	
		11-18															

Special Instructions/QC Requirements & Comments: _____

Possible Hazard Identification: Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): Return to Client Disposal By Lab Archive for _____ Months

Relinquished by: **Paula Shaw** Company: **Merit** Date/Time: **11-19-09/1600** Received by: **VPS** Date/Time: _____

Relinquished by: _____ Company: _____ Date/Time: _____ Received by: **Dr. David** Date/Time: _____

Relinquished by: _____ Company: _____ Date/Time: _____ Received by: **TAR** Date/Time: **11/20/09 10:00**

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Lot Number: A9K 200560

TestAmerica Cooler Receipt Form/Narrative

North Canton Facility

Client Merit Labs Project 42591 By: Chie Lujal
(Signature)

Cooler Received on 11-20-09 Opened on 11-20-09

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? _____ Yes No

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

3. Did custody papers accompany the sample(s)? 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# 031909-HNO₃; Sulfuric Acid Lot# 082509-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
07	Ca	11-20-09	CSL
08	Ca	+	+

END OF REPORT



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

53647

REPORT TO

CHAIN OF CUSTODY RECORD

INVOICE TO

CONTACT NAME: Cliff Yantz
 COMPANY: O'Brien & Gere
 ADDRESS: 37000 Grand River
 CITY: Farmington Hills STATE: MI ZIP CODE: 48335
 PHONE NO.: 248-477-5701 FAX NO.: _____ P.O. NO.: _____
 E-MAIL ADDRESS: _____ QUOTE NO.: _____

CONTACT NAME: _____ SAME
 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 semi Annual sampling SAMPLER(S) - PLEASE PRINT/SIGN NAME: Karen Schneider
 TURNAROUND TIME REQUIRED: 24 HR 48 HR 72 HR STANDARD OTHER
 DELIVERABLES REQUIRED: STANDARD LEVEL II LEVEL III OTHER
 MATRIX CODE: GW-GROUNDWATER WW-WASTEWATER S-SOIL L-LIQUID SD-SOLID
 SL-SLUDGE O-OIL A-AIR W-WASTE M-MISC

TOC	Specific Conductivity	Dissolved Metals	TSS	TOX	SPECIAL INSTRUCTIONS/NOTES <u>Metals Are</u> <u>Cu, Cr, Ni, Zn</u>
-----	-----------------------	------------------	-----	-----	--

MERIT LAB NO.	YEAR		SAMPLE TAG IDENTIFICATION-DESCRIPTION	MATRIX	# OF BOTTLES	NONE	HCL	HNO3	H2SO4	NHOH	MCOH	OTHER	TOC	Specific Conductivity	Dissolved Metals	TSS	TOX
	DATE	TIME															
42591.01	11/17/09	1345	SUMP D - 111709	WW	4	1	1	2					X	X	X	X	
.02		1400	Vault D - 111709	WW	4	1	1	2					X	X	X	X	
.03		1425	SUMP E - 111709	WW	4	1	1	2					X	X	X	X	
.04		1440	Vault E - 111709	WW	4	1	1	2					X	X	X	X	
.05		1500	SUMP F - 111709	WW	4	1	1	2					X	X	X	X	
.06		1520	Vault F - 111709	WW	4	1	1	2					X	X	X	X	
.07	11/18/09	1635	B-7-111709	GW	5	1	1	3					X	X	X		X
.08	11/18/09	955	B-28-111809	GW	5	1	1	3					X	X	X		X

RELINQUISHED BY: [Signature] 086 DATE: 11/18/09 TIME: 10:35
 RECEIVED BY: [Signature] DATE: 11/18/09 TIME: 10:25

RELINQUISHED BY: [Signature] DATE: 11/18/09 TIME: 13:25
 RECEIVED BY: [Signature] DATE: 11-18-09 TIME: 13:35
 SEAL NO.: _____ SEAL INTACT YES NO INITIALS: _____ NOTES: _____ TEMP. ON ARRIVAL: 42

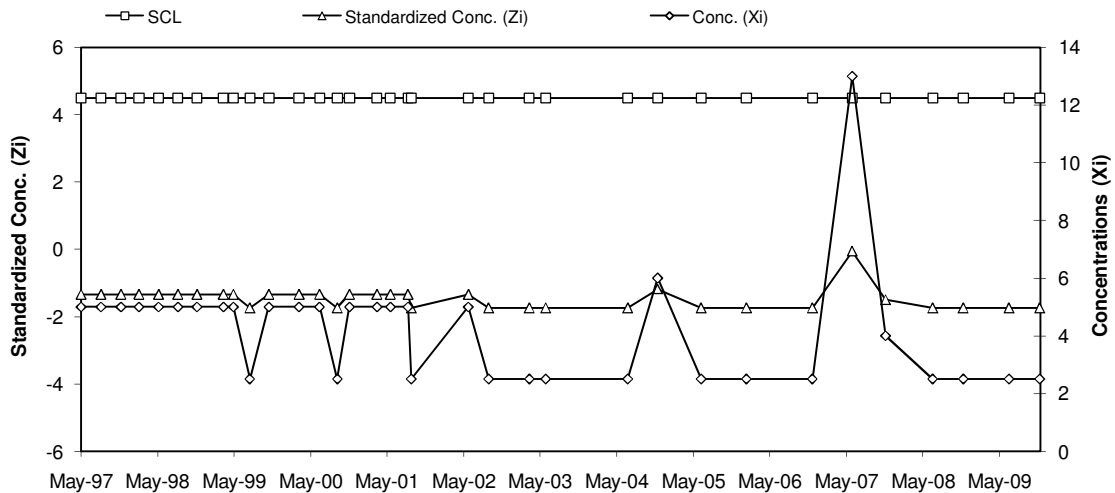
PLEASE NOTE: SIGNING ACKNOWLEDGES ACCEPTANCE OF TERMS & CONDITIONS ON REVERSE SIDE

**Leak Detection Vault
Control Charts**

REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault A - Chromium

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	10	13.38	6.25
2	Jun-95	24		
3	Aug-95	10		
4	Nov-95	23		
5	Mar-96	10		
6	Jun-96	10		
7	Aug-96	10		
8	Nov-96	10		

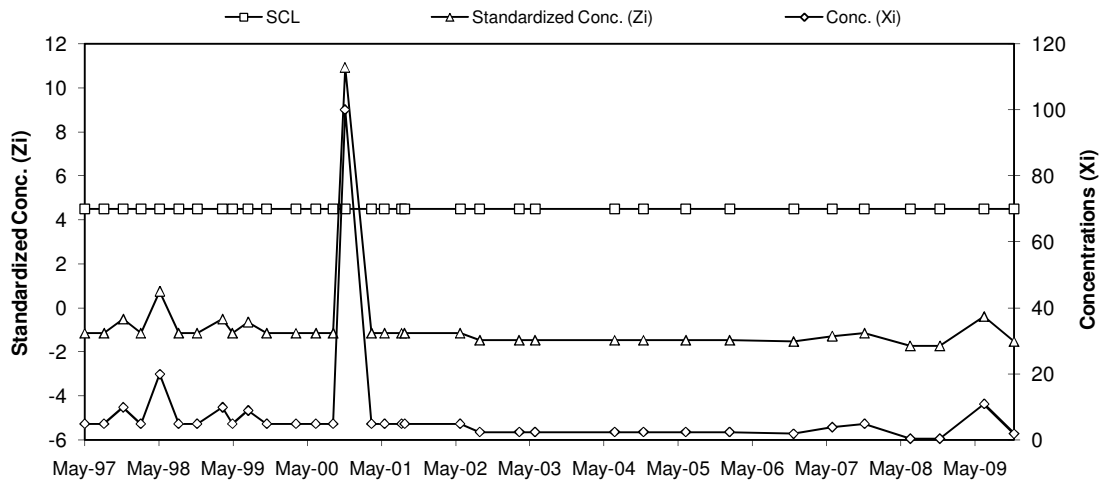
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-97	4.5	5	-1.34
10	Aug-97	4.5	5	-1.34
11	Nov-97	4.5	5	-1.34
12	Feb-98	4.5	5	-1.34
13	May-98	4.5	5	-1.34
14	Aug-98	4.5	5	-1.34
15	Nov-98	4.5	5	-1.34
16	Mar-99	4.5	5	-1.34
17	May-99	4.5	5	-1.34
18	Jul-99	4.5	2.5	-1.74
19	Oct-99	4.5	5	-1.34
20	Mar-00	4.5	5	-1.34
21	Jun-00	4.5	5	-1.34
22	Sep-00	4.5	2.5	-1.74
23	Nov-00	4.5	5	-1.34
24	Mar-01	4.5	5	-1.34
25	May-01	4.5	5	-1.34
26	Aug-01	4.5	2.5	-1.74
27	Aug-01	4.5	5	-1.34
28	May-02	4.5	5	-1.34
29	Sep-02	4.5	2.5	-1.74
30	Mar-03	4.5	2.5	-1.74
31	Jun-03	4.5	2.5	-1.74
32	Jun-04	4.5	2.5	-1.74
33	Nov-04	4.5	6	-1.18
34	Jun-05	4.5	2.5	-1.74
35	Jan-06	4.5	2.5	-1.74
36	Nov-06	4.5	2.5	-1.74
37	Jun-07	4.5	13	-0.06
38	Nov-07	4.5	4	-1.50
39	Jun-08	4.5	2.5	-1.74
40	Nov-08	4.5	2.5	-1.74
41	Jun-09	4.5	2.5	-1.74
42	Nov-09	4.5	2.5	-1.74



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault A - Copper

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	10	14	7.87
2	Jun-95	21		
3	Aug-95	10		
4	Nov-95	31		
5	Mar-96	10		
6	Jun-96	10		
7	Aug-96	10		
8	Nov-96	10		

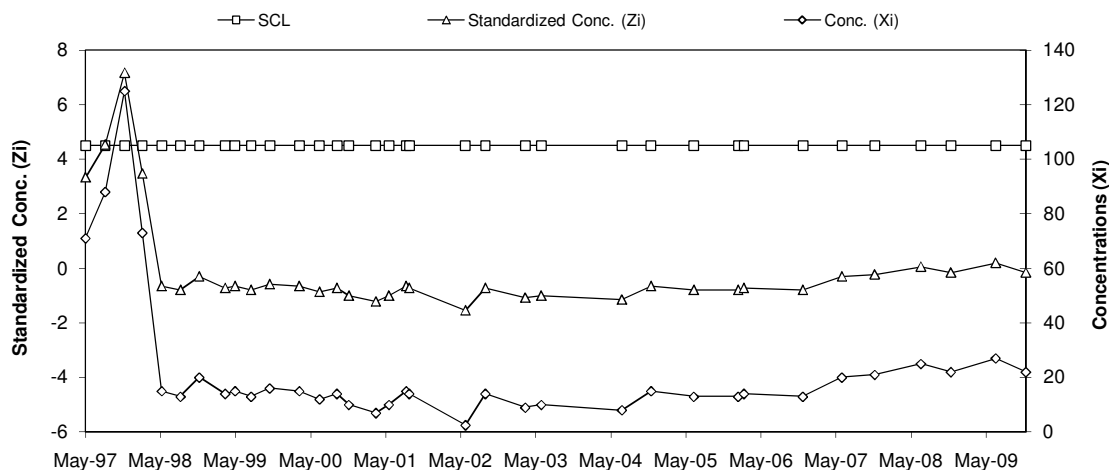
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-97	4.5	5	-1.14
10	Aug-97	4.5	5	-1.14
11	Nov-97	4.5	10	-0.51
12	Feb-98	4.5	5	-1.14
13	May-98	4.5	20	0.76
14	Aug-98	4.5	5	-1.14
15	Nov-98	4.5	5	-1.14
16	Mar-99	4.5	10	-0.51
17	May-99	4.5	5	-1.14
18	Jul-99	4.5	9	-0.64
19	Oct-99	4.5	5	-1.14
20	Mar-00	4.5	5	-1.14
21	Jun-00	4.5	5	-1.14
22	Sep-00	4.5	5	-1.14
23	Nov-00	4.5	100	10.92
24	Mar-01	4.5	5	-1.14
25	May-01	4.5	5	-1.14
26	Aug-01	4.5	5	-1.14
27	Aug-01	4.5	5	-1.14
28	May-02	4.5	5	-1.14
29	Sep-02	4.5	2.5	-1.46
30	Mar-03	4.5	2.5	-1.46
31	Jun-03	4.5	2.5	-1.46
32	Jun-04	4.5	2.5	-1.46
33	Nov-04	4.5	2.5	-1.46
34	Jun-05	4.5	2.5	-1.46
35	Jan-06	4.5	2.5	-1.46
36	Nov-06	4.5	2	-1.52
37	Jun-07	4.5	4	-1.27
38	Nov-07	4.5	5	-1.14
39	Jun-08	4.5	0.5	-1.71
40	Nov-08	4.5	0.5	-1.71
41	Jun-09	4.5	11	-0.38
42	Nov-09	4.5	2	-1.52



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault A - Nickel

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	20	24.25	14.07
2	Jun-95	15		
3	Aug-95	20		
4	Nov-95	43		
5	Mar-96	46		
6	Jun-96	10		
7	Aug-96	10		
8	Nov-96	30		

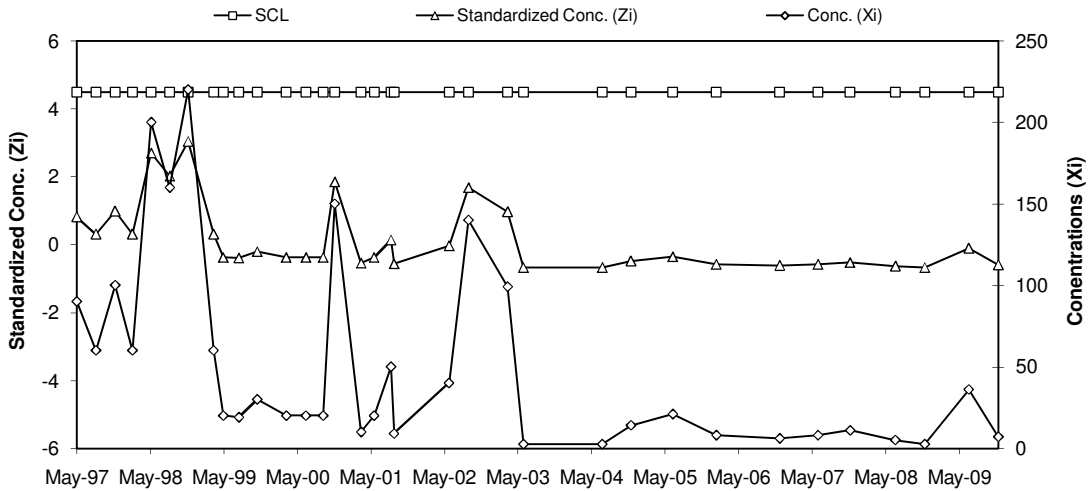
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-97	4.5	71	3.32
10	Aug-97	4.5	88	4.53
11	Nov-97	4.5	125	7.16
12	Feb-98	4.5	73	3.47
13	May-98	4.5	15	-0.66
14	Aug-98	4.5	13	-0.80
15	Nov-98	4.5	20	-0.30
16	Mar-99	4.5	14	-0.73
17	May-99	4.5	15	-0.66
18	Jul-99	4.5	13	-0.80
19	Oct-99	4.5	16	-0.59
20	Mar-00	4.5	15	-0.66
21	Jun-00	4.5	12	-0.87
22	Sep-00	4.5	14	-0.73
23	Nov-00	4.5	10	-1.01
24	Mar-01	4.5	7	-1.23
25	May-01	4.5	10	-1.01
26	Aug-01	4.5	14	-0.73
27	Aug-01	4.5	15	-0.66
28	May-02	4.5	2.5	-1.55
29	Sep-02	4.5	14	-0.73
30	Mar-03	4.5	9	-1.08
31	Jun-03	4.5	10	-1.01
32	Jun-04	4.5	8	-1.16
33	Nov-04	4.5	15	-0.66
34	Jun-05	4.5	13	-0.80
35	Jan-06	4.5	13	-0.80
36	Feb-06	4.5	14	-0.73
37	Nov-06	4.5	13	-0.80
38	Jun-07	4.5	20	-0.30
39	Nov-07	4.5	21	-0.23
40	Jun-08	4.5	25	0.05
41	Nov-08	4.5	22	-0.16
42	Jun-09	4.5	27	0.20
43	Nov-09	4.5	22	-0.16



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault A - Zinc

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	180	41.75	58.47
2	Jun-95	10		
3	Aug-95	10		
4	Nov-95	24		
5	Mar-96	10		
6	Jun-96	10		
7	Aug-96	30		
8	Nov-96	60		

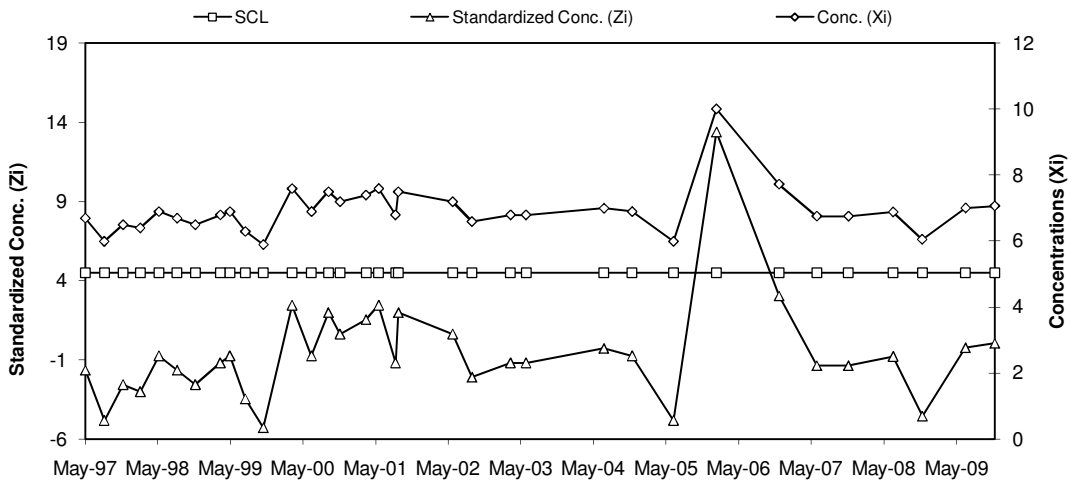
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-97	4.5	90	0.83
10	Aug-97	4.5	60	0.31
11	Nov-97	4.5	100	1.00
12	Feb-98	4.5	60	0.31
13	May-98	4.5	200	2.71
14	Aug-98	4.5	160	2.02
15	Nov-98	4.5	220	3.05
16	Mar-99	4.5	60	0.31
17	May-99	4.5	20	-0.37
18	Jul-99	4.5	19	-0.39
19	Oct-99	4.5	30	-0.20
20	Mar-00	4.5	20	-0.37
21	Jun-00	4.5	20	-0.37
22	Sep-00	4.5	20	-0.37
23	Nov-00	4.5	150	1.85
24	Mar-01	4.5	10	-0.54
25	May-01	4.5	20	-0.37
26	Aug-01	4.5	9	-0.56
27	Aug-01	4.5	50	0.14
28	May-02	4.5	40	-0.03
29	Sep-02	4.5	140	1.68
30	Mar-03	4.5	99	0.98
31	Jun-03	4.5	2.5	-0.67
32	Jun-04	4.5	2.5	-0.67
33	Nov-04	4.5	14	-0.47
34	Jun-05	4.5	21	-0.35
35	Jan-06	4.5	8	-0.58
36	Nov-06	4.5	6	-0.61
37	Jun-07	4.5	8	-0.58
38	Nov-07	4.5	11	-0.53
39	Jun-08	4.5	5	-0.63
40	Nov-08	4.5	2.5	-0.67
41	Jun-09	4.5	36	-0.10
42	Nov-09	4.5	7	-0.59



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault A - pH**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	7.5	7.06	0.22
2	Jun-95	6.8		
3	Aug-95	6.9		
4	Nov-95	7		
5	Mar-96	7.2		
6	Jun-96	6.9		
7	Aug-96	7.1		
8	Nov-96	7.1		

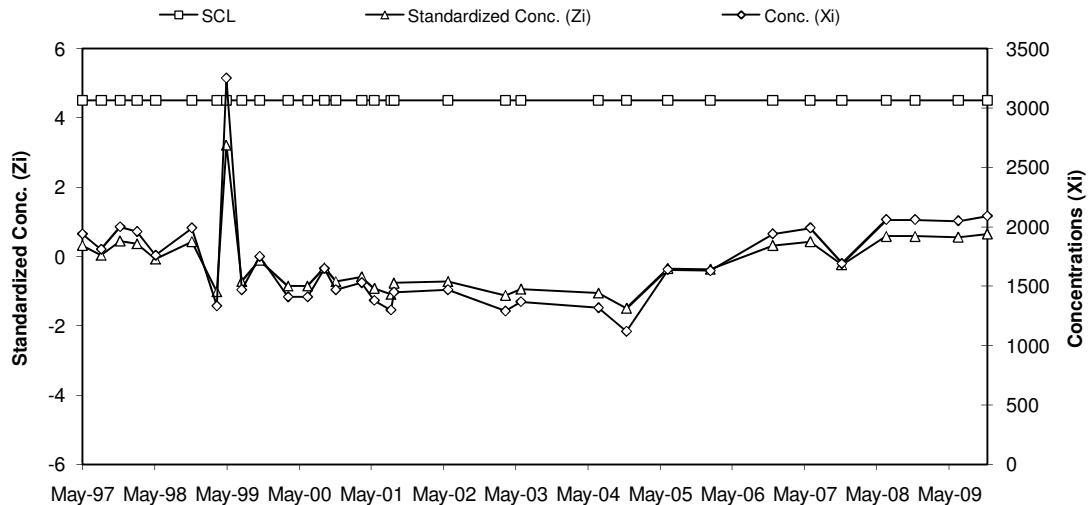
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-97	4.5	6.7	-1.65
10	Aug-97	4.5	6	-4.83
11	Nov-97	4.5	6.5	-2.56
12	Feb-98	4.5	6.4	-3.01
13	May-98	4.5	6.9	-0.74
14	Aug-98	4.5	6.7	-1.65
15	Nov-98	4.5	6.5	-2.56
16	Mar-99	4.5	6.8	-1.19
17	May-99	4.5	6.9	-0.74
18	Jul-99	4.5	6.3	-3.47
19	Oct-99	4.5	5.9	-5.28
20	Mar-00	4.5	7.6	2.44
21	Jun-00	4.5	6.9	-0.74
22	Sep-00	4.5	7.5	1.99
23	Nov-00	4.5	7.2	0.63
24	Mar-01	4.5	7.4	1.53
25	May-01	4.5	7.6	2.44
26	Aug-01	4.5	7.5	1.99
27	Aug-01	4.5	6.8	-1.19
28	May-02	4.5	7.2	0.63
29	Sep-02	4.5	6.6	-2.10
30	Mar-03	4.5	6.8	-1.19
31	Jun-03	4.5	6.8	-1.19
32	Jun-04	4.5	7	-0.28
33	Nov-04	4.5	6.9	-0.74
34	Jun-05	4.5	6	-4.83
35	Jan-06	4.5	10.0	13.40
36	Nov-06	4.5	7.7	3.03
37	Jun-07	4.5	6.8	-1.38
38	Nov-07	4.5	6.8	-1.38
39	Jun-08	4.5	6.9	-0.78
40	Nov-08	4.5	6.1	-4.56
41	Jun-09	4.5	7.0	-0.24
42	Nov-09	4.5	7.1	0.03



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault A - SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	690	1,798.75	450.73
2	Jun-95	1900		
3	Aug-95	2000		
4	Nov-95	1900		
5	Mar-96	2000		
6	Jun-96	2000		
7	Aug-96	1900		
8	Nov-96	2000		

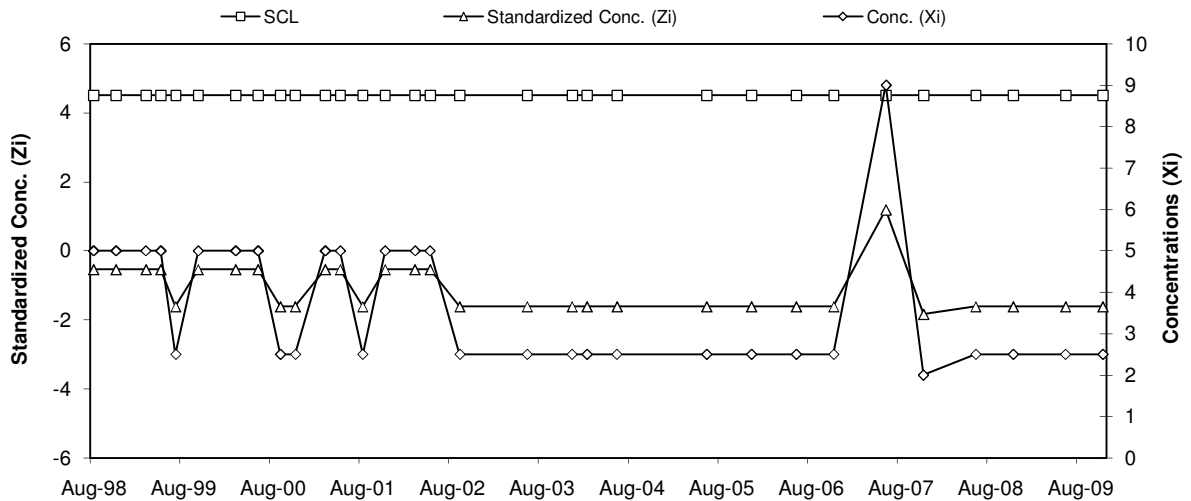
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-97	4.5	1940	0.31
10	Aug-97	4.5	1810	0.02
11	Nov-97	4.5	2000	0.45
12	Feb-98	4.5	1960	0.36
13	May-98	4.5	1760	-0.09
14	Nov-98	4.5	1990	0.42
15	Mar-99	4.5	1334	-1.03
16	May-99	4.5	3250	3.22
17	Jul-99	4.5	1470	-0.73
18	Oct-99	4.5	1750	-0.11
19	Mar-00	4.5	1410	-0.86
20	Jun-00	4.5	1410	-0.86
21	Sep-00	4.5	1650	-0.33
22	Nov-00	4.5	1470	-0.73
23	Mar-01	4.5	1530	-0.60
24	May-01	4.5	1380	-0.93
25	Aug-01	4.5	1450	-0.77
26	Aug-01	4.5	1300	-1.11
27	May-02	4.5	1470	-0.73
28	Mar-03	4.5	1290	-1.13
29	Jun-03	4.5	1370	-0.95
30	Jun-04	4.5	1318	-1.07
31	Nov-04	4.5	1120	-1.51
32	Jun-05	4.5	1640	-0.35
33	Jan-06	4.5	1630	-0.37
34	Nov-06	4.5	1940	0.31
35	Jun-07	4.5	1990	0.42
36	Nov-07	4.5	1690	-0.24
37	Jun-08	4.5	2060	0.58
38	Nov-08	4.5	2060	0.58
39	Jun-09	4.5	2050	0.56
40	Nov-09	4.5	2090	0.65



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault B - Chromium

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-96	10	6.25	2.31
2	Nov-96	10		
3	Feb-97	5		
4	May-97	5		
5	Aug-97	5		
6	Nov-97	5		
7	Feb-98	5		
8	May-98	5		

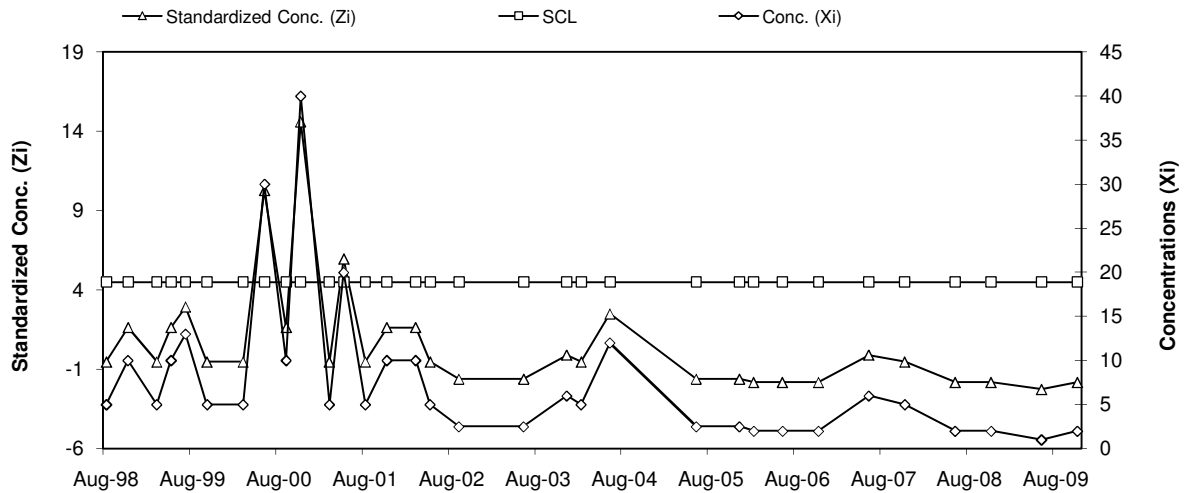
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-98	4.5	5	-0.54
10	Nov-98	4.5	5	-0.54
11	Mar-99	4.5	5	-0.54
12	May-99	4.5	5	-0.54
13	Jul-99	4.5	2.5	-1.62
14	Oct-99	4.5	5	-0.54
15	Mar-00	4.5	5	-0.54
16	Jun-00	4.5	5	-0.54
17	Sep-00	4.5	2.5	-1.62
18	Nov-00	4.5	2.5	-1.62
19	Mar-01	4.5	5	-0.54
20	May-01	4.5	5	-0.54
21	Aug-01	4.5	2.5	-1.62
22	Nov-01	4.5	5	-0.54
23	Mar-02	4.5	5	-0.54
24	May-02	4.5	5	-0.54
25	Sep-02	4.5	2.5	-1.62
26	Jun-03	4.5	2.5	-1.62
27	Dec-03	4.5	2.5	-1.62
28	Feb-04	4.5	2.5	-1.62
29	Jun-04	4.5	2.5	-1.62
30	Jun-05	4.5	2.5	-1.62
31	Dec-05	4.5	2.5	-1.62
32	Jun-06	4.5	2.5	-1.62
33	Nov-06	4.5	2.5	-1.62
34	Jun-07	4.5	9	1.19
35	Nov-07	4.5	2	-1.84
36	Jun-08	4.5	2.5	-1.62
37	Nov-08	4.5	2.5	-1.62
38	Jun-09	4.5	2.5	-1.62
39	Nov-09	4.5	2.5	-1.62



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault B - Copper

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-96	10	6.25	2.31
2	Nov-96	10		
3	Feb-97	5		
4	May-97	5		
5	Aug-97	5		
6	Nov-97	5		
7	Feb-98	5		
8	May-98	5		

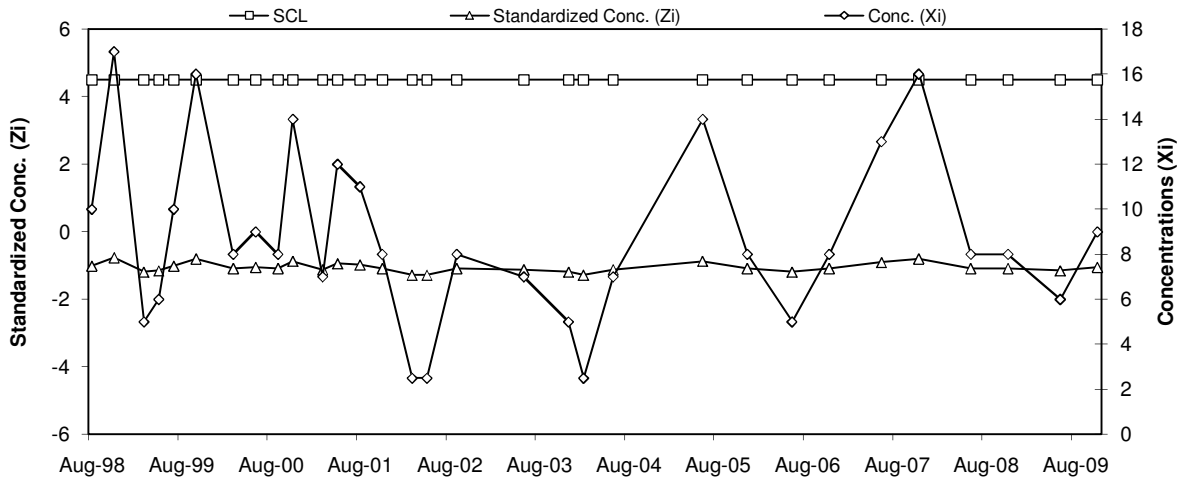
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-98	4.5	5	-0.54
10	Nov-98	4.5	10	1.62
11	Mar-99	4.5	5	-0.54
12	May-99	4.5	10	1.62
13	Jul-99	4.5	13	2.92
14	Oct-99	4.5	5	-0.54
15	Mar-00	4.5	5	-0.54
16	Jun-00	4.5	30	10.26
17	Sep-00	4.5	10	1.62
18	Nov-00	4.5	40	14.58
19	Mar-01	4.5	5	-0.54
20	May-01	4.5	20	5.94
21	Aug-01	4.5	5	-0.54
22	Nov-01	4.5	10	1.62
23	Mar-02	4.5	10	1.62
24	May-02	4.5	5	-0.54
25	Sep-02	4.5	2.5	-1.62
26	Jun-03	4.5	2.5	-1.62
27	Dec-03	4.5	6	-0.11
28	Feb-04	4.5	5	-0.54
29	Jun-04	4.5	12	2.48
30	Jun-05	4.5	2.5	-1.62
31	Dec-05	4.5	2.5	-1.62
32	Feb-06	4.5	2	-1.84
33	Jun-06	4.5	2	-1.84
34	Nov-06	4.5	2	-1.84
35	Jun-07	4.5	6	-0.11
36	Nov-07	4.5	5	-0.54
37	Jun-08	4.5	2	-1.84
38	Nov-08	4.5	2	-1.84
39	Jun-09	4.5	1	-2.27
40	Nov-09	4.5	2	-1.84



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault B - Nickel**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-96	10	38.88	28.34
2	Nov-96	20		
3	Feb-97	43		
4	May-97	45		
5	Aug-97	26		
6	Nov-97	96		
7	Feb-98	57		
8	May-98	14		

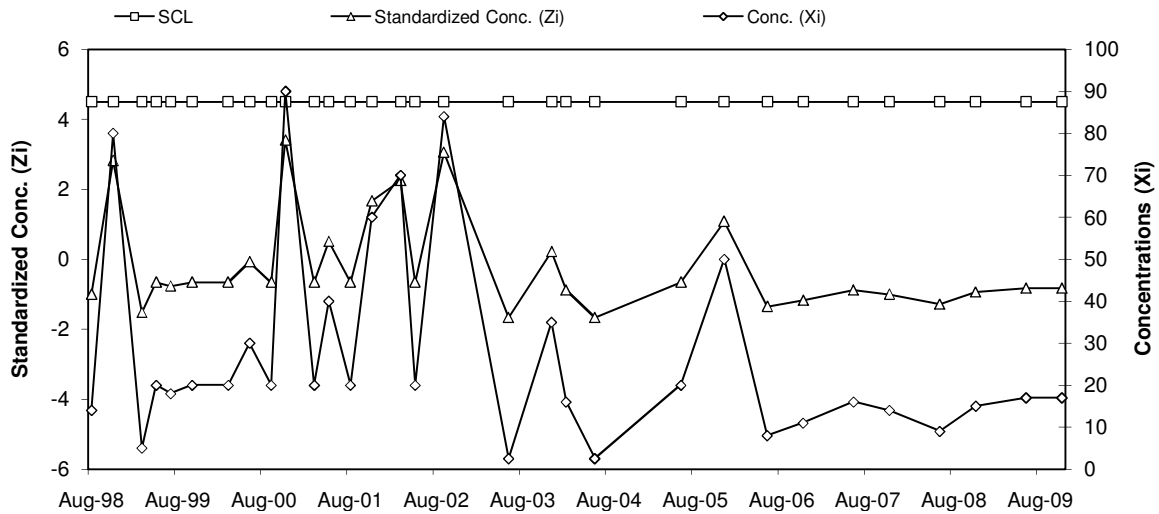
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-98	4.5	10	-1.02
10	Nov-98	4.5	17	-0.77
11	Mar-99	4.5	5	-1.20
12	May-99	4.5	6	-1.16
13	Jul-99	4.5	10	-1.02
14	Oct-99	4.5	16	-0.81
15	Mar-00	4.5	8	-1.09
16	Jun-00	4.5	9	-1.05
17	Sep-00	4.5	8	-1.09
18	Nov-00	4.5	14	-0.88
19	Mar-01	4.5	7	-1.12
20	May-01	4.5	12	-0.95
21	Aug-01	4.5	11	-0.98
22	Nov-01	4.5	8	-1.09
23	Mar-02	4.5	2.5	-1.28
24	May-02	4.5	2.5	-1.28
25	Sep-02	4.5	8	-1.09
26	Jun-03	4.5	7	-1.12
27	Dec-03	4.5	5	-1.20
28	Feb-04	4.5	2.5	-1.28
29	Jun-04	4.5	7	-1.12
30	Jun-05	4.5	14	-0.88
31	Dec-05	4.5	8	-1.09
32	Jun-06	4.5	5	-1.20
33	Nov-06	4.5	8	-1.09
34	Jun-07	4.5	13	-0.91
35	Nov-07	4.5	16	-0.81
36	Jun-08	4.5	8	-1.09
37	Nov-08	4.5	8	-1.09
38	Jun-09	4.5	6	-1.16
39	Nov-09	4.5	9	-1.05



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault B - Zinc**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-96	10	31.25	17.27
2	Nov-96	40		
3	Feb-97	20		
4	May-97	20		
5	Aug-97	60		
6	Nov-97	50		
7	Feb-98	20		
8	May-98	30		

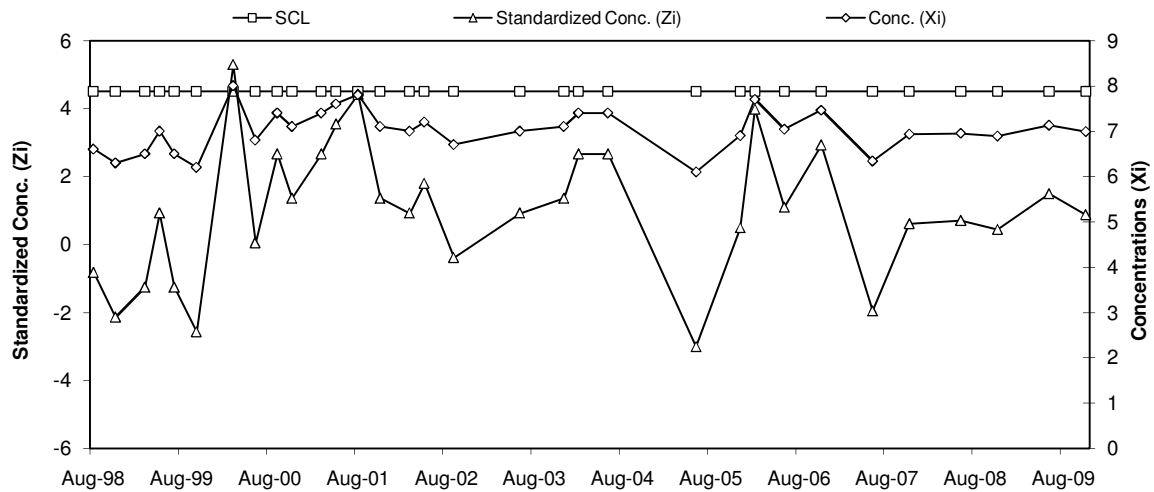
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-98	4.5	14	-1.00
10	Nov-98	4.5	80	2.82
11	Mar-99	4.5	5	-1.52
12	May-99	4.5	20	-0.65
13	Jul-99	4.5	18	-0.77
14	Oct-99	4.5	20	-0.65
15	Mar-00	4.5	20	-0.65
16	Jun-00	4.5	30	-0.07
17	Sep-00	4.5	20	-0.65
18	Nov-00	4.5	90	3.40
19	Mar-01	4.5	20	-0.65
20	May-01	4.5	40	0.51
21	Aug-01	4.5	20	-0.65
22	Nov-01	4.5	60	1.66
23	Mar-02	4.5	70	2.24
24	May-02	4.5	20	-0.65
25	Sep-02	4.5	84	3.05
26	Jun-03	4.5	2.5	-1.66
27	Dec-03	4.5	35	0.22
28	Feb-04	4.5	16	-0.88
29	Jun-04	4.5	2.5	-1.66
30	Jun-05	4.5	20	-0.65
31	Dec-05	4.5	50	1.09
32	Jun-06	4.5	8	-1.35
33	Nov-06	4.5	11	-1.17
34	Jun-07	4.5	16	-0.88
35	Nov-07	4.5	14	-1.00
36	Jun-08	4.5	9	-1.29
37	Nov-08	4.5	15	-0.94
38	Jun-09	4.5	17	-0.83
39	Nov-09	4.5	17	-0.83



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault B - pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-96	6.9	6.79	0.23
2	Nov-96	7		
3	Feb-97	7.1		
4	May-97	6.5		
5	Aug-97	6.5		
6	Nov-97	6.8		
7	Feb-98	6.6		
8	May-98	6.9		

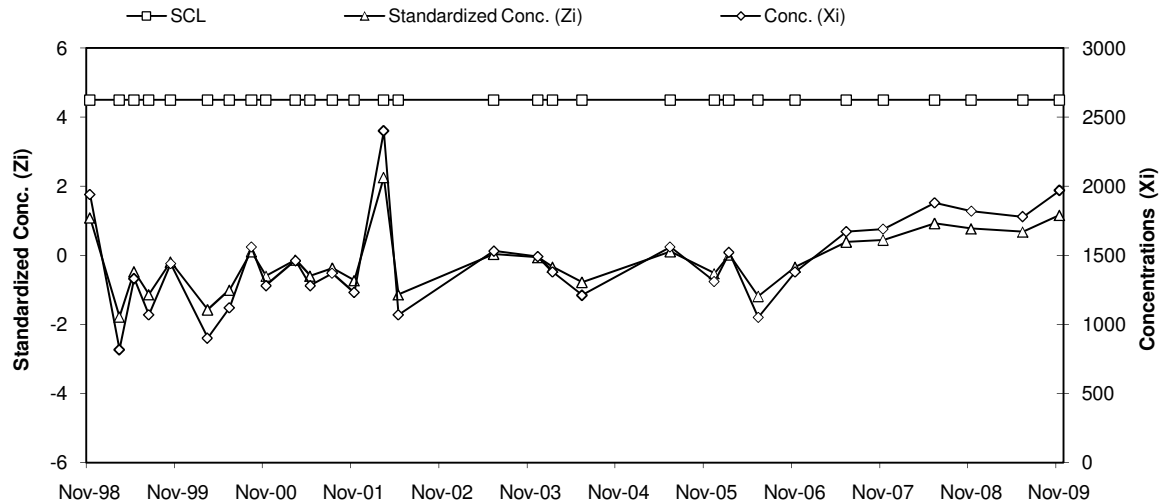
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-98	4.5	6.6	-0.82
10	Nov-98	4.5	6.3	-2.12
11	Mar-99	4.5	6.5	-1.25
12	May-99	4.5	7	0.93
13	Jul-99	4.5	6.5	-1.25
14	Oct-99	4.5	6.2	-2.56
15	Mar-00	4.5	8	5.28
16	Jun-00	4.5	6.8	0.05
17	Sep-00	4.5	7.4	2.67
18	Nov-00	4.5	7.1	1.36
19	Mar-01	4.5	7.4	2.67
20	May-01	4.5	7.6	3.54
21	Aug-01	4.5	7.8	4.41
22	Nov-01	4.5	7.1	1.36
23	Mar-02	4.5	7	0.93
24	May-02	4.5	7.2	1.80
25	Sep-02	4.5	6.7	-0.38
26	Jun-03	4.5	7	0.93
27	Dec-03	4.5	7.1	1.36
28	Feb-04	4.5	7.4	2.67
29	Jun-04	4.5	7.4	2.67
30	Jun-05	4.5	6.1	-3.00
31	Dec-05	4.5	6.9	0.49
32	Feb-06	4.5	7.7	3.98
33	Jun-06	4.5	7.0	1.10
34	Nov-06	4.5	7.5	2.93
35	Jun-07	4.5	6.3	-1.95
36	Nov-07	4.5	6.9	0.62
37	Jun-08	4.5	7.0	0.71
38	Nov-08	4.5	6.9	0.45
39	Jun-09	4.5	7.1	1.49
40	Nov-09	4.5	7.0	0.88



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault B - SpC**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-96	1900	1,516.63	391.89
2	Nov-96	1600		
3	Feb-97	1590		
4	May-97	1930		
5	Aug-97	663		
6	Nov-97	1400		
7	Feb-98	1560		
8	May-98	1490		

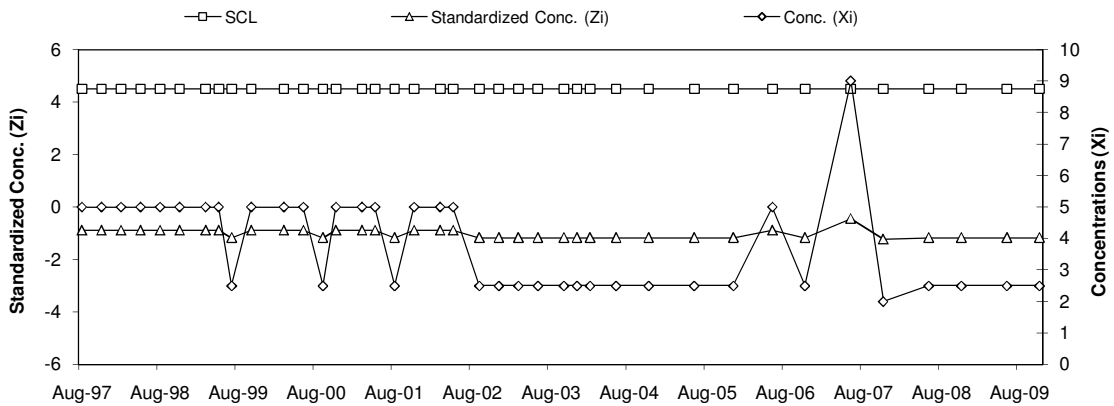
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Nov-98	4.5	1940	1.08
10	Mar-99	4.5	817	-1.79
11	May-99	4.5	1330	-0.48
12	Jul-99	4.5	1070	-1.14
13	Oct-99	4.5	1440	-0.20
14	Mar-00	4.5	900	-1.57
15	Jun-00	4.5	1120	-1.01
16	Sep-00	4.5	1560	0.11
17	Nov-00	4.5	1280	-0.60
18	Mar-01	4.5	1460	-0.14
19	May-01	4.5	1280	-0.60
20	Aug-01	4.5	1370	-0.37
21	Nov-01	4.5	1230	-0.73
22	Mar-02	4.5	2400	2.25
23	May-02	4.5	1070	-1.14
24	Jun-03	4.5	1530	0.03
25	Dec-03	4.5	1490	-0.07
26	Feb-04	4.5	1380	-0.35
27	Jun-04	4.5	1210	-0.78
28	Jun-05	4.5	1560	0.11
29	Dec-05	4.5	1310	-0.53
30	Feb-06	4.5	1520	0.01
31	Jun-06	4.5	1050	-1.19
32	Nov-06	4.5	1380	-0.35
33	Jun-07	4.5	1670	0.39
34	Nov-07	4.5	1690	0.44
35	Jun-08	4.5	1880	0.93
36	Nov-08	4.5	1818	0.77
37	Jun-09	4.5	1780	0.67
38	Nov-09	4.5	1970	1.16



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault C - Chromium

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	25	13.00	8.98
2	Aug-95	10		
3	Nov-95	29		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	Feb-97	5		
8	May-97	5		

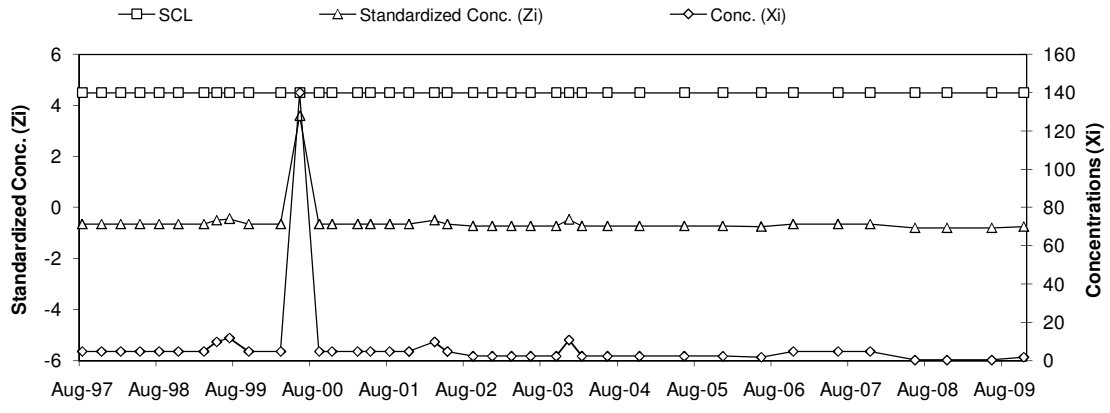
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-97	4.5	5	-0.89
10	Nov-97	4.5	5	-0.89
11	Feb-98	4.5	5	-0.89
12	May-98	4.5	5	-0.89
14	Aug-98	4.5	5	-0.89
15	Nov-98	4.5	5	-0.89
16	Mar-99	4.5	5	-0.89
17	May-99	4.5	5	-0.89
18	Jul-99	4.5	2.5	-1.17
19	Oct-99	4.5	5	-0.89
20	Mar-00	4.5	5	-0.89
21	Jun-00	4.5	5	-0.89
22	Sep-00	4.5	2.5	-1.17
23	Nov-00	4.5	5	-0.89
24	Mar-01	4.5	5	-0.89
25	May-01	4.5	5	-0.89
26	Aug-01	4.5	2.5	-1.17
27	Nov-01	4.5	5	-0.89
28	Mar-02	4.5	5	-0.89
29	May-02	4.5	5	-0.89
30	Sep-02	4.5	2.5	-1.17
31	Dec-02	4.5	2.5	-1.17
32	Mar-03	4.5	2.5	-1.17
33	Jun-03	4.5	2.5	-1.17
34	Oct-03	4.5	2.5	-1.17
35	Dec-03	4.5	2.5	-1.17
36	Feb-04	4.5	2.5	-1.17
37	Jun-04	4.5	2.5	-1.17
38	Nov-04	4.5	2.5	-1.17
39	Jun-05	4.5	2.5	-1.17
40	Dec-05	4.5	2.5	-1.17
41	Jun-06	4.5	5	-0.89
42	Nov-06	4.5	2.5	-1.17
43	Jun-07	4.5	9	-0.45
44	Nov-07	4.5	2	-1.23
45	Jun-08	4.5	2.5	-1.17
46	Nov-08	4.5	2.5	-1.17
47	Jun-09	4.5	2.5	-1.17
48	Nov-09	4.5	2.5	-1.17



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault C - Copper

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	25	25.88	31.76
2	Aug-95	10		
3	Nov-95	37		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	Feb-97	5		
8	May-97	100		

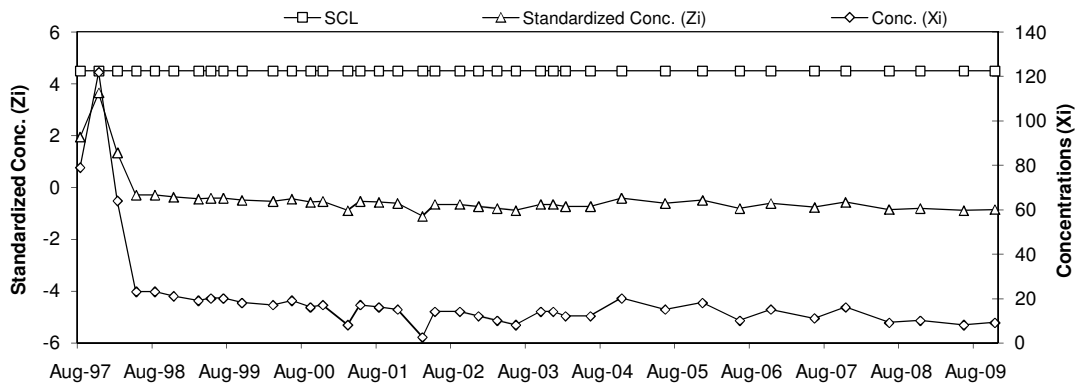
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-97	4.5	5	-0.66
10	Nov-97	4.5	5	-0.66
11	Feb-98	4.5	5	-0.66
12	May-98	4.5	5	-0.66
14	Aug-98	4.5	5	-0.66
15	Nov-98	4.5	5	-0.66
16	Mar-99	4.5	5	-0.66
17	May-99	4.5	10	-0.50
18	Jul-99	4.5	12	-0.44
19	Oct-99	4.5	5	-0.66
20	Mar-00	4.5	5	-0.66
21	Jun-00	4.5	140	3.59
22	Sep-00	4.5	5	-0.66
23	Nov-00	4.5	5	-0.66
24	Mar-01	4.5	5	-0.66
25	May-01	4.5	5	-0.66
26	Aug-01	4.5	5	-0.66
27	Nov-01	4.5	5	-0.66
28	Mar-02	4.5	10	-0.50
29	May-02	4.5	5	-0.66
30	Sep-02	4.5	2.5	-0.74
31	Dec-02	4.5	2.5	-0.74
32	Mar-03	4.5	2.5	-0.74
33	Jun-03	4.5	2.5	-0.74
34	Oct-03	4.5	2.5	-0.74
35	Dec-03	4.5	11	-0.47
36	Feb-04	4.5	2.5	-0.74
37	Jun-04	4.5	2.5	-0.74
38	Nov-04	4.5	2.5	-0.74
39	Jun-05	4.5	2.5	-0.74
40	Dec-05	4.5	2.5	-0.74
41	Jun-06	4.5	2	-0.75
42	Nov-06	4.5	5	-0.66
43	Jun-07	4.5	5	-0.66
44	Nov-07	4.5	5	-0.66
45	Jun-08	4.5	0.5	-0.80
46	Nov-08	4.5	0.5	-0.80
47	Jun-09	4.5	0.5	-0.80
48	Nov-09	4.5	2	-0.75



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault C - Nickel

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	30.38	25.11
2	Aug-95	20		
3	Nov-95	67		
4	Jun-96	10		
5	Aug-96	10		
6	Nov-96	10		
7	Feb-97	45		
8	May-97	66		

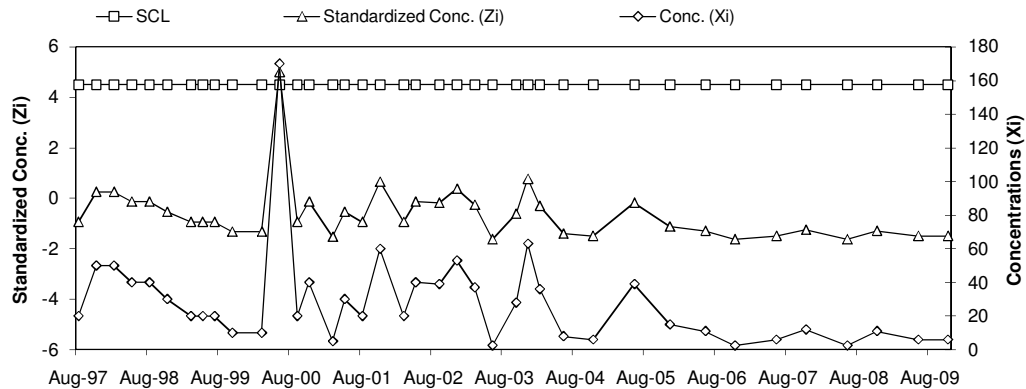
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-97	4.5	79	1.94
10	Nov-97	4.5	122	3.65
11	Feb-98	4.5	64	1.34
12	May-98	4.5	23	-0.29
14	Aug-98	4.5	23	-0.29
15	Nov-98	4.5	21	-0.37
16	Mar-99	4.5	19	-0.45
17	May-99	4.5	20	-0.41
18	Jul-99	4.5	20	-0.41
19	Oct-99	4.5	18	-0.49
20	Mar-00	4.5	17	-0.53
21	Jun-00	4.5	19	-0.45
22	Sep-00	4.5	16	-0.57
23	Nov-00	4.5	17	-0.53
24	Mar-01	4.5	8	-0.89
25	May-01	4.5	17	-0.53
26	Aug-01	4.5	16	-0.57
27	Nov-01	4.5	15	-0.61
28	Mar-02	4.5	2.5	-1.11
29	May-02	4.5	14	-0.65
30	Sep-02	4.5	14	-0.65
31	Dec-02	4.5	12	-0.73
32	Mar-03	4.5	10	-0.81
33	Jun-03	4.5	8	-0.89
34	Oct-03	4.5	14	-0.65
35	Dec-03	4.5	14	-0.65
36	Feb-04	4.5	12	-0.73
37	Jun-04	4.5	12	-0.73
38	Nov-04	4.5	20	-0.41
39	Jun-05	4.5	15	-0.61
40	Dec-05	4.5	18	-0.49
41	Jun-06	4.5	10	-0.81
42	Nov-06	4.5	15	-0.61
43	Jun-07	4.5	11	-0.77
44	Nov-07	4.5	16	-0.57
45	Jun-08	4.5	9	-0.85
46	Nov-08	4.5	10	-0.81
47	Jun-09	4.5	8	-0.89
48	Nov-09	4.5	9	-0.85



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault C - Zinc

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	60	43.75	25.24
2	Aug-95	74		
3	Nov-95	36		
4	Jun-96	10		
5	Aug-96	40		
6	Nov-96	80		
7	Feb-97	30		
8	May-97	20		

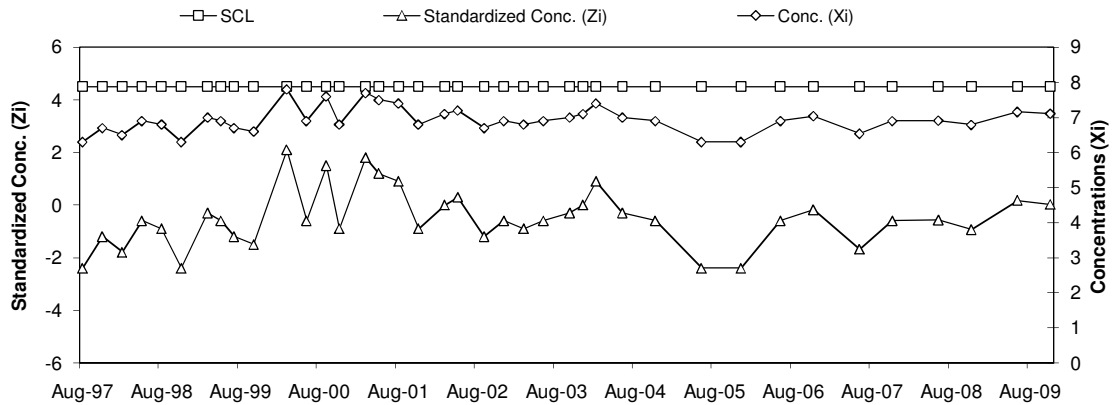
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-97	4.5	20	-0.94
10	Nov-97	4.5	50	0.25
11	Feb-98	4.5	50	0.25
12	May-98	4.5	40	-0.15
14	Aug-98	4.5	40	-0.15
15	Nov-98	4.5	30	-0.54
16	Mar-99	4.5	20	-0.94
17	May-99	4.5	20	-0.94
18	Jul-99	4.5	20	-0.94
19	Oct-99	4.5	10	-1.34
20	Mar-00	4.5	10	-1.34
21	Jun-00	4.5	170	5.00
22	Sep-00	4.5	20	-0.94
23	Nov-00	4.5	40	-0.15
24	Mar-01	4.5	5	-1.54
25	May-01	4.5	30	-0.54
26	Aug-01	4.5	20	-0.94
27	Nov-01	4.5	60	0.64
28	Mar-02	4.5	20	-0.94
29	May-02	4.5	40	-0.15
30	Sep-02	4.5	39	-0.19
31	Dec-02	4.5	53	0.37
32	Mar-03	4.5	37	-0.27
33	Jun-03	4.5	2.5	-1.63
34	Oct-03	4.5	28	-0.62
35	Dec-03	4.5	63	0.76
36	Feb-04	4.5	36	-0.31
37	Jun-04	4.5	8	-1.42
38	Nov-04	4.5	6	-1.50
39	Jun-05	4.5	39	-0.19
40	Dec-05	4.5	15	-1.14
41	Jun-06	4.5	11	-1.30
42	Nov-06	4.5	2.5	-1.63
43	Jun-07	4.5	6	-1.50
44	Nov-07	4.5	12	-1.26
45	Jun-08	4.5	2.5	-1.63
46	Nov-08	4.5	11	-1.30
47	Jun-09	4.5	6	-1.50
48	Nov-09	4.5	6	-1.50



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault C - pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	7.4	7.10	0.33
2	Aug-95	7.4		
3	Nov-95	7		
4	Jun-96	6.9		
5	Aug-96	6.9		
6	Nov-96	7		
7	Feb-97	7.6		
8	May-97	6.6		

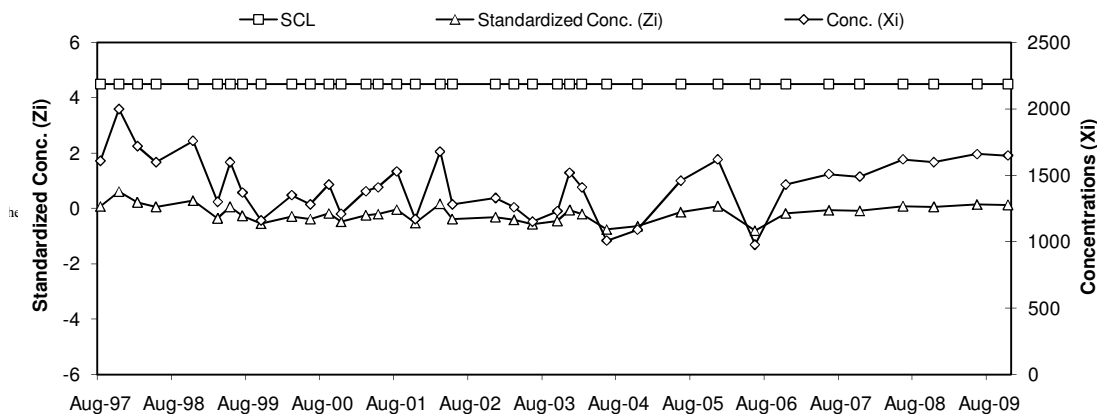
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-97	4.5	6.3	-2.40
10	Nov-97	4.5	6.7	-1.20
11	Feb-98	4.5	6.5	-1.80
12	May-98	4.5	6.9	-0.60
14	Aug-98	4.5	6.8	-0.90
15	Nov-98	4.5	6.3	-2.40
16	Mar-99	4.5	7	-0.30
17	May-99	4.5	6.9	-0.60
18	Jul-99	4.5	6.7	-1.20
19	Oct-99	4.5	6.6	-1.50
20	Mar-00	4.5	7.8	2.10
21	Jun-00	4.5	6.9	-0.60
22	Sep-00	4.5	7.6	1.50
23	Nov-00	4.5	6.8	-0.90
24	Mar-01	4.5	7.7	1.80
25	May-01	4.5	7.5	1.20
26	Aug-01	4.5	7.4	0.90
27	Nov-01	4.5	6.8	-0.90
28	Mar-02	4.5	7.1	0.00
29	May-02	4.5	7.2	0.30
30	Sep-02	4.5	6.7	-1.20
31	Dec-02	4.5	6.9	-0.60
32	Mar-03	4.5	6.8	-0.90
33	Jun-03	4.5	6.9	-0.60
34	Oct-03	4.5	7	-0.30
35	Dec-03	4.5	7.1	0.00
36	Feb-04	4.5	7.4	0.90
37	Jun-04	4.5	7	-0.30
38	Nov-04	4.5	6.9	-0.60
39	Jun-05	4.5	6.3	-2.40
40	Dec-05	4.5	6.3	-2.40
41	Jun-06	4.5	6.9	-0.60
42	Nov-06	4.5	7.0	-0.18
43	Jun-07	4.5	6.5	-1.68
44	Nov-07	4.5	6.9	-0.60
45	Jun-08	4.5	6.9	-0.57
46	Nov-08	4.5	6.8	-0.93
47	Jun-09	4.5	7.2	0.18
48	Nov-09	4.5	7.1	0.03



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault C - SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	530	1,551.25	716.19
2	Aug-95	340		
3	Nov-95	2200		
4	Jun-96	2000		
5	Aug-96	1900		
6	Nov-96	2100		
7	Feb-97	1610		
8	May-97	1730		

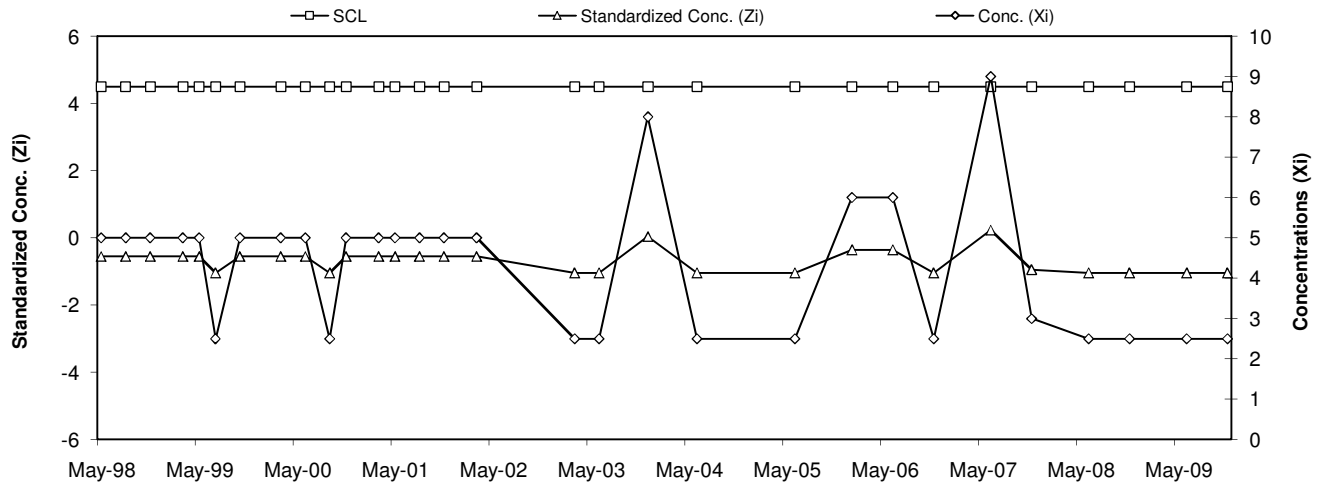
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	Aug-97	4.5	1610	0.08
10	Nov-97	4.5	2000	0.63
11	Feb-98	4.5	1720	0.24
12	May-98	4.5	1600	0.07
14	Nov-98	4.5	1760	0.29
15	Mar-99	4.5	1300	-0.35
16	May-99	4.5	1600	0.07
17	Jul-99	4.5	1370	-0.25
18	Oct-99	4.5	1160	-0.55
19	Mar-00	4.5	1350	-0.28
20	Jun-00	4.5	1280	-0.38
21	Sep-00	4.5	1430	-0.17
22	Nov-00	4.5	1210	-0.48
23	Mar-01	4.5	1380	-0.24
24	May-01	4.5	1410	-0.20
25	Aug-01	4.5	1530	-0.03
26	Nov-01	4.5	1170	-0.53
27	Mar-02	4.5	1680	0.18
28	May-02	4.5	1280	-0.38
29	Dec-02	4.5	1330	-0.31
30	Mar-03	4.5	1260	-0.41
31	Jun-03	4.5	1150	-0.56
32	Oct-03	4.5	1230	-0.45
33	Dec-03	4.5	1520	-0.04
34	Feb-04	4.5	1410	-0.20
35	Jun-04	4.5	1008	-0.76
36	Nov-04	4.5	1090	-0.64
37	Jun-05	4.5	1460	-0.13
38	Dec-05	4.5	1620	0.10
39	Jun-06	4.5	977	-0.80
40	Nov-06	4.5	1430	-0.17
41	Jun-07	4.5	1510	-0.06
42	Nov-07	4.5	1490	-0.09
43	Jun-08	4.5	1620	0.10
44	Nov-08	4.5	1600	0.07
45	Jun-09	4.5	1660	0.15
46	Nov-09	4.5	1650	0.14



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault D - Chromium

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	13	7.86	5.11
2	Jun-96	10		
3	Aug-96	10		
4	Nov-96	10		
5	May-97	5		
6	Aug-97	5		
7	Nov-97	5		
8	Feb-98	5		

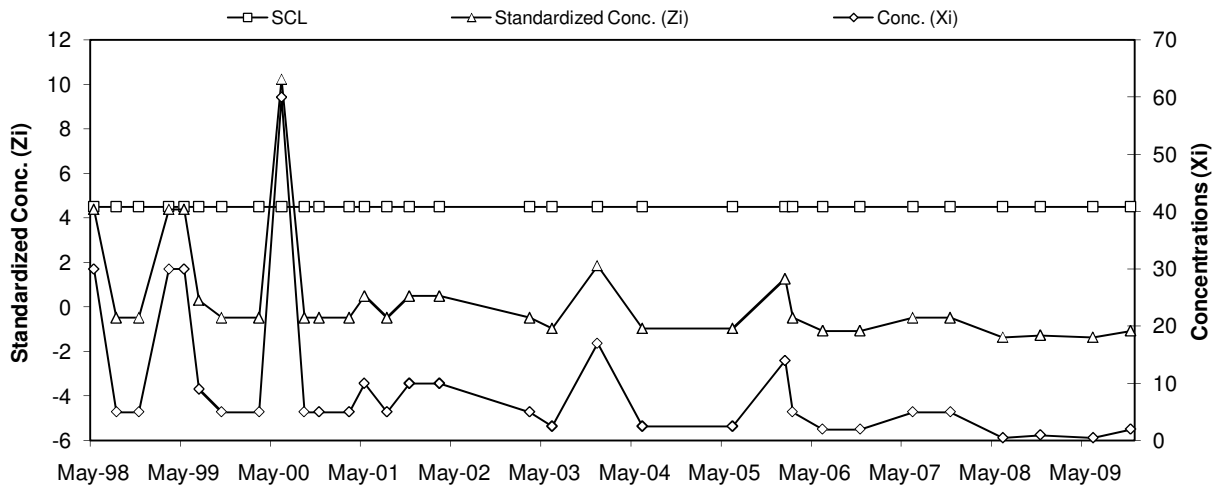
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.56
10	Aug-98	4.5	5	-0.56
11	Nov-98	4.5	5	-0.56
12	Mar-99	4.5	5	-0.56
13	May-99	4.5	5	-0.56
14	Jul-99	4.5	2.5	-1.05
15	Oct-99	4.5	5	-0.56
16	Mar-00	4.5	5	-0.56
17	Jun-00	4.5	5	-0.56
18	Sep-00	4.5	2.5	-1.05
19	Nov-00	4.5	5	-0.56
20	Mar-01	4.5	5	-0.56
21	May-01	4.5	5	-0.56
22	Aug-01	4.5	5	-0.56
23	Nov-01	4.5	5	-0.56
24	Mar-02	4.5	5	-0.56
25	Mar-03	4.5	2.5	-1.05
26	Jun-03	4.5	2.5	-1.05
27	Dec-03	4.5	8	0.03
28	Jun-04	4.5	2.5	-1.05
29	Jun-05	4.5	2.5	-1.05
30	Jan-06	4.5	6	-0.36
31	Jun-06	4.5	6	-0.36
32	Nov-06	4.5	2.5	-1.05
33	Jun-07	4.5	9	0.22
34	Nov-07	4.5	3	-0.95
35	Jun-08	4.5	2.5	-1.05
36	Nov-08	4.5	2.5	-1.05
37	Jun-09	4.5	2.5	-1.05
38	Nov-09	4.5	2.5	-1.05



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault D - Copper**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	10	7.48	5.13
2	Jun-96	10		
3	Aug-96	10		
4	Nov-96	10		
5	May-97	5		
6	Aug-97	5		
7	Nov-97	5		
8	Feb-98	5		

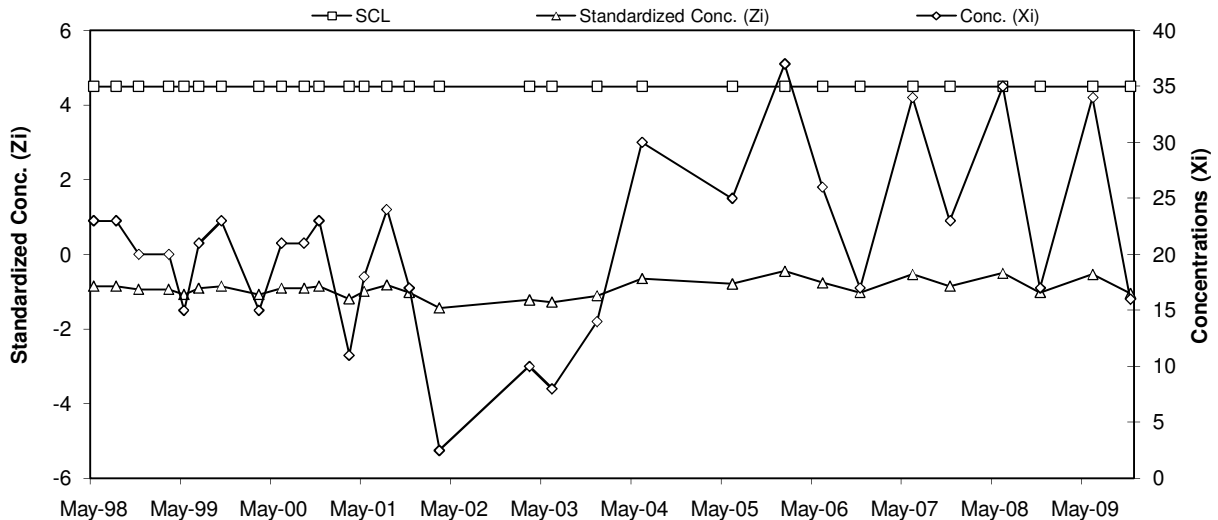
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	30	4.39
10	Aug-98	4.5	5	-0.48
11	Nov-98	4.5	5	-0.48
12	Mar-99	4.5	30	4.39
13	May-99	4.5	30	4.39
14	Jul-99	4.5	9	0.30
15	Oct-99	4.5	5	-0.48
16	Mar-00	4.5	5	-0.48
17	Jun-00	4.5	60	10.24
18	Sep-00	4.5	5	-0.48
19	Nov-00	4.5	5	-0.48
20	Mar-01	4.5	5	-0.48
21	May-01	4.5	10	0.49
22	Aug-01	4.5	5	-0.48
23	Nov-01	4.5	10	0.49
24	Mar-02	4.5	10	0.49
25	Mar-03	4.5	5	-0.48
26	Jun-03	4.5	2.5	-0.97
27	Dec-03	4.5	17	1.86
28	Jun-04	4.5	2.5	-0.97
29	Jun-05	4.5	2.5	-0.97
30	Jan-06	4.5	14	1.27
31	Feb-06	4.5	5	-0.48
32	Jun-06	4.5	2	-1.07
33	Nov-06	4.5	2	-1.07
34	Jun-07	4.5	5	-0.48
35	Nov-07	4.5	5	-0.48
36	Jun-08	4.5	0.5	-1.36
37	Nov-08	4.5	1	-1.26
38	Jun-09	4.5	0.5	-1.36
39	Nov-09	4.5	2	-1.07



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault D - Nickel**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	44	52.63	35.01
2	Jun-96	10		
3	Aug-96	10		
4	Nov-96	40		
5	May-97	58		
6	Aug-97	79		
7	Nov-97	114		
8	Feb-98	66		

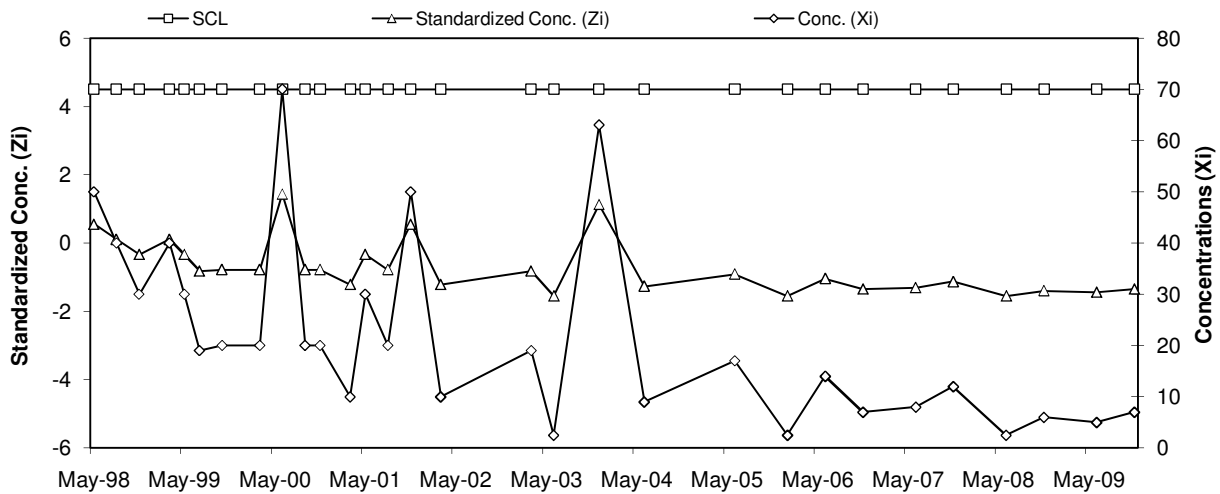
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	23	-0.85
10	Aug-98	4.5	23	-0.85
11	Nov-98	4.5	20	-0.93
12	Mar-99	4.5	20	-0.93
13	May-99	4.5	15	-1.07
14	Jul-99	4.5	21	-0.90
15	Oct-99	4.5	23	-0.85
16	Mar-00	4.5	15	-1.07
17	Jun-00	4.5	21	-0.90
18	Sep-00	4.5	21	-0.90
19	Nov-00	4.5	23	-0.85
20	Mar-01	4.5	11	-1.19
21	May-01	4.5	18	-0.99
22	Aug-01	4.5	24	-0.82
23	Nov-01	4.5	17	-1.02
24	Mar-02	4.5	2.5	-1.43
25	Mar-03	4.5	10	-1.22
26	Jun-03	4.5	8	-1.27
27	Dec-03	4.5	14	-1.10
28	Jun-04	4.5	30	-0.65
29	Jun-05	4.5	25	-0.79
30	Jan-06	4.5	37	-0.45
31	Jun-06	4.5	26	-0.76
32	Nov-06	4.5	17	-1.02
33	Jun-07	4.5	34	-0.53
34	Nov-07	4.5	23	-0.85
35	Jun-08	4.5	35	-0.50
36	Nov-08	4.5	17	-1.02
37	Jun-09	4.5	34	-0.53
38	Nov-09	4.5	16	-1.05



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault D - Zinc

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	20	37.49	22.59
2	Jun-96	10		
3	Aug-96	40		
4	Nov-96	70		
5	May-97	70		
6	Aug-97	20		
7	Nov-97	30		
8	Feb-98	40		

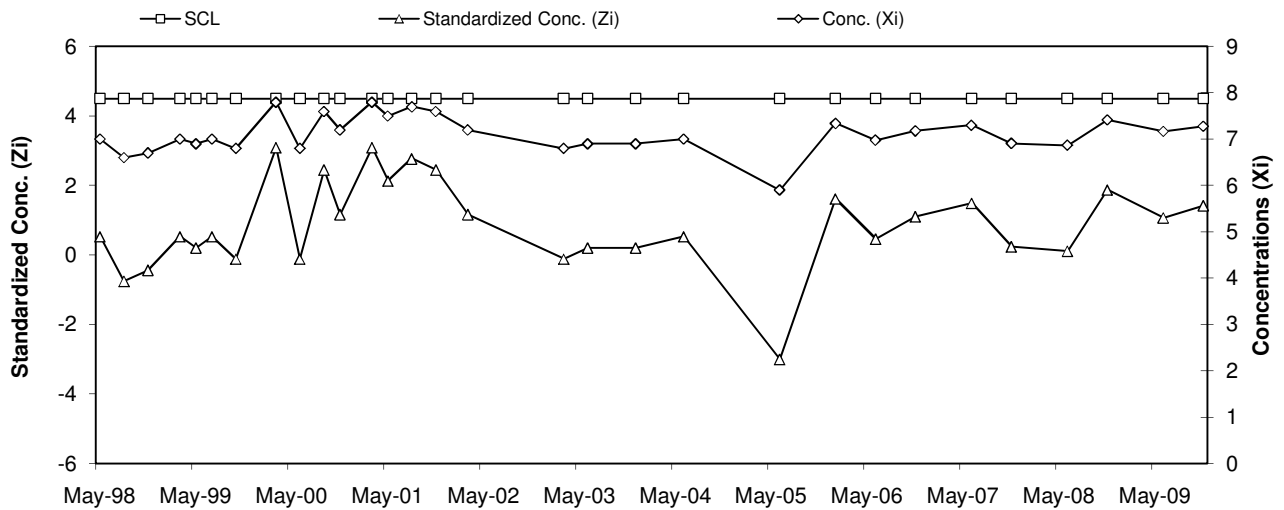
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	50	0.55
10	Aug-98	4.5	40	0.11
11	Nov-98	4.5	30	-0.33
12	Mar-99	4.5	40	0.11
13	May-99	4.5	30	-0.33
14	Jul-99	4.5	19	-0.82
15	Oct-99	4.5	20	-0.77
16	Mar-00	4.5	20	-0.77
17	Jun-00	4.5	70	1.44
18	Sep-00	4.5	20	-0.77
19	Nov-00	4.5	20	-0.77
20	Mar-01	4.5	10	-1.22
21	May-01	4.5	30	-0.33
22	Aug-01	4.5	20	-0.77
23	Nov-01	4.5	50	0.55
24	Mar-02	4.5	10	-1.22
25	Mar-03	4.5	19	-0.82
26	Jun-03	4.5	2.5	-1.55
27	Dec-03	4.5	63	1.13
28	Jun-04	4.5	9	-1.26
29	Jun-05	4.5	17	-0.91
30	Jan-06	4.5	2.5	-1.55
31	Jun-06	4.5	14	-1.04
32	Nov-06	4.5	7	-1.35
33	Jun-07	4.5	8	-1.31
34	Nov-07	4.5	12	-1.13
35	Jun-08	4.5	2.5	-1.55
36	Nov-08	4.5	6	-1.39
37	Jun-09	4.5	5	-1.44
38	Nov-09	4.5	7	-1.35



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault D - pH

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	7.3	6.84	0.31
2	Jun-96	6.9		
3	Aug-96	7.2		
4	Nov-96	7		
5	May-97	6.7		
6	Aug-97	6.5		
7	Nov-97	6.6		
8	Feb-98	6.5		

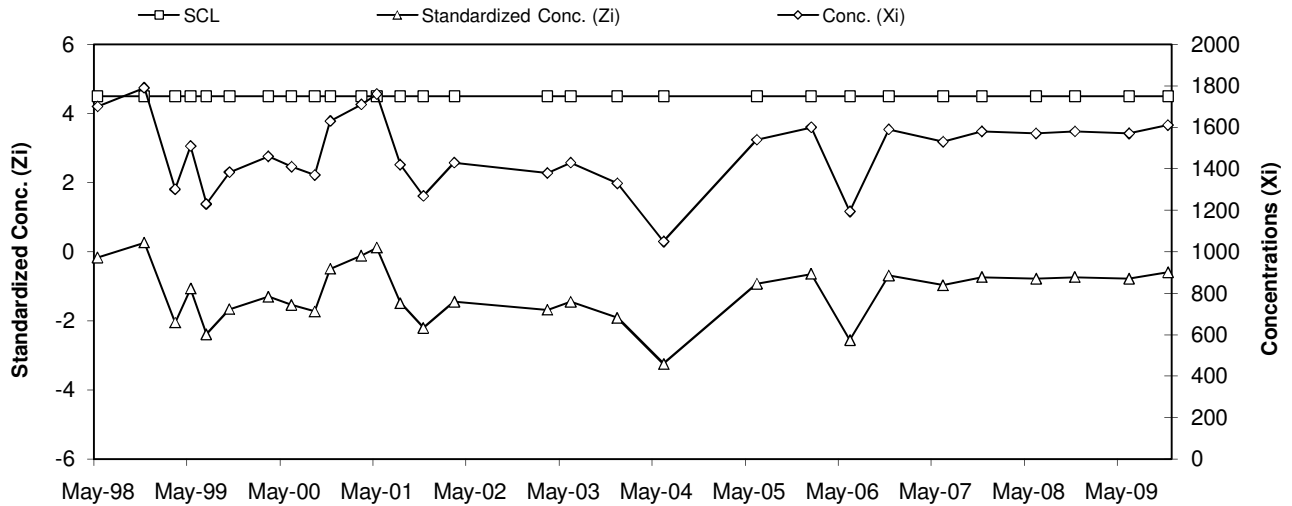
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	7	0.52
10	Aug-98	4.5	6.6	-0.76
11	Nov-98	4.5	6.7	-0.44
12	Mar-99	4.5	7	0.52
13	May-99	4.5	6.9	0.20
14	Jul-99	4.5	7	0.52
15	Oct-99	4.5	6.8	-0.12
16	Mar-00	4.5	7.8	3.09
17	Jun-00	4.5	6.8	-0.12
18	Sep-00	4.5	7.6	2.45
19	Nov-00	4.5	7.2	1.16
20	Mar-01	4.5	7.8	3.09
21	May-01	4.5	7.5	2.13
22	Aug-01	4.5	7.7	2.77
23	Nov-01	4.5	7.6	2.45
24	Mar-02	4.5	7.2	1.16
25	Mar-03	4.5	6.8	-0.12
26	Jun-03	4.5	6.9	0.20
27	Dec-03	4.5	6.9	0.20
28	Jun-04	4.5	7	0.52
29	Jun-05	4.5	5.9	-3.01
30	Jan-06	4.5	7.3	1.61
31	Jun-06	4.5	7.0	0.46
32	Nov-06	4.5	7.2	1.10
33	Jun-07	4.5	7.3	1.49
34	Nov-07	4.5	6.9	0.23
35	Jun-08	4.5	6.9	0.10
36	Nov-08	4.5	7.4	1.87
37	Jun-09	4.5	7.2	1.07
38	Nov-09	4.5	7.3	1.42



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault D - SpC**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-95	2200	1,734.38	211.31
2	Jun-96	1800		
3	Aug-96	1600		
4	Nov-96	1700		
5	May-97	1580		
6	Aug-97	1540		
7	Nov-97	1800		
8	Feb-98	1655		

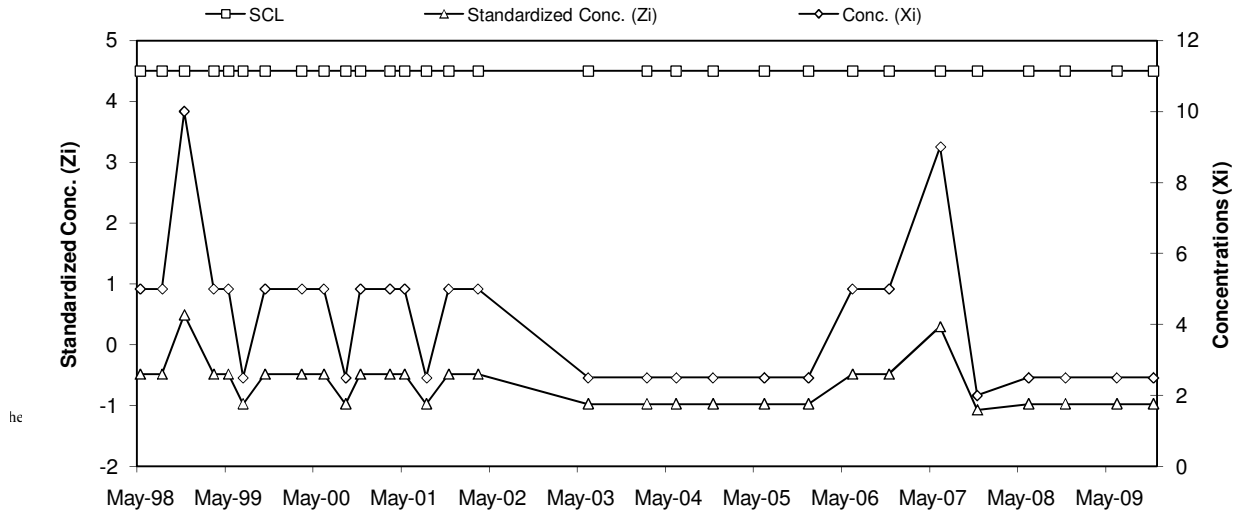
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	1700	-0.16
11	Nov-98	4.5	1790	0.26
12	Mar-99	4.5	1302	-2.05
13	May-99	4.5	1510	-1.06
14	Jul-99	4.5	1231	-2.38
15	Oct-99	4.5	1384	-1.66
16	Mar-00	4.5	1460	-1.30
17	Jun-00	4.5	1410	-1.54
18	Sep-00	4.5	1370	-1.72
19	Nov-00	4.5	1630	-0.49
20	Mar-01	4.5	1710	-0.12
21	May-01	4.5	1760	0.12
22	Aug-01	4.5	1420	-1.49
23	Nov-01	4.5	1270	-2.20
24	Mar-02	4.5	1430	-1.44
25	Mar-03	4.5	1380	-1.68
26	Jun-03	4.5	1430	-1.44
27	Dec-03	4.5	1330	-1.91
28	Jun-04	4.5	1050	-3.24
29	Jun-05	4.5	1540	-0.92
30	Jan-06	4.5	1600	-0.64
31	Jun-06	4.5	1195	-2.55
32	Nov-06	4.5	1590	-0.68
33	Jun-07	4.5	1530	-0.97
34	Nov-07	4.5	1580	-0.73
35	Jun-08	4.5	1570	-0.78
36	Nov-08	4.5	1580	-0.73
37	Jun-09	4.5	1570	-0.78
38	Nov-09	4.5	1610	-0.59



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault E - Chromium**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-96	10	7.48	5.13
2	Jun-96	10		
3	Oct-96	10		
4	Nov-96	10		
5	May-97	5		
6	Aug-97	5		
7	Nov-97	5		
8	Feb-98	5		

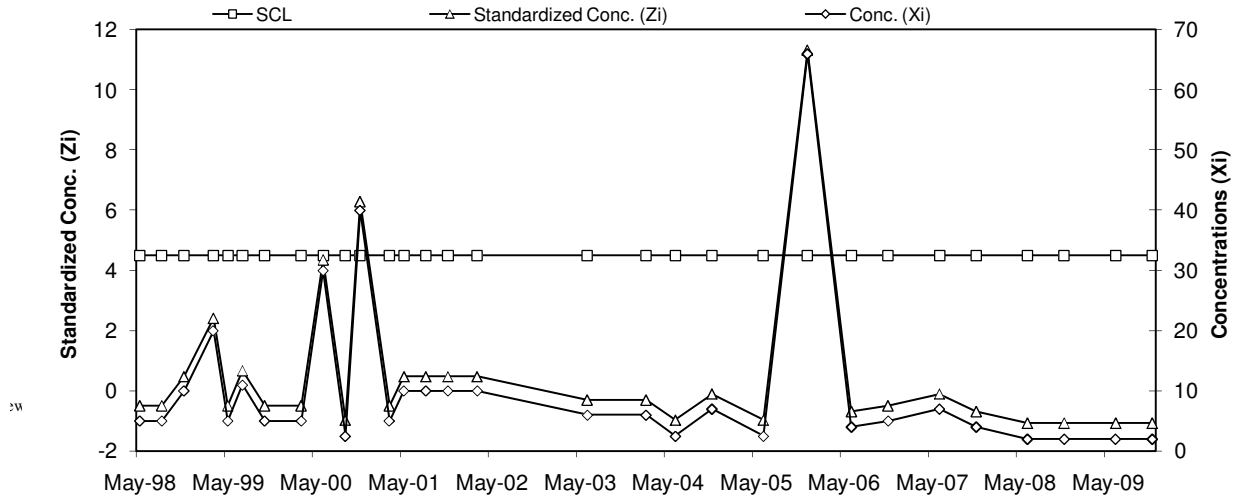
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.48
10	Aug-98	4.5	5	-0.48
11	Nov-98	4.5	10	0.49
12	Mar-99	4.5	5	-0.48
13	May-99	4.5	5	-0.48
14	Jul-99	4.5	2.5	-0.97
15	Oct-99	4.5	5	-0.48
16	Mar-00	4.5	5	-0.48
17	Jun-00	4.5	5	-0.48
18	Sep-00	4.5	2.5	-0.97
19	Nov-00	4.5	5	-0.48
20	Mar-01	4.5	5	-0.48
21	May-01	4.5	5	-0.48
22	Aug-01	4.5	2.5	-0.97
23	Nov-01	4.5	5	-0.48
24	Mar-02	4.5	5	-0.48
25	Jun-03	4.5	2.5	-0.97
26	Feb-04	4.5	2.5	-0.97
27	Jun-04	4.5	2.5	-0.97
28	Nov-04	4.5	2.5	-0.97
29	Jun-05	4.5	2.5	-0.97
30	Dec-05	4.5	2.5	-0.97
31	Jun-06	4.5	5	-0.48
32	Nov-06	4.5	5	-0.48
33	Jun-07	4.5	9	0.30
34	Nov-07	4.5	2	-1.07
35	Jun-08	4.5	2.5	-0.97
36	Nov-08	4.5	2.5	-0.97
37	Jun-09	4.5	2.5	-0.97
38	Nov-09	4.5	2.5	-0.97



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault E - Copper**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-96	10	7.50	5.17
2	Jun-96	10		
3	Oct-96	10		
4	Nov-96	10		
5	May-97	5		
6	Aug-97	5		
7	Nov-97	5		
8	Feb-98	5		

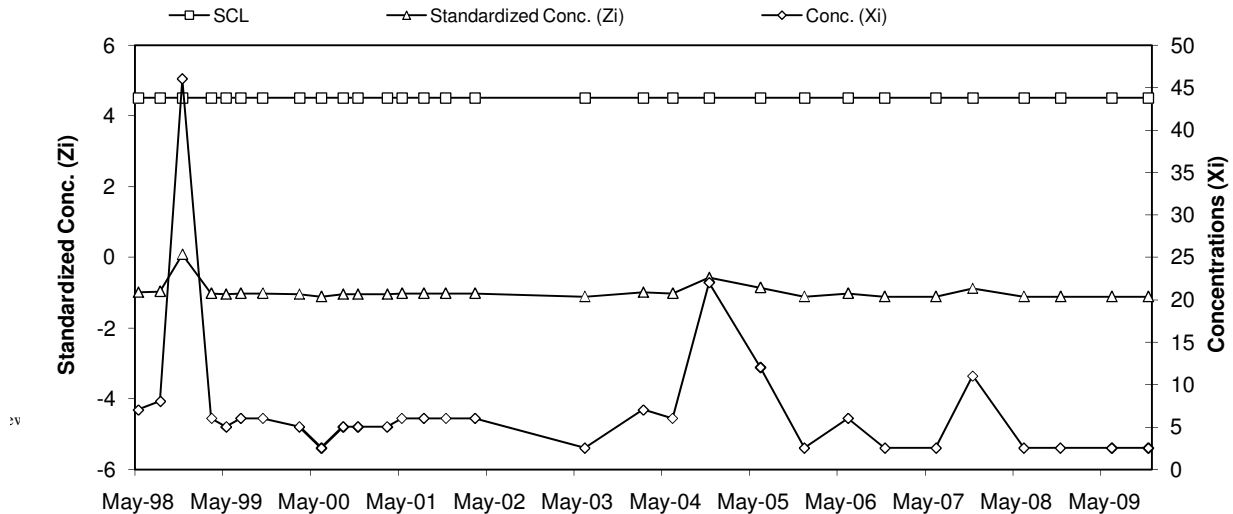
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.48
10	Aug-98	4.5	5	-0.48
11	Nov-98	4.5	10	0.48
12	Mar-99	4.5	20	2.42
13	May-99	4.5	5	-0.48
14	Jul-99	4.5	11	0.68
15	Oct-99	4.5	5	-0.48
16	Mar-00	4.5	5	-0.48
17	Jun-00	4.5	30	4.35
18	Sep-00	4.5	2.5	-0.97
19	Nov-00	4.5	40	6.29
20	Mar-01	4.5	5	-0.48
21	May-01	4.5	10	0.48
22	Aug-01	4.5	10	0.48
23	Nov-01	4.5	10	0.48
24	Mar-02	4.5	10	0.48
25	Jun-03	4.5	6	-0.29
26	Feb-04	4.5	6	-0.29
27	Jun-04	4.5	2.5	-0.97
28	Nov-04	4.5	7	-0.10
29	Jun-05	4.5	2.5	-0.97
30	Dec-05	4.5	66	11.32
31	Jun-06	4.5	4	-0.68
32	Nov-06	4.5	5	-0.48
33	Jun-07	4.5	7	-0.10
34	Nov-07	4.5	4	-0.68
35	Jun-08	4.5	2	-1.06
36	Nov-08	4.5	2	-1.06
37	Jun-09	4.5	2	-1.06
38	Nov-09	4.5	2	-1.06



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault E - Nickel**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-96	46	43.13	36.46
2	Jun-96	10		
3	Oct-96	10		
4	Nov-96	10		
5	May-97	35		
6	Aug-97	64		
7	Nov-97	116		
8	Feb-98	54		

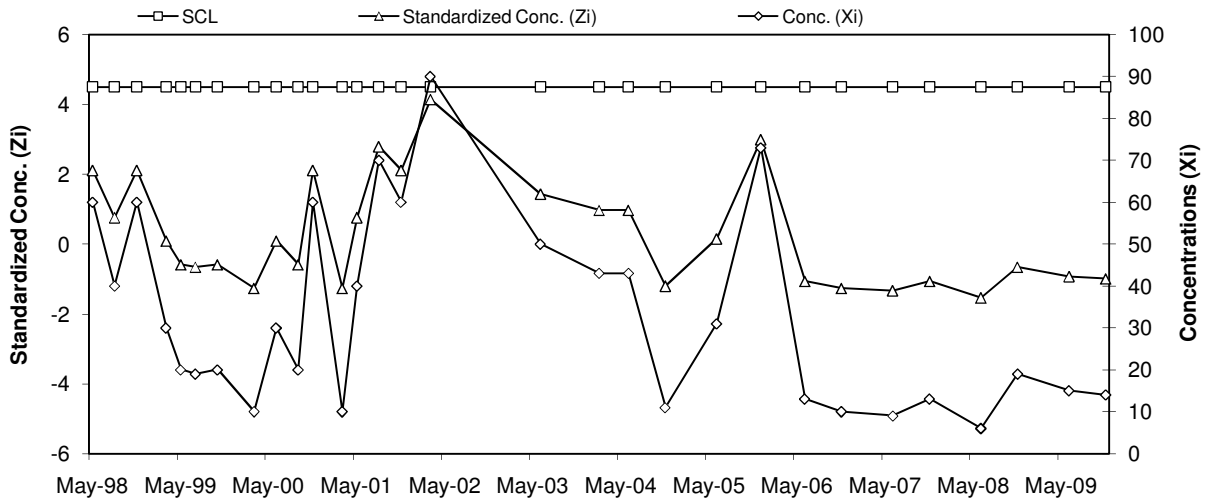
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	7	-0.99
10	Aug-98	4.5	8	-0.96
11	Nov-98	4.5	46	0.08
12	Mar-99	4.5	6	-1.02
13	May-99	4.5	5	-1.05
14	Jul-99	4.5	6	-1.02
15	Oct-99	4.5	6	-1.02
16	Mar-00	4.5	5	-1.05
17	Jun-00	4.5	2.5	-1.11
18	Sep-00	4.5	5	-1.05
19	Nov-00	4.5	5	-1.05
20	Mar-01	4.5	5	-1.05
21	May-01	4.5	6	-1.02
22	Aug-01	4.5	6	-1.02
23	Nov-01	4.5	6	-1.02
24	Mar-02	4.5	6	-1.02
25	Jun-03	4.5	2.5	-1.11
26	Feb-04	4.5	7	-0.99
27	Jun-04	4.5	6	-1.02
28	Nov-04	4.5	22	-0.58
29	Jun-05	4.5	12	-0.85
30	Dec-05	4.5	2.5	-1.11
31	Jun-06	4.5	6	-1.02
32	Nov-06	4.5	2.5	-1.11
33	Jun-07	4.5	2.5	-1.11
34	Nov-07	4.5	11	-0.88
35	Jun-08	4.5	2.5	-1.11
36	Nov-08	4.5	2.5	-1.11
37	Jun-09	4.5	2.5	-1.11
38	Nov-09	4.5	2.5	-1.11



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault E - Zinc**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-96	10	28.75	14.79
2	Jun-96	10		
3	Oct-96	20		
4	Nov-96	30		
5	May-97	30		
6	Aug-97	40		
7	Nov-97	40		
8	Feb-98	50		

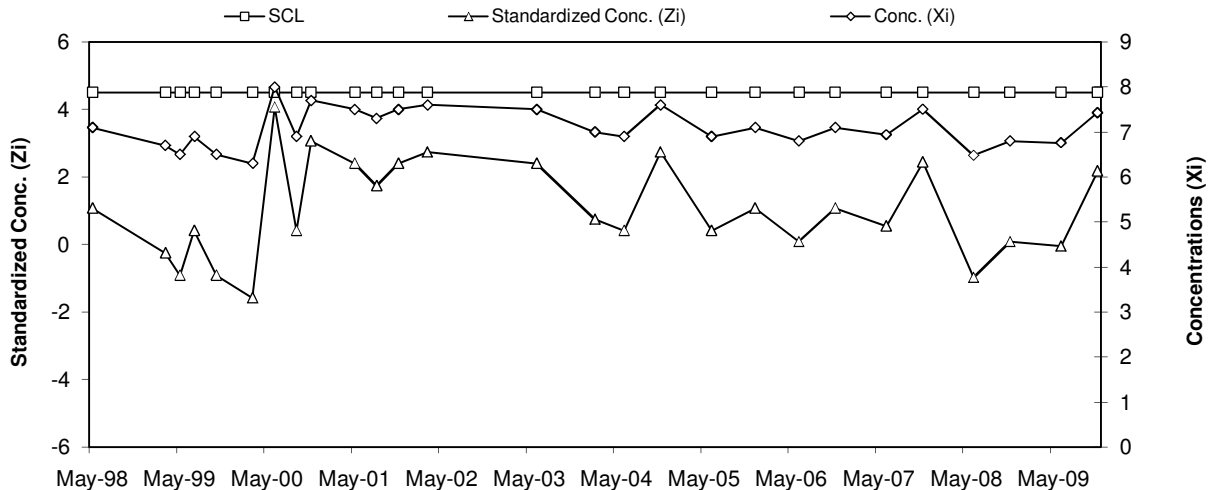
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	60	2.11
10	Aug-98	4.5	40	0.76
11	Nov-98	4.5	60	2.11
12	Mar-99	4.5	30	0.08
13	May-99	4.5	20	-0.59
14	Jul-99	4.5	19	-0.66
15	Oct-99	4.5	20	-0.59
16	Mar-00	4.5	10	-1.27
17	Jun-00	4.5	30	0.08
18	Sep-00	4.5	20	-0.59
19	Nov-00	4.5	60	2.11
20	Mar-01	4.5	10	-1.27
21	May-01	4.5	40	0.76
22	Aug-01	4.5	70	2.79
23	Nov-01	4.5	60	2.11
24	Mar-02	4.5	90	4.14
25	Jun-03	4.5	50	1.44
26	Feb-04	4.5	43	0.96
27	Jun-04	4.5	43	0.96
28	Nov-04	4.5	11	-1.20
29	Jun-05	4.5	31	0.15
30	Dec-05	4.5	73	2.99
31	Jun-06	4.5	13	-1.06
32	Nov-06	4.5	10	-1.27
33	Jun-07	4.5	9	-1.34
34	Nov-07	4.5	13	-1.06
35	Jun-08	4.5	6	-1.54
36	Nov-08	4.5	19	-0.66
37	Jun-09	4.5	15	-0.93
38	Nov-09	4.5	14	-1.00



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault E - pH**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-96	7.2	6.78	0.30
2	Jun-96	7		
3	Oct-96	6.9		
4	Nov-96	7		
5	May-97	6.3		
6	Aug-97	6.7		
7	Nov-97	6.5		
8	Feb-98	6.6		

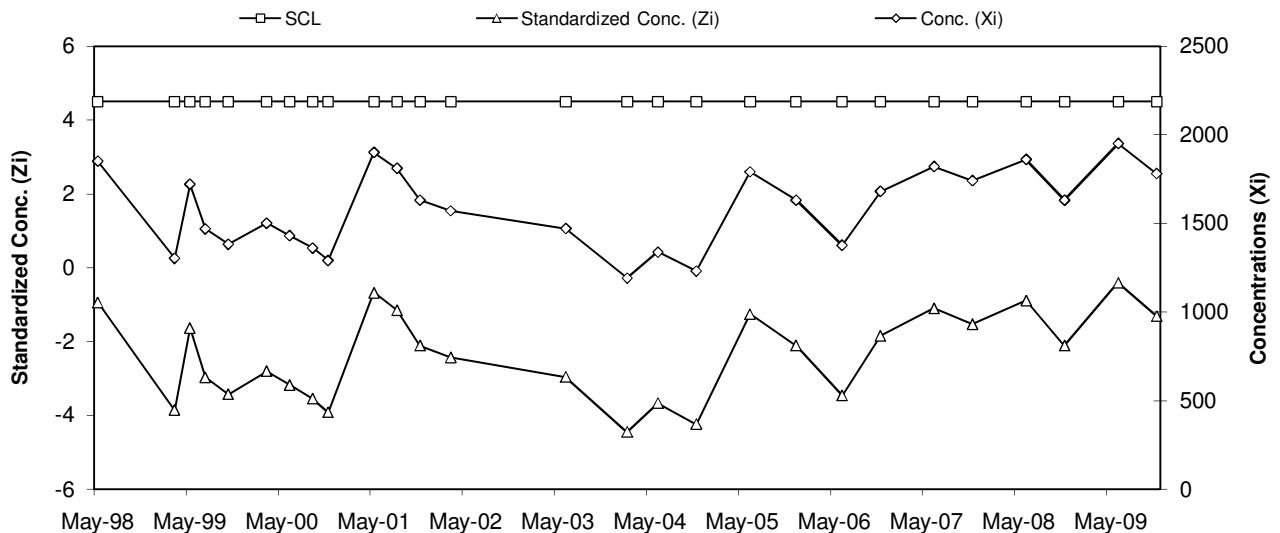
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	7.1	1.08
10	Aug-98	4.5	6.7	-0.25
11	Mar-99	4.5	6.5	-0.91
12	May-99	4.5	6.9	0.42
13	Jul-99	4.5	6.5	-0.91
14	Oct-99	4.5	6.3	-1.58
15	Mar-00	4.5	8	4.07
16	Jun-00	4.5	6.9	0.42
17	Sep-00	4.5	7.7	3.07
18	Nov-00	4.5	7.5	2.41
19	Mar-01	4.5	7.3	1.74
20	May-01	4.5	7.5	2.41
21	Aug-01	4.5	7.6	2.74
22	Nov-01	4.5	7.5	2.41
23	Mar-02	4.5	7	0.75
24	Jun-03	4.5	6.9	0.42
25	Feb-04	4.5	7.6	2.74
26	Jun-04	4.5	6.9	0.42
27	Nov-04	4.5	7.1	1.08
28	Jun-05	4.5	6.8	0.08
29	Dec-05	4.5	7.1	1.08
30	Jun-06	4.5	6.9	0.55
31	Nov-06	4.5	7.5	2.44
32	Jun-07	4.5	6.5	-0.98
33	Nov-07	4.5	6.8	0.08
34	Jun-08	4.5	6.8	-0.05
35	Nov-08	4.5	7.4	2.17
35	Nov-08	4.5	6.8	0.05
36	Jun-09	4.5	6.8	0.05
37	Nov-09	4.5	6.9	0.38



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault E - SpC

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Mar-96	2000	2,026.25	187.84
2	Jun-96	2400		
3	Oct-96	2000		
4	Nov-96	1800		
5	May-97	2120		
6	Aug-97	1840		
7	Nov-97	2100		
8	Feb-98	1950		

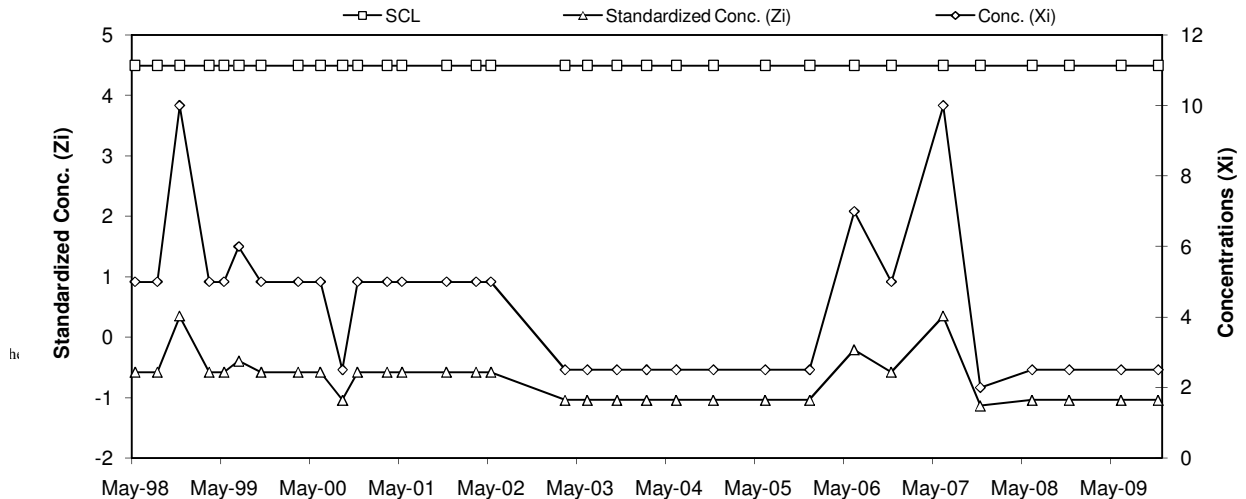
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	1850	-0.94
10	Mar-99	4.5	1302	-3.86
11	May-99	4.5	1720	-1.63
12	Jul-99	4.5	1468	-2.97
13	Oct-99	4.5	1382	-3.43
14	Mar-00	4.5	1500	-2.80
15	Jun-00	4.5	1430	-3.17
16	Sep-00	4.5	1360	-3.55
17	Nov-00	4.5	1290	-3.92
18	May-01	4.5	1900	-0.67
19	Aug-01	4.5	1810	-1.15
20	Nov-01	4.5	1630	-2.11
21	Mar-02	4.5	1570	-2.43
22	Jun-03	4.5	1470	-2.96
23	Feb-04	4.5	1190	-4.45
24	Jun-04	4.5	1337	-3.67
25	Nov-04	4.5	1230	-4.24
26	Jun-05	4.5	1790	-1.26
27	Dec-05	4.5	1630	-2.11
28	Jun-06	4.5	1376	-3.46
29	Nov-06	4.5	1680	-1.84
30	Jun-07	4.5	1820	-1.10
31	Nov-07	4.5	1740	-1.52
32	Jun-08	4.5	1860	-0.89
33	Nov-08	4.5	1630	-2.11
34	Jun-09	4.5	1950	-0.41
35	Nov-09	4.5	1780	-1.31



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault F - Chromium

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	Aug-97	5		
7	Nov-97	5		
8	Feb-98	5		

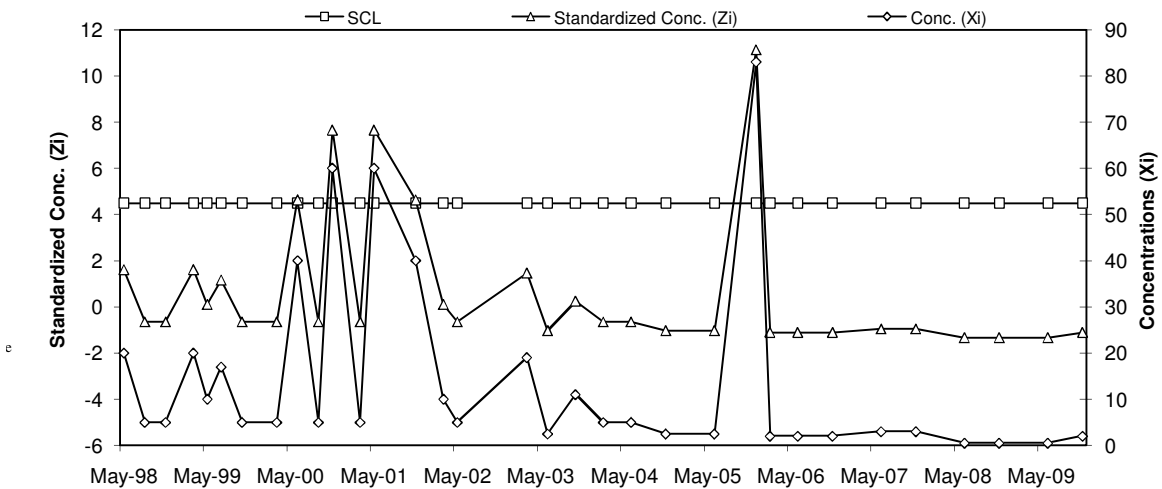
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	5	-0.58
10	Aug-98	4.5	5	-0.58
11	Nov-98	4.5	10	0.35
12	Mar-99	4.5	5	-0.58
13	May-99	4.5	5	-0.58
14	Jul-99	4.5	6	-0.39
15	Oct-99	4.5	5	-0.58
16	Mar-00	4.5	5	-0.58
17	Jun-00	4.5	5	-0.58
18	Sep-00	4.5	2.5	-1.04
19	Nov-00	4.5	5	-0.58
20	Mar-01	4.5	5	-0.58
21	May-01	4.5	5	-0.58
22	Nov-01	4.5	5	-0.58
23	Mar-02	4.5	5	-0.58
24	May-02	4.5	5	-0.58
25	Mar-03	4.5	2.5	-1.04
26	Jun-03	4.5	2.5	-1.04
27	Oct-03	4.5	2.5	-1.04
28	Feb-04	4.5	2.5	-1.04
29	Jun-04	4.5	2.5	-1.04
30	Nov-04	4.5	2.5	-1.04
31	Jun-05	4.5	2.5	-1.04
32	Dec-05	4.5	2.5	-1.04
33	Jun-06	4.5	7	-0.21
34	Nov-06	4.5	5	-0.58
35	Jun-07	4.5	10	0.35
36	Nov-07	4.5	2	-1.14
37	Jun-08	4.5	2.5	-1.04
38	Nov-08	4.5	2.5	-1.04
39	Jun-09	4.5	2.5	-1.04
40	Nov-09	4.5	2.5	-1.04



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault F - Copper

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	10	9.38	6.61
2	Aug-95	10		
3	Jun-96	10		
4	Aug-96	20		
5	Nov-96	10		
6	Aug-97	5		
7	Nov-97	5		
8	Feb-98	5		

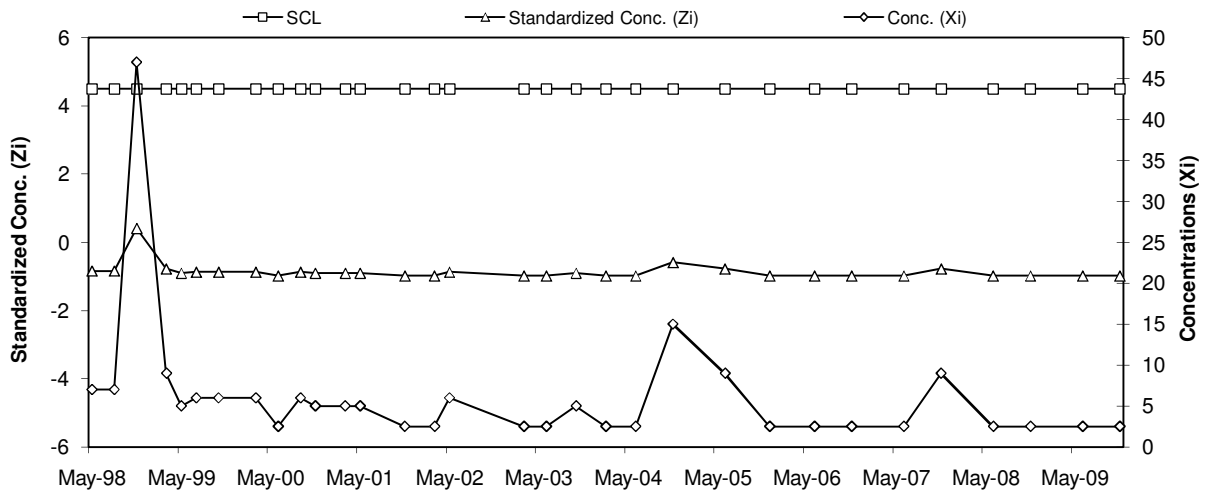
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	20	1.61
10	Aug-98	4.5	5	-0.66
11	Nov-98	4.5	5	-0.66
12	Mar-99	4.5	20	1.61
13	May-99	4.5	10	0.09
14	Jul-99	4.5	17	1.15
15	Oct-99	4.5	5	-0.66
16	Mar-00	4.5	5	-0.66
17	Jun-00	4.5	40	4.63
18	Sep-00	4.5	5	-0.66
19	Nov-00	4.5	60	7.66
20	Mar-01	4.5	5	-0.66
21	May-01	4.5	60	7.66
22	Nov-01	4.5	40	4.63
23	Mar-02	4.5	10	0.09
24	May-02	4.5	5	-0.66
25	Mar-03	4.5	19	1.46
26	Jun-03	4.5	2.5	-1.04
27	Oct-03	4.5	11	0.25
28	Feb-04	4.5	5	-0.66
29	Jun-04	4.5	5	-0.66
30	Nov-04	4.5	2.5	-1.04
31	Jun-05	4.5	2.5	-1.04
32	Dec-05	4.5	83	11.14
33	Feb-06	4.5	2	-1.12
34	Jun-06	4.5	2	-1.12
35	Nov-06	4.5	2	-1.12
36	Jun-07	4.5	3	-0.97
37	Nov-07	4.5	3	-0.97
38	Jun-08	4.5	0.5	-1.34
39	Nov-08	4.5	0.5	-1.34
40	Jun-09	4.5	0.5	-1.34
41	Nov-09	4.5	2	-1.12



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault F - Nickel**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	15	33.88	31.96
2	Aug-95	20		
3	Jun-96	10		
4	Aug-96	10		
5	Nov-96	10		
6	Aug-97	64		
7	Nov-97	93		
8	Feb-98	49		

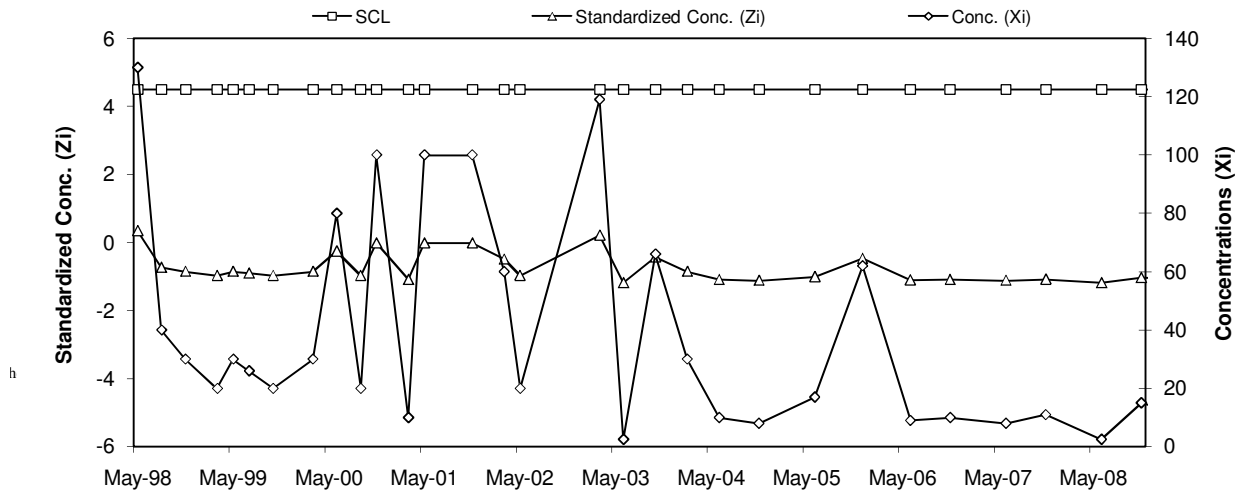
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	7	-0.84
10	Aug-98	4.5	7	-0.84
11	Nov-98	4.5	47	0.41
12	Mar-99	4.5	9	-0.78
13	May-99	4.5	5	-0.90
14	Jul-99	4.5	6	-0.87
15	Oct-99	4.5	6	-0.87
16	Mar-00	4.5	6	-0.87
17	Jun-00	4.5	2.5	-0.98
18	Sep-00	4.5	6	-0.87
19	Nov-00	4.5	5	-0.90
20	Mar-01	4.5	5	-0.90
21	May-01	4.5	5	-0.90
22	Nov-01	4.5	2.5	-0.98
23	Mar-02	4.5	2.5	-0.98
24	May-02	4.5	6	-0.87
25	Mar-03	4.5	2.5	-0.98
26	Jun-03	4.5	2.5	-0.98
27	Oct-03	4.5	5	-0.90
28	Feb-04	4.5	2.5	-0.98
29	Jun-04	4.5	2.5	-0.98
30	Nov-04	4.5	15	-0.59
31	Jun-05	4.5	9	-0.78
32	Dec-05	4.5	2.5	-0.98
33	Jun-06	4.5	2.5	-0.98
34	Nov-06	4.5	2.5	-0.98
35	Jun-07	4.5	2.5	-0.98
36	Nov-07	4.5	9	-0.78
37	Jun-08	4.5	2.5	-0.98
38	Nov-08	4.5	2.5	-0.98
39	Jun-09	4.5	2.5	-0.98
40	Nov-09	4.5	2.5	-0.98



REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
 Vault F - Zinc

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	190	101.24	83.60
2	Aug-95	220		
3	Jun-96	10		
4	Aug-96	50		
5	Nov-96	30		
6	Aug-97	20		
7	Nov-97	130		
8	Feb-98	160		

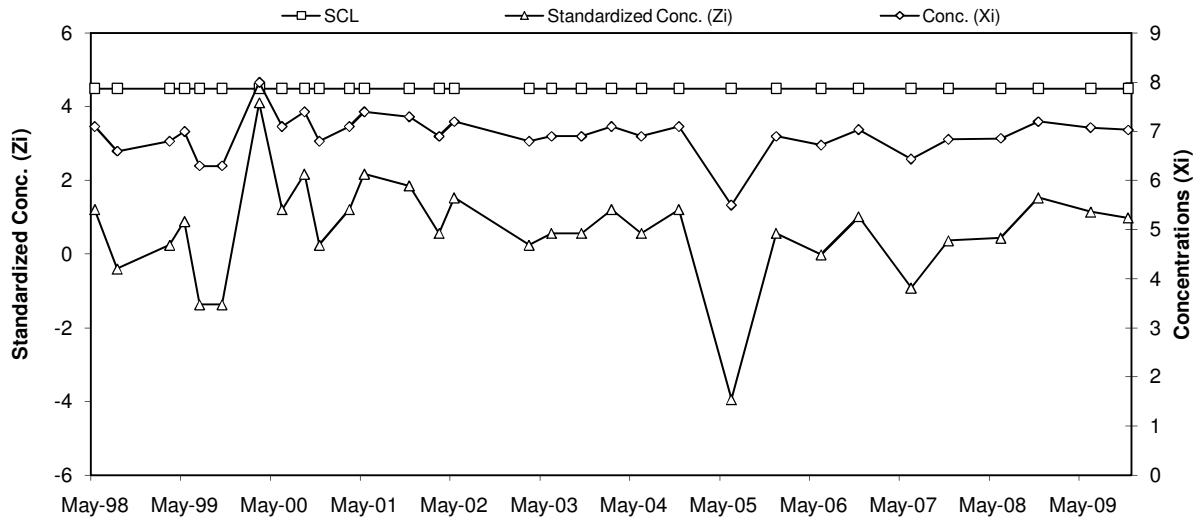
Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	130	0.34
10	Aug-98	4.5	40	-0.73
11	Nov-98	4.5	30	-0.85
12	Mar-99	4.5	20	-0.97
13	May-99	4.5	30	-0.85
14	Jul-99	4.5	26	-0.90
15	Oct-99	4.5	20	-0.97
16	Mar-00	4.5	30	-0.85
17	Jun-00	4.5	80	-0.25
18	Sep-00	4.5	20	-0.97
19	Nov-00	4.5	100	-0.01
20	Mar-01	4.5	10	-1.09
21	May-01	4.5	100	-0.01
22	Nov-01	4.5	100	-0.01
23	Mar-02	4.5	60	-0.49
24	May-02	4.5	20	-0.97
25	Mar-03	4.5	119	0.21
26	Jun-03	4.5	2.5	-1.18
27	Oct-03	4.5	66	-0.42
28	Feb-04	4.5	30	-0.85
29	Jun-04	4.5	10	-1.09
30	Nov-04	4.5	8	-1.12
31	Jun-05	4.5	17	-1.01
32	Dec-05	4.5	62	-0.47
33	Jun-06	4.5	9	-1.10
34	Nov-06	4.5	10	-1.09
35	Jun-07	4.5	8	-1.12
36	Nov-07	4.5	11	-1.08
37	Jun-08	4.5	2.5	-1.18
38	Nov-08	4.5	15	-1.03
39	Jun-09	4.5	10	-1.09
40	Nov-09	4.5	11	-1.08



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault F - pH**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	6.8	6.73	0.31
2	Aug-95	6.8		
3	Jun-96	6.8		
4	Aug-96	7.1		
5	Nov-96	7		
6	Aug-97	6.1		
7	Nov-97	6.7		
8	Feb-98	6.5		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	7.1	1.21
10	Aug-98	4.5	6.6	-0.40
11	Mar-99	4.5	6.8	0.24
12	May-99	4.5	7	0.89
13	Jul-99	4.5	6.3	-1.37
14	Oct-99	4.5	6.3	-1.37
15	Mar-00	4.5	8	4.11
16	Jun-00	4.5	7.1	1.21
17	Sep-00	4.5	7.4	2.17
18	Nov-00	4.5	6.8	0.24
19	Mar-01	4.5	7.1	1.21
20	May-01	4.5	7.4	2.17
21	Nov-01	4.5	7.3	1.85
22	Mar-02	4.5	6.9	0.56
23	May-02	4.5	7.2	1.53
24	Mar-03	4.5	6.8	0.24
25	Jun-03	4.5	6.9	0.56
26	Oct-03	4.5	6.9	0.56
27	Feb-04	4.5	7.1	1.21
28	Jun-04	4.5	6.9	0.56
29	Nov-04	4.5	7.1	1.21
30	Jun-05	4.5	5.5	-3.94
31	Dec-05	4.5	6.9	0.56
32	Jun-06	4.5	6.7	-0.02
33	Nov-06	4.5	7.0	1.01
34	Jun-07	4.5	6.4	-0.92
35	Nov-07	4.5	6.8	0.37
36	Jun-08	4.5	6.9	0.43
37	Nov-08	4.5	7.2	1.53
38	Jun-09	4.5	7.1	1.14
39	Nov-09	4.5	7.0	0.98



**REALM - COLDWATER ROAD FACILITY
RCRA LANDFILL LEAK DETECTION SYSTEM
SHEWART CONTROL CHART
Vault F - SpC**

Baseline Data				
Ti	Date	Conc.	Mean	Std. Dev
1	Jun-95	1400	1,535.00	218.31
2	Aug-95	1100		
3	Jun-96	1600		
4	Aug-96	1500		
5	Nov-96	1600		
6	Aug-97	1530		
7	Nov-97	1800		
8	Feb-98	1750		

Ti	Date	SCL	Conc. (Xi)	Standardized Conc. (Zi)
9	May-98	4.5	1400	-0.62
10	Mar-99	4.5	982	-2.53
11	May-99	4.5	1460	-0.34
12	Jul-99	4.5	1262	-1.25
13	Oct-99	4.5	1116	-1.92
14	Mar-00	4.5	1250	-1.31
15	Jun-00	4.5	1310	-1.03
16	Sep-00	4.5	1440	-0.44
17	Nov-00	4.5	1040	-2.27
18	Mar-01	4.5	1110	-1.95
19	May-01	4.5	1470	-0.30
20	Nov-01	4.5	1110	-1.95
21	Mar-02	4.5	1290	-1.12
22	May-02	4.5	1200	-1.53
23	Mar-03	4.5	1270	-1.21
24	Jun-03	4.5	1300	-1.08
25	Oct-03	4.5	1040	-2.27
26	Feb-04	4.5	1920	1.76
27	Jun-04	4.5	1300	-1.08
28	Nov-04	4.5	1160	-1.72
29	Jun-05	4.5	1780	1.12
30	Dec-05	4.5	1640	0.48
31	Jun-06	4.5	1355	-0.82
32	Nov-06	4.5	1610	0.34
33	Jun-07	4.5	1640	0.48
34	Nov-07	4.5	1600	0.30
35	Jun-08	4.5	1510	-0.11
36	Nov-08	4.5	1510	-0.11
37	Jun-09	4.5	1530	-0.02
38	Nov-09	4.5	1550	0.07

